

## APPENDIX 4-A

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<a href="http://www.ijcset.com/docs/IJCSET17-08-06-023.pdf">http://www.ijcset.com/docs/IJCSET17-08-06-023.pdf</a>	Stemming Techniques for Tamil Language
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<a href="http://www.ijiset.com/v1s8/IJSET_V1_18_12.pdf">http://www.ijiset.com/v1s8/IJSET_V1_18_12.pdf</a>	Automatic Keyword Extraction from Dravidian Language

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<a href="https://www.researchgate.net/profile/Scott_Mcgrath/publication/261449827_Concept_to_comm_it_A_pattern_designed_to_trace_code_changes_from_user_requests_to_change_implementatio">https://www.researchgate.net/profile/Scott_Mcgrath/publication/261449827_Concept_to_comm_it_A_pattern_designed_to_trace_code_changes_from_user_requests_to_change_implementatio</a>	Tweet Classification Concept to Commit

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<a href="https://pdfs.semanticscholar.org/da06/a5d14fab7a9ab1de14b85584c61430520383.pdf">https://pdfs.semanticscholar.org/da06/a5d14fab7a9ab1de14b85584c61430520383.pdf</a>	A TEMPLATE BASED ALGORITHM FOR AUTOMATIC SUMMARIZATION AND DIALOGUE MANAGEMENT FOR TEXT DOCUMENTS
<a href="http://76.163.213.215/PDF/vol.10,no.2/9-4100.pdf">http://76.163.213.215/PDF/vol.10,no.2/9-4100.pdf</a>	An arabic lemma-based stemmer for latent topic modeling.
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<a href="http://core.ac.uk/download/pdf/37824054.pdf">http://core.ac.uk/download/pdf/37824054.pdf</a>	JaTeCS, a Java library focused on automatic text categorization
<a href="https://www.pheme.eu/wp-content/uploads/2016/04/pheme-d2-3.pdf">https://www.pheme.eu/wp-content/uploads/2016/04/pheme-d2-3.pdf</a>	D2.3 Spatio-Temporal Algorithms
<a href="https://pdfs.semanticscholar.org/8d9a/cf26782d61b9e1793fdf1bcfa521919ef874.pdf">https://pdfs.semanticscholar.org/8d9a/cf26782d61b9e1793fdf1bcfa521919ef874.pdf</a>	Textual Data Clustering and Cluster Naming
<a href="http://www.ijsrpublications.com/ijsr.net/archive/v6i6/ART20174486.pdf">http://www.ijsrpublications.com/ijsr.net/archive/v6i6/ART20174486.pdf</a>	Bug Triage Using Data Reduction with Priority and Security
<a href="http://ceur-ws.org/Vol-2086/AlCS2017_paper_11.pdf">http://ceur-ws.org/Vol-2086/AlCS2017_paper_11.pdf</a>	Sentiment Evaluation User Business Assessment and Hashtag Analysis
<a href="http://repository.taibahu.edu.sa/bitstream/handle/123456789/5127/A%20hybrid%20machine%20learning%20model%20for%20multi-document%20summarization.pdf?sequence=1">http://repository.taibahu.edu.sa/bitstream/handle/123456789/5127/A%20hybrid%20machine%20learning%20model%20for%20multi-document%20summarization.pdf?sequence=1</a>	A hybrid machine learning model for multi-document summarization
<a href="https://www.researchgate.net/profile/Goutam_Chakraborty4/publication/279530318_Donor_Sentiment_and_Characteristic_Analysis_Using_SAS_Enterprise_Miner_and_SASR_Sentiment_Analysis_Studio_by_Ramcharan_Kakrala_and_Goutam_Chakraborty/links/5595584d08ae21086d20627">https://www.researchgate.net/profile/Goutam_Chakraborty4/publication/279530318_Donor_Sentiment_and_Characteristic_Analysis_Using_SAS_Enterprise_Miner_and_SASR_Sentiment_Analysis_Studio_by_Ramcharan_Kakrala_and_Goutam_Chakraborty/links/5595584d08ae21086d20627</a>	Donor Sentiment and Characteristic Analysis Using SAS® Enterprise Miner™ and SAS® Sentiment Analysis Studio

DownloadLink	Title
c.pdf	A New Approach to Classify Text based on CosFuzzy Logic
<a href="https://pdfs.semanticscholar.org/9256/31e75d52c9e09c3aa188305261760aa6e5c3.pdf">https://pdfs.semanticscholar.org/9256/31e75d52c9e09c3aa188305261760aa6e5c3.pdf</a>	A Novel Weighted Probabilistic Based Gene-Disease Document Classification Model Using Hadoop Framework for Distributed Biomedical Repositories
<a href="https://www.ripublication.com/ijaer17/ijaer17_12n22_08.pdf">https://www.ripublication.com/ijaer17/ijaer17_12n22_08.pdf</a>	Topical text network construction based on seed word augmentation
<a href="http://or.nsfc.gov.cn/bitstream/00001903-5/418062/1/1000013347687.pdf">http://or.nsfc.gov.cn/bitstream/00001903-5/418062/1/1000013347687.pdf</a>	Two Novel Techniques for Space Compaction on Biological Sequences.
<a href="https://www.researchgate.net/profile/Andreas_Kanavos/publication/306079434_Two_Novel_Techniques_for_Space_Compaction_on_Biological_Sequences/links/57ae2bb08aeb2cf17bdbb61/Two-Novel-Techniques-for-Space-Compaction-on-Biological-Sequences.pdf">https://www.researchgate.net/profile/Andreas_Kanavos/publication/306079434_Two_Novel_Techniques_for_Space_Compaction_on_Biological_Sequences/links/57ae2bb08aeb2cf17bdbb61/Two-Novel-Techniques-for-Space-Compaction-on-Biological-Sequences.pdf</a>	Data Mining Algorithms, its Functions and Structure
<a href="http://content.grin.com/document/v373667.pdf">http://content.grin.com/document/v373667.pdf</a>	Cette thèse a été dirigée par
<a href="https://oraprdnt.uqtr.quebec.ca/pls/public/docs/FWG/GSC/Publication/1645/34/1918/1/170232/8/0000331013_Travail_de_recherche_depot_final_26_07_2017_.pdf">https://oraprdnt.uqtr.quebec.ca/pls/public/docs/FWG/GSC/Publication/1645/34/1918/1/170232/8/0000331013_Travail_de_recherche_depot_final_26_07_2017_.pdf</a>	Utilizing the Categories Network in Wikipedia for Linking Named Entities
<a href="https://ijcit.com/archives/volume4/issue4/Paper040415.pdf">https://ijcit.com/archives/volume4/issue4/Paper040415.pdf</a>	<a href="#"><u>Phil@ Scale Computational Methods within Philosophy</u></a>
<a href="https://pure.uva.nl/ws/files/23671256/Wierst_et_al_Philosophy_at_scale.pdf">https://pure.uva.nl/ws/files/23671256/Wierst_et_al_Philosophy_at_scale.pdf</a>	Détection de phrases similaires utilisant des n-grammes de caractères
<a href="http://depot-e.uqtr.ca/8220/1/031872959.pdf">http://depot-e.uqtr.ca/8220/1/031872959.pdf</a>	
<a href="https://www.researchgate.net/profile/Florian_Neukart/publication/264977188_Foundations_of_an_Artificial_Neocortex/links/5816961f08ae90acb240fb72/Foundations-of-an-Artificial-Neocortex.pdf">https://www.researchgate.net/profile/Florian_Neukart/publication/264977188_Foundations_of_an_Artificial_Neocortex/links/5816961f08ae90acb240fb72/Foundations-of-an-Artificial-Neocortex.pdf</a>	Foundations of an Artificial Neocortex
<a href="https://pdfs.semanticscholar.org/0f84/e7069dd9c278d2b04cee753430e0e39a101e.pdf">https://pdfs.semanticscholar.org/0f84/e7069dd9c278d2b04cee753430e0e39a101e.pdf</a>	Research Article Recommendation of News Groups to the Users Based on Cobweb Clustering

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<a href="https://infoscience.epfl.ch/record/197477/files/ASE.pdf">https://infoscience.epfl.ch/record/197477/files/ASE.pdf;</a>	A model of online social interactions based on sentiment analysis and content similarity
<a href="http://crpit.com/confpapers/CRPTIV158Peden.pdf">http://crpit.com/confpapers/CRPTIV158Peden.pdf</a>	Detecting Digital Newspaper Duplicates with Focus on eliminating OCR errors
<a href="http://www.acrwebsite.org/volumes/v45/acr_vol45_1024234.pdf">http://www.acrwebsite.org/volumes/v45/acr_vol45_1024234.pdf</a>	Web 2.0 Online Communities Or Bla Bla Land
<a href="https://www.researchgate.net/profile/Thyagharaajan_KK/publication/281741314_Concept-based_annotation_and_retrieval_of_e-learning_materials/links/55f67d4e08ae7a10cf8b9946.pdf">https://www.researchgate.net/profile/Thyagharaajan_KK/publication/281741314_Concept-based_annotation_and_retrieval_of_e-learning_materials/links/55f67d4e08ae7a10cf8b9946.pdf</a>	Concept based annotation and retrieval of e learning materials
<a href="https://www.ezzoterik.com/wp-content/uploads/2016/03/LNM16.pdf">https://www.ezzoterik.com/wp-content/uploads/2016/03/LNM16.pdf</a>	Topic Modeling of NASA Space System Problem Reports
<a href="https://pdfs.semanticscholar.org/ae17/d410f24494835d776c84ab2d73db906867df.pdf">https://pdfs.semanticscholar.org/ae17/d410f24494835d776c84ab2d73db906867df.pdf</a>	Extracting User Search Goals by Conceptually Related Feedback Sessions
<a href="http://www.academia.edu/download/34511044/C016461426.pdf">http://www.academia.edu/download/34511044/C016461426.pdf</a>	A novel semantic level text classification by combining NLP and Thesaurus concepts
<a href="http://web2py.iiit.ac.in/research_centres/publications/download/mastersthesis.pdf.af2224b7bc18088c.4b756e616c2d5468657369732d46696e616c2e706466.pdf">http://web2py.iiit.ac.in/research_centres/publications/download/mastersthesis.pdf.af2224b7bc18088c.4b756e616c2d5468657369732d46696e616c2e706466.pdf</a>	Hindi to English Machine Translation
<a href="http://ir.cs.georgetown.edu/downloads/towards-citation-based.pdf">http://ir.cs.georgetown.edu/downloads/towards-citation-based.pdf</a>	Towards citation-based summarization of biomedical literature
<a href="http://info.psu.edu.sa/psu/cis/malenezi/pdfs/TRAM.pdf">http://info.psu.edu.sa/psu/cis/malenezi/pdfs/TRAM.pdf</a>	Tram An approach for assigning bug reports using their metadata
<a href="http://www.ijacr.com/pdfs/PaperIJACR01-02-14.pdf">http://www.ijacr.com/pdfs/PaperIJACR01-02-14.pdf</a>	Mobile sms spam filtering based on mixing classifiers
<a href="http://project.cgm.unive.it/wordpress/wp-content/uploads/2013/10/newvalencia.pdf">http://project.cgm.unive.it/wordpress/wp-content/uploads/2013/10/newvalencia.pdf</a>	VENSES GetAsk a System for Hybrid Question Answering And Answer Recovery using Text Entailment
<a href="http://www.rcs.cic.ipn.mx/rs/2016_118/Clustering%20Techniques%20for%20DocumentClassification.pdf">http://www.rcs.cic.ipn.mx/rs/2016_118/Clustering%20Techniques%20for%20DocumentClassification.pdf</a>	Clustering Techniques for Document Classification.
<a href="https://pdfs.semanticscholar.org/dadd/902df0126dfa217066d69dba12dca7e895f.pdf">https://pdfs.semanticscholar.org/dadd/902df0126dfa217066d69dba12dca7e895f.pdf</a>	Fuzzy Feature Clustering for Text

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<a href="https://ieeexplore.ieee.org/xel/7/69/4358933/07412726.pdf">https://ieeexplore.ieee.org/xel/7/69/4358933/07412726.pdf</a>	Classification Using Sequence Classifier
<a href="https://www.researchgate.net/profile/Fatiha_Naouar3/publication/278701570_Relevance_Feedback_in_Collaborative_Information_Retrieval_based_on_Validated_Annotation/links/55c6409e08aea747d633617.pdf">https://www.researchgate.net/profile/Fatiha_Naouar3/publication/278701570_Relevance_Feedback_in_Collaborative_Information_Retrieval_based_on_Validated_Annotation/links/55c6409e08aea747d633617.pdf</a>	Using hashtag graph-based topic model to connect semantically-related words without co-occurrence in microblogs
<a href="https://www.researchgate.net/profile/323289377_A_Stylistic_Analysis_of_Dystopia_Hopelessness_and_Disturbance_in_George_Owell's_Nineteen_Eighty-Four/links/5a8c372a6fdcc3b21eb436f/A-Stylistic-Analysis-of-Dystopia-Hopelessness-and-Disturbance-in-George-Owells-Nineteen-Eighty-Four.pdf">https://www.researchgate.net/profile/323289377_A_Stylistic_Analysis_of_Dystopia_Hopelessness_and_Disturbance_in_George_Owell's_Nineteen_Eighty-Four/links/5a8c372a6fdcc3b21eb436f/A-Stylistic-Analysis-of-Dystopia-Hopelessness-and-Disturbance-in-George-Owells-Nineteen-Eighty-Four.pdf</a>	Relevance feedback in collaborative information retrieval based on validated annotation
<a href="http://www.academia.edu/download/39829567/RamirezVaquero_LAM064_Dissertation.pdf">http://www.academia.edu/download/39829567/RamirezVaquero_LAM064_Dissertation.pdf</a>	A Stylistic Analysis of Dystopia Hopelessness and Disturbance in George Orwell's Nineteen Eighty Four
<a href="https://www.researchgate.net/profile/Michalinos_Zemblyas/publication/283227089_Researching_emotional_geographies_in_schools_The_value_of_critical_ethnography/links/566227d2c08ae418a78698167/Researching-emotional-geographies-in-schools-The-value-of-critical-ethnography.pdf">https://www.researchgate.net/profile/Michalinos_Zemblyas/publication/283227089_Researching_emotional_geographies_in_schools_The_value_of_critical_ethnography/links/566227d2c08ae418a78698167/Researching-emotional-geographies-in-schools-The-value-of-critical-ethnography.pdf</a>	MA Translating Popular Culture Mark sheet for Dissertations—Option B (print) Translation with reflective T & F Proof
<a href="https://www.researchgate.net/profile/Priyanka_Siddheshwar/publication/263808569_Automatic_Emotion_Identification_in_Twitter/links/00b7d53becff1984ad000000/Automatic-Emotion-Identification-in-Twitter.pdf">https://www.researchgate.net/profile/Priyanka_Siddheshwar/publication/263808569_Automatic_Emotion_Identification_in_Twitter/links/00b7d53becff1984ad000000/Automatic-Emotion-Identification-in-Twitter.pdf</a>	Automatic Emotion Identification in Twitter
<a href="http://itc.cs.cmu.edu/sites/default/files/research/reports/2014/CMU-LTI-14-005-D.pdf">http://itc.cs.cmu.edu/sites/default/files/research/reports/2014/CMU-LTI-14-005-D.pdf</a>	Large-scale Structured Learning
<a href="http://ir.lib.u-ryukyu.ac.jp/bitstream/20500.12000/30654/3/rikoken290text.pdf">http://ir.lib.u-ryukyu.ac.jp/bitstream/20500.12000/30654/3/rikoken290text.pdf</a>	Unsupervised Classification for Main Features Extraction in
<a href="http://faculty.cse.tamu.edu/huangrh/dissertation_2014.pdf">http://faculty.cse.tamu.edu/huangrh/dissertation_2014.pdf</a>	IMPROVING EVENT EXTRACTION BY DISCOURSE-GUIDED AND MULTI-FACETED EVENT RECOGNITION
<a href="https://www.distributedcomputingsystems.co.uk/Documents/UserGuideTFF.pdf">https://www.distributedcomputingsystems.co.uk/Documents/UserGuideTFF.pdf</a>	Textfl0
<a href="http://www.cs.utah.edu/~riloff/pdfs/Official_Huang_Disseration_2014.pdf">http://www.cs.utah.edu/~riloff/pdfs/Official_Huang_Disseration_2014.pdf</a>	Improving information extraction by

<b>DownloadLink</b>	<b>Title</b>
	discourse-guided and multifaceted event recognition



## APPENDIX 4-B

```
using System.Net;

WebClient client = new WebClient();

foreach (string currentURL in URLList)
{
    try
    {
        client.DownloadFileAsync(new Uri(currentURL), SelectedDownLoadFolder + "\\\" +
            TitleList[Array.IndexOf(URLList, currentURL)] + ".pdf");
    }
    catch
    {
        FailedList.Add("\n" + currentURL);
    }
}
```

## APPENDIX 4-C

```
List<string> missing = new List<string>();

string[] files = Directory.GetFiles(SelectedDownLoadFolder, "*.pdf",
    SearchOption.AllDirectories);

int ErrorCount = 0;
foreach (string currentURL in TitleList)
{
    var item = files.Where(o => o.Contains(currentURL)).FirstOrDefault();

    if (!files.Any(o => o.Contains(currentURL)))
    {
        ErrorCount++;
        missing.Add(currentURL);
    }
    else if ((new System.IO.FileInfo(item).Length) == 0)
    {
        ErrorCount++;
        missing.Add(currentURL);
    }
}
```



## APPENDIX 5-A

This appendix contains the raw results from RapidMiner plus the additional three columns used to determine the top 20% of themes occurrence.

Theme	2013			2014			2015			2016			2017			2018			Total	Average	Accumulative
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
machin_learn	40	200	40	239	40	165	39	306	37	304	15	58	1272	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
text_mine	53	222	50	242	52	306	45	174	40	160	12	32	1136	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
natur_languag	46	185	49	265	51	232	40	205	35	163	10	33	1083	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
inform_retriev	49	287	48	214	42	174	38	238	33	80	8	31	1024	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
data_mine	38	149	38	179	41	189	32	122	31	208	7	17	864	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
stop_word	40	139	45	142	39	109	39	216	32	181	14	49	836	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
naiv_bay	25	103	28	115	24	138	20	111	33	270	5	30	767	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
text_classif	28	175	34	181	18	128	16	111	29	148	4	22	765	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
languag_process	37	119	43	172	46	150	41	145	33	113	8	24	723	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
featur_select	20	144	20	84	20	139	15	115	23	198	3	6	686	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
text_document	33	131	36	150	34	124	27	92	23	152	9	25	674	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59
sentiment_analysis	13	41	16	138	14	80	14	77	18	257	3	15	608	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
neural_network	16	91	15	103	17	66	12	46	20	256	5	12	574	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
social_media	9	33	14	171	9	81	14	63	19	176	5	45	569	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
precis_recal	26	81	25	92	19	68	22	172	16	100	7	19	532	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
social_network	14	93	17	58	15	90	14	139	13	127	3	20	527	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
document_cluster	17	157	17	75	18	91	10	71	8	98	4	27	519	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
part_speech	14	52	21	109	22	73	17	70	16	204	2	2	510	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
comput_linguist	25	82	22	125	24	86	22	100	20	92	8	16	501	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
arab_text	9	112	9	59	9	103	8	56	7	157	2	12	499	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
topic_model	8	72	7	110	7	21	11	165	6	39	4	76	483	0.42					13.16		
term_frequenc	21	91	33	97	28	83	25	93	22	78	8	26	468	0.41					13.56		
text_categor	23	152	23	115	21	96	16	49	12	39	4	11	462	0.40					13.96		
support_vector	24	105	23	69	15	43	20	100	26	124	6	9	450	0.39					14.35		
vector_space	23	78	21	68	19	52	17	150	9	40	9	22	410	0.36					14.71		
train_data	19	42	24	85	17	45	22	133	25	90	6	11	406	0.35					15.06		
vector_machin	22	93	22	66	14	40	22	80	25	114	6	9	402	0.35					15.41		
name_entiti	12	26	9	62	12	86	7	172	7	18	3	8	372	0.32					15.73		
search_engin	17	61	19	61	24	52	20	83	9	26	3	76	359	0.31					16.05		
similar_measur	16	61	23	86	21	65	17	90	9	41	5	11	354	0.31					16.35		
document_frequenc	24	65	31	91	25	77	21	53	21	51	7	11	348	0.30					16.66		
featur_extract	16	63	17	36	15	71	12	92	17	71	5	11	344	0.30					16.95		
posit_neg	15	30	17	68	15	44	12	60	12	118	6	16	336	0.29					17.25		
base_approach	18	38	21	80	25	66	21	38	10	85	5	10	317	0.28					17.52		
term_weight	21	69	23	95	12	33	9	60	9	50	2	6	313	0.27					17.79		
text_process	21	54	19	56	23	38	23	41	21	121	2	2	312	0.27					18.06		
text_analysi	19	46	22	37	25	35	22	130	18	39	8	13	300	0.26					18.32		
learn_algorithm	17	45	23	59	14	40	19	60	24	86	4	7	297	0.26					18.58		
word_remov	28	50	28	67	28	49	31	65	20	42	10	19	292	0.25					18.84		
space_model	22	59	18	39	15	44	15	95	10	40	5	13	290	0.25					19.09		
artifici_intellig	23	55	25	63	23	40	21	55	19	66	5	6	285	0.25					19.33		
cross_valid	8	34	10	38	8	23	11	95	17	71	5	16	277	0.24					19.58		
arab_langag	9	35	10	51	11	48	7	68	5	66	3	6	274	0.24					19.81		
featur_vector	18	64	12	27	13	56	6	49	13	65	3	6	267	0.23					20.05		
stem_algorithm	18	41	22	66	21	43	15	64	13	30	7	20	264	0.23					20.27		

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
cluster_algorithm	13	83	14	54	7	42	10	23	10	48	1	11	261	0.23	0.23	20.50	20.50	20.50			
word_document	21	45	29	57	21	39	22	57	16	42	10	21	261	0.23	0.23	20.73	20.73	20.73			
train_test	16	40	16	43	9	22	8	81	12	53	9	22	261	0.23	0.23	20.95	20.95	20.95			
scienc_engin	16	40	20	64	13	37	17	53	13	55	3	8	257	0.22	0.22	21.18	21.18	21.18			
number_word	21	55	22	54	17	30	25	68	15	38	7	10	255	0.22	0.22	21.40	21.40	21.40			
word_stem	24	40	28	58	29	47	26	58	22	45	4	6	254	0.22	0.22	21.62	21.62	21.62			
inform_extract	18	32	17	46	21	68	14	24	9	80	3	4	254	0.22	0.22	21.84	21.84	21.84			
decis_tree	15	22	18	86	11	29	10	18	17	89	1	2	246	0.21	0.21	22.05	22.05	22.05			
document_collect	19	49	28	51	19	52	19	61	9	17	5	12	242	0.21	0.21	22.26	22.26	22.26			
semant_analysi	17	36	14	50	13	47	16	50	11	43	5	15	241	0.21	0.21	22.47	22.47	22.47			
softwar_engin	5	8	15	50	9	39	9	35	7	105	2	2	239	0.21	0.21	22.68	22.68	22.68			
document_document	32	103	21	33	13	24	18	29	14	40	3	5	234	0.20	0.20	22.88	22.88	22.88			
latent_semant	16	40	14	44	8	28	14	77	9	32	5	11	232	0.20	0.20	23.08	23.08	23.08			
invers_document	17	36	25	52	17	44	19	40	20	38	7	9	219	0.19	0.19	23.28	23.28	23.28			
retriev_system	21	70	14	25	11	36	16	68	7	8	3	9	216	0.19	0.19	23.46	23.46	23.46			
depart_comput	26	49	19	34	19	45	23	38	18	41	4	4	211	0.18	0.18	23.65	23.65	23.65			
bay_classifi	10	23	12	35	13	35	11	45	15	63	1	9	210	0.18	0.18	23.83	23.83	23.83			
test_data	10	18	17	45	7	13	14	49	15	81	3	4	210	0.18	0.18	24.01	24.01	24.01			
cosin_similar	15	44	15	46	12	32	9	58	6	13	5	13	206	0.18	0.18	24.19	24.19	24.19			
document_term	21	40	19	40	21	47	15	42	14	29	2	5	203	0.18	0.18	24.37	24.37	24.37			
data_process	10	16	9	54	16	40	12	36	14	56	1	1	203	0.18	0.18	24.54	24.54	24.54			
data_set	18	60	14	24	12	23	15	30	18	57	3	3	197	0.17	0.17	24.71	24.71	24.71			
data_collect	13	38	24	45	14	26	10	21	13	60	3	6	196	0.17	0.17	24.88	24.88	24.88			
rule_base	9	16	14	37	14	31	17	38	13	64	2	2	188	0.16	0.16	25.05	25.05	25.05			
word_list	20	55	10	14	8	16	17	66	7	31	3	4	186	0.16	0.16	25.21	25.21	25.21			

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
train_model	9	35	6	20	8	27	8	63	6	16	6	25	186	0.16	0.16	25.37					
keyword_extract	5	80	7	31	7	10	10	53	5	10	1	1	185	0.16	0.16	25.53					
random_forest	2	6	5	19	2	4	4	48	12	98	2	8	183	0.16	0.16	25.69					
base_method	14	51	17	43	12	27	13	27	13	28	4	5	181	0.16	0.16	25.85					
nearest_neighbor	12	52	16	51	5	11	8	23	14	40	1	2	179	0.16	0.16	26.00					
latent_dirichlet	11	26	9	56	4	5	11	45	4	32	3	15	179	0.16	0.16	26.16					
stem_word	13	31	18	28	16	42	19	40	14	33	4	4	178	0.15	0.15	26.31					
classif_algorithm	12	27	15	31	10	18	9	23	18	76	2	3	178	0.15	0.15	26.47					
porter_stemmer	8	104	9	17	8	9	7	18	9	16	9	13	177	0.15	0.15	26.62					
speech_tag	12	33	11	42	14	27	8	23	8	51	1	1	177	0.15	0.15	26.77					
mine_techniqu	6	13	11	35	17	54	10	30	8	32	5	13	177	0.15	0.15	26.93					
knowledg_base	9	12	15	36	17	52	15	57	9	14	4	6	177	0.15	0.15	27.08					
scienc_technolog	14	41	21	57	16	30	11	15	10	21	4	12	176	0.15	0.15	27.23					
electr_engin	4	5	6	17	3	5	5	134	6	7	3	8	176	0.15	0.15	27.39					
supervis_learn	11	20	17	42	11	29	11	35	16	48	1	1	175	0.15	0.15	27.54					
semant_similar	4	6	14	51	7	27	11	78	4	4	5	9	175	0.15	0.15	27.69					
model_base	21	47	10	17	10	16	10	21	12	70	1	3	174	0.15	0.15	27.84					
base_featur	11	23	12	74	5	9	10	45	9	18	4	5	174	0.15	0.15	27.99					
engin_comput	4	5	9	10	4	6	6	133	10	11	4	9	174	0.15	0.15	28.14					
light_stem	7	36	7	24	5	23	6	16	4	72	1	1	172	0.15	0.15	28.29					
text_file	12	21	10	17	10	21	14	31	13	71	4	11	172	0.15	0.15	28.44					
cloud_comput	2	9	3	3	6	10	2	31	9	118	1	1	172	0.15	0.15	28.59					
data_analysi	10	22	12	32	11	28	11	37	15	47	4	4	170	0.15	0.15	28.74					
document_contain	22	45	22	39	18	28	11	27	13	18	7	10	167	0.14	0.14	28.88					
dirichlet_alloc	11	24	8	48	4	5	11	41	4	32	3	15	165	0.14	0.14	29.03					

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
automat_text	17	46	16	31	12	26	11	41	10	16	2	2	162	0.14	0.14	29.17					
remov_stop	16	26	26	32	19	27	19	43	16	23	6	11	162	0.14	0.14	29.31					
engin_technolog	4	9	9	33	9	30	14	58	9	19	5	13	162	0.14	0.14	29.45					
cluster_cluster	11	36	11	16	6	29	11	52	7	25	2	3	161	0.14	0.14	29.59					
document_classif	18	29	9	31	11	38	8	20	12	39	4	4	161	0.14	0.14	29.73					
word_sentenc	9	20	20	62	10	21	12	29	13	28	1	1	161	0.14	0.14	29.87					
model_us	7	15	12	14	8	10	8	26	15	82	6	13	160	0.14	0.14	30.01					
word_frequenc	12	20	12	36	7	10	14	49	12	36	4	7	158	0.14	0.14	30.14					
languag_model	11	27	7	59	4	9	8	35	8	23	1	3	156	0.14	0.14	30.28					
classif_us	14	24	17	49	12	23	9	15	15	30	4	15	156	0.14	0.14	30.42					
solv_problem	16	21	15	29	12	19	11	27	7	59	1	1	156	0.14	0.14	30.55					
system_us	12	31	15	26	15	32	9	28	14	28	4	9	154	0.13	0.13	30.68					
recal_precis	12	22	11	26	13	33	13	40	7	19	4	14	154	0.13	0.13	30.82					
learn_approach	10	12	12	47	10	16	13	42	14	32	3	5	154	0.13	0.13	30.95					
document_summar	6	22	7	61	7	14	7	45	4	8	1	2	152	0.13	0.13	31.08					
frequenc_word	12	21	15	42	12	14	14	42	11	22	5	10	151	0.13	0.13	31.22					
inform_scien	20	37	23	30	16	23	17	33	12	22	3	5	150	0.13	0.13	31.35					
word_text	18	24	21	34	19	21	9	20	16	46	4	5	150	0.13	0.13	31.48					
frequenc_term	21	41	15	29	14	35	12	19	11	21	2	4	149	0.13	0.13	31.60					
frequenc_invers	15	23	21	40	12	25	15	22	17	32	6	7	149	0.13	0.13	31.73					
improv_perform	19	30	13	25	11	20	10	14	15	43	5	16	148	0.13	0.13	31.86					
relev_document	19	40	8	25	7	16	18	47	7	9	3	9	146	0.13	0.13	31.99					
inform_process	17	20	20	36	20	24	14	27	13	32	4	6	145	0.13	0.13	32.12					
comput_applic	12	55	13	20	8	24	7	7	9	20	4	17	143	0.12	0.12	32.24					
document_word	17	31	17	22	16	29	20	39	10	19	3	3	143	0.12	0.12	32.36					

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
extract_featur	16	37	11	17	9	25	9	22	14	32	6	9	142	0.12	0.12	32.49	32.49	32.49	32.49		
compar_studi	16	30	13	30	15	36	11	21	12	24	1	1	142	0.12	0.12	32.61	32.61	32.61	32.61		
method_base	14	30	13	32	14	21	11	25	12	29	3	5	142	0.12	0.12	32.73	32.73	32.73	32.73		
select_method	11	49	13	22	5	18	4	6	12	41	2	4	140	0.12	0.12	32.86	32.86	32.86	32.86		
recal_measur	11	18	13	36	10	25	10	20	10	38	3	3	140	0.12	0.12	32.98	32.98	32.98	32.98		
classif_accuraci	14	35	10	21	13	32	6	10	14	39	2	2	139	0.12	0.12	33.10	33.10	33.10	33.10		
number_time	14	19	17	25	17	33	14	27	11	33	2	2	139	0.12	0.12	33.22	33.22	33.22	33.22		
topic_topic	9	46	7	28	8	13	10	27	6	16	3	8	138	0.12	0.12	33.34	33.34	33.34	33.34		
learn_model	6	29	8	14	2	2	9	58	10	24	4	11	138	0.12	0.12	33.46	33.46	33.46	33.46		
document_repres	23	44	15	34	7	13	9	20	12	20	4	5	136	0.12	0.12	33.58	33.58	33.58	33.58		
languag_text	14	19	15	47	13	16	13	21	9	31	2	2	136	0.12	0.12	33.69	33.69	33.69	33.69		
learn_techniqu	11	18	15	20	14	19	13	30	15	46	3	3	136	0.12	0.12	33.81	33.81	33.81	33.81		
cluster_method	13	53	12	22	7	16	6	8	5	28	2	8	135	0.12	0.12	33.93	33.93	33.93	33.93		
similar_document	14	35	15	26	14	27	11	33	7	10	2	4	135	0.12	0.12	34.05	34.05	34.05	34.05		
multi_document	3	31	6	64	3	7	6	23	3	8	1	2	135	0.12	0.12	34.16	34.16	34.16	34.16		
base_model	10	31	13	27	8	14	10	23	11	36	2	2	133	0.12	0.12	34.28	34.28	34.28	34.28		
number_featur	13	30	11	33	10	26	4	13	7	27	3	4	133	0.12	0.12	34.39	34.39	34.39	34.39		
document_us	21	37	21	33	14	19	14	25	10	13	3	5	132	0.11	0.11	34.51	34.51	34.51	34.51		
knowledg_discoveri	16	28	18	25	22	45	12	14	9	16	3	4	132	0.11	0.11	34.62	34.62	34.62	34.62		
word_appear	14	20	14	25	14	25	14	40	12	17	4	4	131	0.11	0.11	34.74	34.74	34.74	34.74		
word_featur	9	13	6	17	8	9	7	63	8	23	4	4	129	0.11	0.11	34.85	34.85	34.85	34.85		
document_vector	12	35	9	15	8	31	7	26	7	12	4	8	127	0.11	0.11	34.96	34.96	34.96	34.96		
mean_word	10	16	20	45	11	18	13	24	7	15	5	9	127	0.11	0.11	35.07	35.07	35.07	35.07		
extract_text	10	14	23	31	13	17	15	29	11	32	4	4	127	0.11	0.11	35.18	35.18	35.18	35.18		
textual_data	11	19	15	23	12	15	14	21	14	44	2	4	126	0.11	0.11	35.29	35.29	35.29	35.29		

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	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
form_word	8	38	7	11	15	21	13	33	13	19	1	3	125	0.11	35.40	0.11	35.40	35.40			
model_inform	5	5	8	13	4	4	3	4	6	95	3	4	125	0.11	35.51	0.11	35.51	35.51			
repres_document	19	38	15	31	12	18	14	18	8	16	2	3	124	0.11	35.61	0.11	35.61	35.61			
model_model	9	27	6	17	6	6	37	8	29	5	8	124	0.11	35.72	0.11	35.72	35.72				
process_step	15	18	11	14	10	13	17	24	18	49	2	6	124	0.11	35.83	0.11	35.83	35.83			
extract_inform	8	12	17	31	11	28	12	17	8	35	1	1	124	0.11	35.94	0.11	35.94	35.94			
base_similar	11	25	11	16	11	31	10	29	4	7	6	14	122	0.11	36.04	0.11	36.04	36.04			
languag_technolog	9	18	8	43	11	17	13	19	10	17	2	8	122	0.11	36.15	0.11	36.15	36.15			
word_base	8	14	16	60	10	13	13	24	5	8	3	3	122	0.11	36.26	0.11	36.26	36.26			
comput_engin	5	8	11	23	10	28	12	23	13	39	1	1	122	0.11	36.36	0.11	36.36	36.36			
scienc_inform	6	14	6	7	6	19	12	43	10	36	1	2	121	0.11	36.47	0.11	36.47	36.47			
right_reserv	5	12	9	56	5	27	3	9	3	12	1	5	121	0.11	36.57	0.11	36.57	36.57			
opinion_mine	5	38	8	24	5	25	7	10	9	17	4	6	120	0.10	36.68	0.10	36.68	36.68			
process_text	14	17	17	24	17	24	15	19	13	33	3	3	120	0.10	36.78	0.10	36.78	36.78			
evalu_metric	5	7	7	14	6	10	5	28	4	54	5	7	120	0.10	36.88	0.10	36.88	36.88			
manag_system	4	6	4	6	4	11	5	30	8	65	2	2	120	0.10	36.99	0.10	36.99	36.99			
classif_task	13	36	16	25	9	13	6	25	10	17	1	3	119	0.10	37.09	0.10	37.09	37.09			
document_number	14	22	12	14	11	22	8	13	10	42	5	6	119	0.10	37.19	0.10	37.19	37.19			
stem_process	13	15	13	25	14	24	14	22	13	18	5	14	118	0.10	37.30	0.10	37.30	37.30			
test_dataset	4	13	5	20	6	11	8	50	14	19	3	5	118	0.10	37.40	0.10	37.40	37.40			
document_represent	9	48	9	18	9	14	8	17	8	17	1	3	117	0.10	37.50	0.10	37.50	37.50			
noun_verb	7	11	15	29	13	18	9	23	8	35	1	1	117	0.10	37.60	0.10	37.60	37.60			
weight_term	16	29	17	32	9	16	6	15	10	22	1	2	116	0.10	37.70	0.10	37.70	37.70			
us_word	12	16	17	25	12	17	13	29	13	18	5	11	116	0.10	37.80	0.10	37.80	37.80			
amount_data	5	9	8	14	11	28	12	26	9	37	2	2	116	0.10	37.90	0.10	37.90	37.90			

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	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
word_model	10	18	8	21	7	17	10	40	5	8	5	11	115	0.10	38.00						
document_matrix	9	40	7	15	3	7	10	23	10	22	1	7	114	0.10	38.10						
number_topic	4	23	4	11	1	1	7	52	4	14	3	13	114	0.10	38.20						
fold_cross	6	12	6	21	7	8	8	35	11	30	4	8	114	0.10	38.30						
similar_word	7	10	10	37	7	20	12	37	5	5	5	5	114	0.10	38.40						
word_vector	2	8	7	13	4	5	4	44	2	4	5	40	114	0.10	38.50						
sentenc_document	10	35	11	23	6	26	8	21	5	6	1	2	113	0.10	38.60						
featur_space	15	33	8	18	3	7	7	10	14	44	1	1	113	0.10	38.70						
averag_precis	11	25	5	22	6	6	7	51	1	2	2	7	113	0.10	38.79						
term_base	8	24	8	38	12	36	9	9	4	4	2	2	113	0.10	38.89						
mean_cluster	9	19	6	20	7	18	9	25	7	22	2	9	113	0.10	38.99						
logist_regress	1	1	3	5	4	12	6	63	7	15	3	17	113	0.10	39.09						
term_extract	10	29	8	19	6	10	6	37	5	7	2	10	112	0.10	39.19						
collect_document	20	27	16	19	13	21	8	17	10	19	4	9	112	0.10	39.28						
recal_score	3	6	7	22	5	10	5	68	3	5	1	1	112	0.10	39.38						
us_data	5	6	7	11	12	13	6	10	16	69	3	3	112	0.10	39.48						
Khoja_stemmer	1	3	4	26	4	20	2	19	3	43	1	1	112	0.10	39.57						
text_content	3	3	12	39	8	33	10	24	6	10	1	3	112	0.10	39.67						
stock_market	1	1	2	2	3	13	1	6	5	88	1	1	111	0.10	39.77						
number_cluster	11	38	11	20	7	13	7	15	4	15	3	9	110	0.10	39.86						
morpholog_analysi	10	24	8	26	6	18	8	18	5	23	1	1	110	0.10	39.96						
pattern_recognit	13	14	13	28	10	26	7	11	11	25	3	6	110	0.10	40.05						
us_inform	8	9	15	19	13	21	13	22	7	35	3	4	110	0.10	40.15						
data_data	8	19	11	16	10	31	9	11	9	29	2	3	109	0.09	40.24						
contain_word	13	25	13	22	8	16	32	12	18	3	3	108	0.09	40.34							

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
classif_model	11	13	8	12	3	8	6	15	11	57	3	3	108	0.09	0.09	40.43					
base_text	7	10	13	22	16	24	11	22	15	27	3	3	108	0.09	0.09	40.53					
step_step	9	35	5	23	10	25	7	12	6	11	1	1	107	0.09	0.09	40.62					
user_queri	5	29	9	10	12	19	13	19	5	7	2	23	107	0.09	0.09	40.71					
model_train	8	18	6	10	6	8	46	8	17	6	8	107	0.09	0.09	40.80						
train_document	12	54	11	13	6	14	4	11	7	13	1	1	106	0.09	0.09	40.90					
featur_featur	15	27	8	15	7	12	5	31	8	16	4	5	106	0.09	0.09	40.99					
index_term	14	23	13	19	12	28	10	21	9	11	3	4	106	0.09	0.09	41.08					
select_featur	7	18	10	18	6	12	6	24	10	31	2	3	106	0.09	0.09	41.17					
unstructur_data	11	37	14	20	8	20	6	13	7	14	1	1	105	0.09	0.09	41.26					
arab_document	7	33	7	21	6	14	6	20	4	15	1	2	105	0.09	0.09	41.36					
us_machin	7	8	13	29	5	6	12	29	12	32	1	1	105	0.09	0.09	41.45					
time_consum	16	23	17	35	7	10	5	5	13	24	5	7	104	0.09	0.09	41.54					
algorithm_base	8	14	6	15	10	15	15	24	17	31	4	5	104	0.09	0.09	41.63					
analysi_retriev	5	5	1	1	4	4	5	88	1	2	3	4	104	0.09	0.09	41.72					
knowledg_manag	12	41	9	11	7	10	12	28	9	11	1	2	103	0.09	0.09	41.81					
cluster_base	12	25	9	21	13	31	5	8	6	13	2	5	103	0.09	0.09	41.90					
cluster_document	11	24	11	24	7	26	7	12	5	12	1	5	103	0.09	0.09	41.99					
learn_method	15	20	17	23	9	12	12	24	11	20	4	4	103	0.09	0.09	42.08					
improv_accuraci	13	18	13	18	13	24	9	14	11	21	4	8	103	0.09	0.09	42.16					
word_mean	7	15	12	25	15	25	14	23	7	10	5	5	103	0.09	0.09	42.25					
textual_content	2	2	8	35	5	53	3	4	2	8	1	1	103	0.09	0.09	42.34					
cluster_us	12	22	7	13	13	32	6	9	9	21	3	5	102	0.09	0.09	42.43					
human_languag	8	12	12	24	15	20	12	19	10	20	2	7	102	0.09	0.09	42.52					
predict_model	5	9	5	6	3	10	7	12	9	56	3	9	102	0.09	0.09	42.61					

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
weight_scheme	12	27	7	8	13	23	6	20	6	19	3	4	101	0.09	0.09	42.70					
base_system	11	19	8	11	10	15	6	10	11	45	1	1	101	0.09	0.09	42.78					
intellig_system	8	12	14	20	5	8	11	15	9	40	6	6	101	0.09	0.09	42.87					
collect_data	4	5	15	22	8	11	7	13	11	47	2	3	101	0.09	0.09	42.96					
comput_inform	14	23	12	16	10	14	8	14	5	29	3	4	100	0.09	0.09	43.05					
mobil_devic	4	20	5	15	2	2	4	36	4	26	1	1	100	0.09	0.09	43.13					
word_occurr	5	19	10	45	6	8	8	13	5	14	1	1	100	0.09	0.09	43.22					
document_text	16	26	15	25	10	13	12	20	10	12	2	3	99	0.09	0.09	43.31					
classifi_classifi	8	24	6	18	7	19	5	16	10	15	2	7	99	0.09	0.09	43.39					
cluster_techniqu	10	28	7	13	12	22	5	15	4	13	3	7	98	0.09	0.09	43.48					
term_occur	13	22	11	23	11	22	8	17	7	9	4	5	98	0.09	0.09	43.56					
gold_standard	5	7	4	9	2	9	8	47	5	23	1	3	98	0.09	0.09	43.65					
queri_term	2	4	4	17	3	4	6	22	5	36	2	15	98	0.09	0.09	43.73					
mean_algorithm	9	19	5	17	9	26	6	14	7	17	1	4	97	0.08	0.08	43.82					
world_wide	12	19	9	21	12	18	16	28	4	9	2	2	97	0.08	0.08	43.90					
text_preprocess	11	17	10	13	13	22	8	22	9	21	1	2	97	0.08	0.08	43.99					
system_develop	4	15	9	13	6	15	6	15	9	35	2	4	97	0.08	0.08	44.07					
term_term	14	27	11	21	12	20	9	17	4	8	1	3	96	0.08	0.08	44.15					
develop_inform	13	21	18	25	10	12	9	19	9	14	3	5	96	0.08	0.08	44.24					
point_view	5	16	6	10	9	40	6	11	5	17	1	2	96	0.08	0.08	44.32					
word_root	8	9	16	31	11	15	11	29	8	11	1	1	96	0.08	0.08	44.40					
recommend_system	2	4	5	40	5	37	2	3	5	11	1	1	96	0.08	0.08	44.49					
maximum_entropi	9	45	7	15	8	14	4	6	6	14	1	1	95	0.08	0.08	44.57					
stem_stem	10	27	13	19	13	15	8	20	9	13	1	1	95	0.08	0.08	44.65					
error_rate	6	24	11	38	1	1	7	18	6	12	1	2	95	0.08	0.08	44.73					

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
plai_role	9	19	8	11	10	23	7	10	8	31	1	1	95	0	0.08	44.82					
singl_word	6	13	12	18	9	15	13	32	10	12	1	5	95	0	0.08	44.90					
prefix_suffix	7	10	6	18	9	13	11	35	7	15	1	4	95	0	0.08	44.98					
imag_process	3	7	5	19	4	12	7	15	6	40	1	2	95	0	0.08	45.06					
root_word	5	5	10	33	9	14	9	21	10	16	4	6	95	0	0.08	45.15					
document_retriev	17	42	8	18	8	11	9	14	3	4	2	5	94	0	0.08	45.23					
retriev_document	14	31	9	17	7	13	15	21	6	8	2	4	94	0	0.08	45.31					
spam_filter	7	26	4	36	2	6	3	6	3	7	3	13	94	0	0.08	45.39					
occur_document	15	25	13	18	8	16	12	23	5	9	3	3	94	0	0.08	45.47					
increas_number	12	18	11	11	8	12	10	14	10	36	3	3	94	0	0.08	45.55					
system_base	10	17	13	25	5	7	7	13	8	29	2	3	94	0	0.08	45.64					
classif_method	7	9	17	25	4	12	9	13	12	34	1	1	94	0	0.08	45.72					
comput_system	2	3	11	25	7	11	5	18	8	25	3	12	94	0	0.08	45.80					
inform_gain	8	18	11	20	9	20	3	10	7	23	2	2	93	0	0.08	45.88					
data_train	6	11	12	17	7	8	13	25	13	25	4	7	93	0	0.08	45.96					
document_similar	9	16	8	13	7	15	10	30	7	10	2	8	92	0	0.08	46.04					
us_text	9	10	14	23	11	18	15	24	9	16	1	1	92	0	0.08	46.12					
docu_ment	4	7	6	24	8	17	7	33	5	7	3	4	92	0	0.08	46.20					
sourc_text	2	2	5	6	6	20	4	8	6	54	2	2	92	0	0.08	46.28					
full_text	4	27	5	11	7	18	8	26	5	6	2	3	91	0	0.08	46.36					
latent_topic	4	21	3	47	3	8	6	6	2	7	1	2	91	0	0.08	46.44					
model_text	11	20	10	21	11	14	11	14	8	19	3	3	91	0	0.08	46.52					
advanc_comput	4	18	5	11	6	17	5	13	8	31	1	1	91	0	0.08	46.60					
genet_algorithm	3	9	1	1	3	25	5	7	8	48	1	1	91	0	0.08	46.68					
knowledg_data	4	5	17	37	11	12	7	17	8	19	1	1	91	0	0.08	46.75					

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
search_queri	2	5	6	63	4	6	7	12	2	2	2	3	91	0.08	46.83						
frequent_word	9	13	12	19	6	11	8	19	10	17	4	11	90	0.08	46.91						
inform_text	11	12	12	15	12	21	10	16	9	23	3	3	90	0.08	46.99						
term_appear	14	33	11	19	10	21	6	8	4	4	1	4	89	0.08	47.07						
class_label	10	16	10	22	6	7	3	9	6	25	6	10	89	0.08	47.14						
train_dataset	3	4	6	15	4	11	7	39	9	17	2	3	89	0.08	47.22						
number_term	12	23	7	16	10	18	7	11	8	14	2	6	88	0.08	47.30						
probabl_distribut	8	23	7	10	1	3	10	30	6	16	3	6	88	0.08	47.37						
preprocess_step	12	16	9	15	10	20	7	19	8	14	3	4	88	0.08	47.45						
porter_stem	8	12	9	15	10	14	6	27	6	19	1	1	88	0.08	47.53						
issn_onlin	2	10	4	15	5	20	8	34	3	8	1	1	88	0.08	47.60						
linguist_featur	4	7	5	30	3	3	6	11	3	3	2	34	88	0.08	47.68						
similar_score	5	5	6	22	7	13	8	29	6	10	4	9	88	0.08	47.76						
text_retriev	11	21	13	15	7	13	12	30	4	4	2	4	87	0.08	47.83						
evalu_us	7	16	4	7	8	19	9	18	6	25	2	2	87	0.08	47.91						
word_occur	10	15	8	17	8	11	13	28	6	14	2	2	87	0.08	47.98						
condit_probabl	7	12	5	6	7	19	6	17	6	31	1	2	87	0.08	48.06						
data_engin	3	4	14	33	13	19	6	13	8	17	1	1	87	0.08	48.13						
test_document	12	49	5	5	4	10	4	7	5	14	1	1	86	0.07	48.21						
process_manag	10	25	9	9	7	8	8	22	8	19	2	3	86	0.07	48.28						
exampl_word	10	17	10	19	12	15	7	14	9	17	3	4	86	0.07	48.36						
languag_resourc	13	15	8	24	9	13	7	14	8	18	1	2	86	0.07	48.43						
reduc_number	13	15	15	23	12	13	8	12	6	22	1	1	86	0.07	48.51						
base_term	9	12	9	22	3	8	7	34	5	7	1	3	86	0.07	48.58						
approach_base	7	11	8	12	14	24	8	11	11	17	4	11	86	0.07	48.66						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
base_classifi	8	11	4	7	6	9	2	10	11	48	1	1	86	0	0.07	48	73				
process_techniqu	8	11	9	13	15	20	6	11	13	30	1	1	86	0	0.07	48	81				
fals_posit	5	10	10	23	5	6	7	19	6	6	4	22	86	0	0.07	48	88				
frequent_pattern	1	4	4	31	5	16	1	14	3	11	1	10	86	0	0.07	48	96				
comput_commun	6	32	4	12	8	20	2	2	7	17	2	2	85	0	0.07	49	03				
extract_keyword	4	29	8	20	5	7	5	17	2	10	2	2	85	0	0.07	49	10				
deep_learn	1	12	2	3	2	8	3	16	9	37	3	9	85	0	0.07	49	18				
method_us	10	12	7	15	10	12	10	17	9	22	5	7	85	0	0.07	49	25				
phrase_base	4	39	4	10	8	26	3	7	1	1	1	1	84	0	0.07	49	32				
document_corpu	13	33	6	12	6	8	10	15	6	10	3	6	84	0	0.07	49	40				
inform_knowledg	12	19	15	30	5	8	10	14	8	12	1	1	84	0	0.07	49	47				
classifi_text	11	16	10	16	7	13	11	20	12	16	2	3	84	0	0.07	49	54				
word_extract	8	11	13	33	7	14	5	9	9	13	4	4	84	0	0.07	49	61				
word_count	6	10	7	15	6	8	11	32	9	12	4	7	84	0	0.07	49	69				
retriev_inform	17	32	16	20	9	15	9	9	3	6	1	1	83	0	0.07	49	76				
list_word	11	28	8	11	4	6	12	25	6	12	1	1	83	0	0.07	49	83				
structur_data	7	23	10	13	10	30	2	3	7	13	1	1	83	0	0.07	49	90				
input_data	9	16	7	8	6	10	9	28	9	20	1	1	83	0	0.07	49	98				
appear_document	10	15	11	21	6	8	10	26	6	11	2	2	83	0	0.07	50	05				
train_classifi	8	13	10	18	6	8	7	25	9	14	4	5	83	0	0.07	50	12				
sentenc_sentenc	6	12	10	39	6	11	5	8	6	12	1	1	83	0	0.07	50	19				
classifi_us	8	10	10	16	6	7	6	8	10	39	3	3	83	0	0.07	50	26				
text_us	7	9	14	16	10	15	14	16	11	23	3	4	83	0	0.07	50	34				
combin_featur	3	4	8	33	1	2	5	34	7	8	2	2	83	0	0.07	50	41				
classifi_train	8	21	9	11	4	5	4	31	7	12	1	2	82	0	0.07	50	48				

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
approach_us	11	19	16	21	7	8	15	19	8	9	4	6	82	0.07	50.55						
document_queri	5	16	7	11	2	5	6	34	6	13	2	3	82	0.07	50.62						
classif_problem	13	14	11	16	3	6	6	21	12	22	2	3	82	0.07	50.69						
object_function	4	9	2	2	11	3	5	5	54	1	1	82	0.07	50.76							
text_corpu	6	6	9	16	3	5	10	21	8	33	1	1	82	0.07	50.84						
process_inform	4	4	15	26	21	29	11	13	7	8	2	2	82	0.07	50.91						
document_base	12	21	10	12	10	18	9	15	7	10	4	5	81	0.07	50.98						
infor_mation	5	13	5	21	5	23	4	14	5	7	1	3	81	0.07	51.05						
level_feature	3	13	2	6	1	28	4	8	3	25	1	1	81	0.07	51.12						
system_perform	7	12	7	13	4	5	10	22	8	21	5	8	81	0.07	51.19						
program_languag	8	11	5	5	2	3	12	42	7	19	1	1	81	0.07	51.26						
system_appli	7	8	6	7	6	9	5	5	14	51	1	1	81	0.07	51.33						
queri_expans	3	3	5	8	1	1	4	16	2	2	1	51	81	0.07	51.40						
word_order	8	18	12	18	11	12	9	16	7	13	3	3	80	0.07	51.47						
algorithm_algorithm	9	17	9	13	12	16	11	17	9	12	4	5	80	0.07	51.54						
text_base	8	14	12	15	4	8	10	16	10	24	3	3	80	0.07	51.61						
pattern_mine	5	13	5	23	3	32	3	3	3	3	1	6	80	0.07	51.68						
issn_volum	3	10	4	19	7	25	2	10	1	10	2	6	80	0.07	51.75						
remov_stem	9	10	18	23	13	18	10	12	10	13	4	4	80	0.07	51.82						
evalu_measur	9	12	8	11	5	6	5	22	4	26	2	2	79	0.07	51.88						
artifici_neural	3	5	3	18	5	18	3	6	9	31	1	1	79	0.07	51.95						
document_featur	13	28	5	7	6	12	6	12	3	17	2	2	78	0.07	52.02						
view_project	6	12	12	22	8	14	9	14	8	14	1	2	78	0.07	52.09						
model_evalu	5	6	3	3	5	8	30	7	24	4	10	78	0.07	52.16							
media_text	1	1	5	43	1	24	3	3	5	5	2	2	78	0.07	52.22						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
euclidean_distanc	9	18	6	9	9	20	5	12	6	14	2	4	77	0.07	52.29						
contain_term	12	15	13	20	8	13	8	19	5	6	4	4	77	0.07	52.36						
algorithm_perform	8	11	8	9	8	11	11	22	8	20	1	4	77	0.07	52.42						
extract_us	6	9	7	8	11	17	13	20	8	20	3	3	77	0.07	52.49						
colleg_engin	3	6	11	25	6	18	7	10	6	17	1	1	77	0.07	52.56						
build_model	3	5	4	18	3	3	4	8	9	42	1	1	77	0.07	52.63						
linguist_analysi	2	2	6	21	3	44	4	4	3	3	2	3	77	0.07	52.69						
engin_scienc	1	1	2	18	5	17	4	12	8	27	1	1	76	0.07	52.76						
contain_document	11	19	7	11	8	16	8	13	7	13	2	3	75	0.07	52.82						
singl_document	6	15	9	19	4	8	11	25	5	7	1	1	75	0.07	52.89						
data_structur	10	12	6	10	7	19	9	19	7	13	2	2	75	0.07	52.95						
system_design	8	9	10	11	12	13	8	14	9	27	1	1	75	0.07	53.02						
soft_comput	6	7	5	9	4	21	6	12	5	25	1	1	75	0.07	53.08						
volume_number	1	1	6	19	7	21	3	9	3	24	1	1	75	0.07	53.15						
relev_inform	13	19	9	11	17	28	7	10	4	5	1	1	74	0.06	53.21						
process_document	13	18	10	14	9	18	11	14	7	8	2	2	74	0.06	53.28						
text_featur	6	16	7	10	8	14	5	7	5	17	2	10	74	0.06	53.34						
cluster_process	7	13	8	9	4	15	4	20	6	16	1	1	74	0.06	53.41						
word_us	11	12	11	25	5	8	12	20	7	7	2	2	74	0.06	53.47						
classif_process	9	11	11	21	4	22	4	8	8	9	3	3	74	0.06	53.53						
word_term	5	6	6	8	14	15	17	27	11	16	1	2	74	0.06	53.60						
perform_test	2	5	1	1	3	3	8	16	2	48	1	1	74	0.06	53.66						
input_output	6	20	8	13	6	15	3	13	5	11	1	1	73	0.06	53.73						
user_request	11	16	18	18	14	16	13	13	7	7	2	3	73	0.06	53.79						
word_embed	1	15	1	3	1	1	2	24	2	3	3	27	73	0.06	53.85						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
random_field	4	10	3	8	2	8	38	3	4	2	5	73	0.06	53.92							
featur_base	7	9	6	26	5	9	7	16	8	12	1	1	73	0.06	53.98						
public_http	9	9	17	17	11	11	13	18	8	17	1	1	73	0.06	54.04						
word_topic	4	9	3	16	5	10	7	14	2	6	3	18	73	0.06	54.11						
number_iter	5	8	3	3	1	12	3	12	5	34	3	4	73	0.06	54.17						
unigram_bigram	3	3	8	16	5	10	3	10	5	29	2	5	73	0.06	54.23						
allow_user	9	17	4	4	10	15	12	14	11	19	2	3	72	0.06	54.30						
design_implement	8	15	3	6	10	14	6	11	6	22	2	4	72	0.06	54.36						
content_base	6	14	11	22	4	9	3	21	3	5	1	1	72	0.06	54.42						
semant_index	10	12	9	15	5	11	7	27	4	6	1	1	72	0.06	54.48						
cluster_text	6	8	12	24	5	15	6	13	4	11	1	1	72	0.06	54.55						
mathemat_model	3	3	2	18	3	3	2	23	4	24	1	1	72	0.06	54.61						
document_process	15	18	10	16	5	12	8	12	7	11	1	2	71	0.06	54.67						
algorithm_us	10	15	11	20	5	6	13	16	8	11	3	3	71	0.06	54.73						
period_time	6	15	2	2	8	19	3	8	7	25	1	2	71	0.06	54.79						
word_sens	10	12	4	14	8	17	8	11	6	14	3	3	71	0.06	54.85						
content_page	10	10	21	29	11	11	9	9	1	1	71	0.06	54.92								
wide_rang	6	9	9	13	9	10	8	15	10	23	1	1	71	0.06	54.98						
comput_time	6	6	7	8	5	28	6	15	7	11	3	3	71	0.06	55.04						
autom_text	10	30	10	11	8	11	9	11	5	6	1	1	70	0.06	55.10						
document_topic	6	15	5	14	2	3	10	17	5	10	5	11	70	0.06	55.16						
syntact_semant	4	14	7	19	4	10	2	2	5	24	1	1	70	0.06	55.22						
method_text	9	13	12	14	11	17	6	14	9	11	1	1	70	0.06	55.28						
unsupervis_learn	6	13	9	14	11	15	7	12	5	12	3	4	70	0.06	55.34						
discoveri_data	10	12	9	12	15	26	7	10	5	6	3	4	70	0.06	55.40						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
informa_tion	6	11	4	5	2	15	6	31	3	3	4	5	70	0.06	55.47						
data_text	9	10	8	11	12	14	10	16	11	16	3	3	70	0.06	55.53						
topic_document	5	9	3	10	4	4	8	14	3	17	4	16	70	0.06	55.59						
emot_recognit	2	8	1	1	1	2	47	1	3	2	10	70	0.06	55.65							
perform_us	6	6	12	15	8	8	9	12	11	26	3	3	70	0.06	55.71						
base_word	13	28	10	14	7	8	11	15	2	2	2	2	69	0.06	55.77						
vector_represent	6	16	6	25	1	1	4	14	4	5	4	8	69	0.06	55.83						
us_featur	9	12	9	12	10	10	10	15	10	18	1	2	69	0.06	55.89						
measur_similar	9	11	16	21	11	17	7	12	5	6	2	2	69	0.06	55.95						
corpu_base	4	9	3	15	9	11	7	21	4	10	3	3	69	0.06	56.01						
text_word	6	6	14	23	8	10	9	16	8	13	1	1	69	0.06	56.07						
graph_base	5	5	6	39	5	9	5	6	5	7	1	3	69	0.06	56.13						
semant_featur	3	4	5	8	5	19	5	27	5	8	3	3	69	0.06	56.19						
confus_matrix	2	3	6	15	4	10	5	21	5	13	2	7	69	0.06	56.25						
emot_classif	1	28	1	4	1	5	2	3	3	23	1	5	68	0.06	56.31						
network_analysi	7	25	6	10	6	10	3	15	3	7	1	1	68	0.06	56.37						
unstructur_text	5	17	8	9	7	15	5	10	8	11	2	6	68	0.06	56.42						
origin_document	8	14	3	6	7	20	7	12	6	14	2	2	68	0.06	56.48						
proc_conf	8	13	5	27	7	10	3	6	5	11	1	1	68	0.06	56.54						
sentenc_word	7	12	13	28	5	5	6	12	8	9	2	2	68	0.06	56.60						
distanc_measur	4	9	6	9	12	20	5	6	6	22	2	2	68	0.06	56.66						
berlin_heidelberg	4	5	8	14	5	7	8	10	9	27	3	5	68	0.06	56.72						
measur_precis	3	3	5	8	4	6	6	5	44	1	1	68	0.06	56.78							
similar_sentenc	2	3	7	18	7	13	4	23	2	2	9	68	0.06	56.84							
represent_document	8	19	7	12	9	17	9	11	4	5	1	3	67	0.06	56.90						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
train_corpus	3	8	5	9	4	5	4	30	5	13	1	2	67	0.06	56.95						
uniqu_word	6	7	5	17	4	6	10	28	3	3	3	6	67	0.06	57.01						
data_model	2	4	3	4	7	36	7	14	6	8	1	1	67	0.06	57.07						
hierarch_cluster	9	20	7	9	6	16	3	5	5	9	2	7	66	0.06	57.13						
probabilist_model	7	14	8	16	8	7	20	5	7	1	1	66	0.06	57.19							
evalu_perform	9	11	10	13	9	13	11	14	8	11	4	4	66	0.06	57.24						
model_perform	6	11	4	6	3	3	8	25	7	12	5	9	66	0.06	57.30						
word_level	3	11	4	33	4	6	3	3	4	12	1	1	66	0.06	57.36						
pattern_base	3	9	7	19	5	17	4	12	3	6	1	3	66	0.06	57.41						
classif_techniqu	6	8	5	6	3	13	4	6	12	30	1	3	66	0.06	57.47						
calcul_us	5	7	8	18	6	7	7	12	11	20	2	2	66	0.06	57.53						
data_sourc	5	6	6	9	4	17	4	7	10	26	1	1	66	0.06	57.59						
occur_word	6	6	13	16	6	7	9	20	7	16	1	1	66	0.06	57.64						
commun_technolog	7	24	4	6	3	3	5	21	6	10	1	1	65	0.06	57.70						
stem_arab	5	10	6	20	6	12	5	10	3	12	1	1	65	0.06	57.76						
inform_commun	6	8	8	11	4	4	5	24	5	17	1	1	65	0.06	57.81						
taken_account	5	6	6	10	4	16	6	10	11	22	1	1	65	0.06	57.87						
fals_neg	3	3	8	13	5	6	6	17	5	5	3	21	65	0.06	57.93						
tweet_contain	1	1	4	13	3	4	5	26	5	19	1	2	65	0.06	57.98						
occur_term	10	23	14	17	7	9	4	9	3	5	1	1	64	0.06	58.04						
base_cluster	7	18	7	10	7	17	5	8	6	7	1	4	64	0.06	58.09						
reduc_dimension	7	15	6	10	10	14	5	12	6	9	1	4	64	0.06	58.15						
system_evalu	9	13	2	4	10	12	10	25	7	8	2	2	64	0.06	58.20						
word_given	11	13	7	10	2	11	25	5	12	2	2	64	0.06	58.26							
mine_text	9	11	10	10	13	19	4	12	8	10	2	2	64	0.06	58.32						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
dataset_dataset	7	9	5	9	7	16	7	17	5	10	3	3	64	0.06	58.37						
process_time	6	9	8	15	2	2	6	15	5	6	1	17	64	0.06	58.43						
time_period	4	8	6	10	4	23	4	7	3	14	1	2	64	0.06	58.48						
automat_extract	5	6	9	17	11	16	4	5	8	18	1	2	64	0.06	58.54						
dataset_consist	6	6	9	15	6	10	6	21	5	5	4	7	64	0.06	58.59						
file_contain	4	4	8	11	5	9	7	27	6	12	1	1	64	0.06	58.65						
test_perform	3	3	6	8	3	3	4	8	7	38	1	4	64	0.06	58.70						
share_task	1	2	2	32	3	4	5	12	5	9	2	5	64	0.06	58.76						
document_train	8	19	6	7	6	19	5	6	5	11	1	1	63	0.05	58.81						
word_cluster	6	17	10	23	4	7	6	12	1	3	1	1	63	0.05	58.87						
user_gener	4	10	6	14	4	8	5	6	4	23	2	2	63	0.05	58.92						
base_semant	6	8	5	11	6	8	9	23	6	7	4	6	63	0.05	58.98						
statist_analysi	3	6	9	12	6	7	5	17	13	20	1	1	63	0.05	59.03						
transact_knowledg	3	4	12	29	9	10	5	8	4	11	1	1	63	0.05	59.09						
model_built	2	3	3	3	4	7	5	15	8	34	1	1	63	0.05	59.14						
twitter_user	1	2	1	2	3	6	6	23	5	27	2	3	63	0.05	59.20						
model_document	13	23	5	8	9	13	7	9	4	7	1	2	62	0.05	59.25						
retriev_relev	9	21	8	11	5	8	9	12	2	2	3	8	62	0.05	59.31						
gram_gram	6	20	4	5	5	11	1	4	6	17	2	5	62	0.05	59.36						
speech_recognit	5	5	4	29	3	4	4	17	4	6	1	1	62	0.05	59.41						
linear_regress	1	1	2	2	1	1	5	21	5	33	3	4	62	0.05	59.47						
data_point	5	24	4	7	7	12	3	8	5	7	2	3	61	0.05	59.52						
common_word	11	19	9	10	5	7	10	10	7	14	1	1	61	0.05	59.57						
signal_process	7	14	8	30	3	3	4	5	4	8	1	1	61	0.05	59.63						
calcul_similar	7	12	11	21	5	6	5	10	6	9	3	3	61	0.05	59.68						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
system_system	7	11	8	9	9	13	7	11	6	15	2	2	61	0.05	59.73						
model_data	6	7	5	15	4	6	8	13	9	19	1	1	61	0.05	59.78						
standard_arab	4	6	5	9	1	1	5	6	4	38	1	1	61	0.05	59.84						
perform_system	2	4	5	8	6	14	9	24	7	10	1	1	61	0.05	59.89						
valu_calcul	1	1	10	19	8	9	9	16	9	15	1	1	61	0.05	59.94						
cluster_similar	10	20	8	11	11	17	6	7	2	3	1	2	60	0.05	60.00						
classif_text	10	15	9	11	6	8	6	11	12	14	1	1	60	0.05	60.05						
frequenc_document	10	15	15	22	7	8	5	8	3	3	3	4	60	0.05	60.10						
perform_evalu	10	12	11	18	5	6	8	17	4	4	3	3	60	0.05	60.15						
precis_measur	3	12	5	6	5	7	6	15	6	17	3	3	60	0.05	60.20						
algorithm_appli	10	10	9	14	11	14	8	8	8	13	1	1	60	0.05	60.26						
text_classifi	8	10	9	16	6	9	4	15	6	9	1	1	60	0.05	60.31						
model_predict	3	6	1	1	4	5	7	13	7	26	3	9	60	0.05	60.36						
analysi_method	5	5	6	16	3	9	4	7	7	19	4	4	60	0.05	60.41						
algo_rithm	2	4	5	9	7	20	8	21	3	4	2	2	60	0.05	60.46						
distribut_topic	1	2	4	13	2	4	8	25	2	7	2	9	60	0.05	60.52						
classifi_document	11	16	7	8	14	16	6	8	4	9	1	2	59	0.05	60.57						
text_collect	8	16	5	8	8	21	6	10	2	3	1	1	59	0.05	60.62						
extract_term	7	13	6	12	4	4	5	22	3	5	2	3	59	0.05	60.67						
repres_vector	10	13	7	9	5	5	5	11	8	18	2	3	59	0.05	60.72						
word_categori	7	13	2	2	5	24	5	17	2	2	1	1	59	0.05	60.77						
accuraci_precis	5	11	2	3	5	7	6	28	3	9	1	1	59	0.05	60.82						
punctuat_mark	7	9	7	19	11	12	7	8	5	10	1	1	59	0.05	60.88						
test_set	6	9	3	4	2	3	3	23	7	15	4	5	59	0.05	60.93						
data_extract	8	8	10	14	5	9	5	7	5	19	2	2	59	0.05	60.98						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
comput_technolog	6	7	6	10	4	5	5	9	7	27	1	1	59	0	0	59	0	0	61.03	61.03	
wordRepresent	3	6	3	18	7	12	6	17	3	3	2	3	59	0	0	59	0	0	61.08	61.08	
tabl_perform	4	5	5	7	2	2	7	9	7	32	4	4	59	0	0	59	0	0	61.13	61.13	
neg_exampl	2	3	5	10	2	2	4	13	4	30	1	1	59	0	0	59	0	0	61.18	61.18	
featur_word	2	2	8	19	7	9	8	21	6	6	1	2	59	0	0	59	0	0	61.23	61.23	
rule_mine	2	2	4	4	7	20	2	14	6	15	1	4	59	0	0	59	0	0	61.29	61.29	
test_test	2	2	3	5	2	2	6	13	4	33	3	4	59	0	0	59	0	0	61.34	61.34	
us_porter	5	31	4	5	4	5	3	5	4	6	5	6	58	0	0	58	0	0	61.39	61.39	
content_document	13	15	11	13	11	21	5	5	3	3	1	1	58	0	0	58	0	0	61.44	61.44	
word_gener	8	15	9	10	9	9	7	16	5	7	1	1	58	0	0	58	0	0	61.49	61.49	
document_model	6	7	3	3	1	9	8	28	3	9	2	2	58	0	0	58	0	0	61.54	61.54	
gener_word	3	7	6	6	6	6	9	24	7	12	2	3	58	0	0	58	0	0	61.59	61.59	
featur_valu	4	6	8	24	2	3	6	20	3	3	1	2	58	0	0	58	0	0	61.64	61.64	
highest_accuraci	2	6	9	19	2	2	3	5	27	1	1	58	0	0	58	0	0	61.69	61.69		
mine_method	3	6	8	12	7	17	6	8	4	10	2	5	58	0	0	58	0	0	61.74	61.74	
develop_model	3	4	6	8	5	7	4	7	4	24	4	8	58	0	0	58	0	0	61.79	61.79	
lexic_databas	4	4	9	17	5	11	7	18	4	7	1	1	58	0	0	58	0	0	61.84	61.84	
regress_model	3	4	4	7	3	4	4	25	4	14	2	4	58	0	0	58	0	0	61.89	61.89	
tweet_user	1	1	2	5	1	3	4	9	5	25	1	15	58	0	0	58	0	0	61.94	61.94	
class_class	6	17	8	10	5	5	6	10	6	11	3	4	57	0	0	57	0	0	61.99	61.99	
classif_cluster	12	13	10	16	6	7	8	16	3	4	1	1	57	0	0	57	0	0	62.04	62.04	
featur_text	6	13	6	9	10	12	4	5	8	14	4	4	57	0	0	57	0	0	62.09	62.09	
stem_stop	10	12	8	12	4	4	7	12	6	16	1	1	57	0	0	57	0	0	62.14	62.14	
process_system	6	11	7	12	8	9	7	8	6	15	2	2	57	0	0	57	0	0	62.19	62.19	
process_extract	8	10	11	15	10	14	4	6	8	8	3	4	57	0	0	57	0	0	62.24	62.24	

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
develop_system	5	9	6	10	5	8	5	13	6	14	3	3	57	0.05	62.29						
implement_us	7	9	6	10	4	5	8	10	12	19	2	4	57	0.05	62.34						
request_enhanc	9	9	17	18	11	11	11	11	7	7	1	1	57	0.05	62.39						
dataset_contain	6	8	6	7	9	12	7	17	10	11	2	2	57	0.05	62.44						
extract_word	8	8	10	16	4	5	6	11	11	15	1	2	57	0.05	62.48						
model_featur	5	6	6	6	2	2	6	21	8	19	1	3	57	0.05	62.53						
comput_vision	3	4	4	12	1	1	9	22	5	15	2	3	57	0.05	62.58						
us_classifi	2	4	6	9	2	2	4	6	11	35	1	1	57	0.05	62.63						
train_exampl	12	21	6	10	3	3	5	10	5	11	1	1	56	0.05	62.68						
evalu_system	11	16	3	3	3	4	4	11	6	7	2	15	56	0.05	62.73						
word_contain	9	15	5	8	3	4	9	21	6	6	2	2	56	0.05	62.78						
method_appli	13	14	9	12	1	1	10	12	7	16	1	1	56	0.05	62.83						
extract_method	6	13	3	4	8	11	6	7	6	20	1	1	56	0.05	62.88						
token_token	5	12	8	14	5	8	6	9	7	10	3	3	56	0.05	62.93						
repres_text	7	11	13	16	2	3	4	7	7	17	2	2	56	0.05	62.97						
retriev_text	10	11	11	12	13	14	10	15	3	3	1	1	56	0.05	63.02						
discuss_stat	9	9	17	17	11	11	11	11	7	7	1	1	56	0.05	63.07						
enhanc_download	9	9	17	17	11	11	11	11	7	7	1	1	56	0.05	63.12						
public_stat	9	9	17	17	11	11	11	11	7	7	1	1	56	0.05	63.17						
view_public	9	9	17	17	11	11	11	11	7	7	1	1	56	0.05	63.22						
word_dictionari	5	7	7	16	2	4	6	18	4	7	3	4	56	0.05	63.27						
cluster_number	5	5	5	11	3	5	4	8	4	26	1	1	56	0.05	63.31						
word_repres	3	4	15	21	11	13	7	7	4	4	5	7	56	0.05	63.36						
correl_coeffici	2	3	4	8	2	6	5	31	4	6	1	2	56	0.05	63.41						
statist_machin	2	21	6	7	7	11	3	3	12	1	1	55	0.05	63.46							

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
porter_algorithm	8	15	9	11	7	7	6	9	5	11	2	2	55	0.05	63.51						
twitter_data	1	12	5	8	3	10	3	5	9	18	2	2	55	0.05	63.55						
mine_algorithm	8	10	5	14	6	11	3	7	5	12	1	1	55	0.05	63.60						
extract_document	8	9	11	21	6	9	6	10	4	4	2	2	55	0.05	63.65						
sentenc_text	6	9	8	15	4	6	6	14	9	9	2	2	55	0.05	63.70						
semant_relationship	6	8	8	28	2	10	5	5	2	2	2	2	55	0.05	63.75						
techniqu_text	7	7	6	6	11	14	5	5	6	21	2	2	55	0.05	63.79						
make_process	5	6	2	2	7	12	5	13	7	21	1	1	55	0.05	63.84						
human_resourc	1	1	1	1	2	8	2	15	4	28	2	2	55	0.05	63.89						
qualiti_cluster	5	18	3	5	5	12	3	3	2	4	2	12	54	0.05	63.94						
relev_featur	9	16	3	9	4	11	6	6	7	8	2	4	54	0.05	63.98						
manual_label	2	15	5	10	4	6	7	21	1	1	1	1	54	0.05	64.03						
represent_model	5	14	3	14	7	7	2	4	5	13	2	2	54	0.05	64.08						
word_consid	11	14	7	10	4	4	9	18	4	5	2	3	54	0.05	64.12						
publicli_avail	4	12	5	9	3	4	8	15	5	11	1	3	54	0.05	64.17						
automat_index	9	11	5	35	3	3	3	3	1	1	1	1	54	0.05	64.22						
springer_verlag	8	11	10	15	6	10	1	1	8	12	3	5	54	0.05	64.26						
distribut_word	6	10	5	13	4	4	6	11	5	6	4	10	54	0.05	64.31						
keyword_text	6	10	11	15	10	10	11	13	5	5	1	1	54	0.05	64.36						
word_similar	7	10	8	19	5	11	8	10	2	2	2	2	54	0.05	64.40						
root_stem	7	7	6	20	7	20	3	4	2	2	1	1	54	0.05	64.45						
measur_accuraci	5	6	7	14	3	4	6	14	4	14	2	2	54	0.05	64.50						
cluster_approach	9	21	5	8	2	9	5	5	4	4	2	6	53	0.05	64.54						
classif_approach	7	15	4	4	6	7	6	17	6	9	1	1	53	0.05	64.59						
interest_includ	10	14	9	20	3	7	5	7	2	4	1	1	53	0.05	64.64						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
inform_document	9	13	11	15	9	10	7	10	3	3	2	2	53	0.05	64.68						
mine_inform	11	12	8	12	10	14	7	7	5	6	2	2	53	0.05	64.73						
document_index	9	11	8	15	4	6	6	12	4	6	2	3	53	0.05	64.77						
featur_document	7	11	8	12	6	9	4	6	8	14	1	1	53	0.05	64.82						
model_repres	8	11	9	12	5	8	6	8	6	13	1	1	53	0.05	64.87						
neg_word	2	11	4	8	4	15	6	14	2	4	1	1	53	0.05	64.91						
sequenc_word	7	9	7	11	9	10	5	5	14	16	2	2	53	0.05	64.96						
perform_model	4	7	4	6	2	2	7	23	7	12	1	3	53	0.05	65.00						
sens_disambigu	5	6	3	9	10	15	7	8	6	11	2	4	53	0.05	65.05						
data_base	4	4	7	14	8	11	7	11	10	11	2	2	53	0.05	65.10						
model_select	2	4	4	8	2	2	6	16	4	8	2	15	53	0.05	65.14						
search_space	3	4	7	14	5	6	4	9	5	17	1	3	53	0.05	65.19						
tweet_tweet	2	3	4	24	3	3	4	15	3	4	1	4	53	0.05	65.23						
predict_stock	1	1	1	1	2	2	1	2	3	46	1	1	53	0.05	65.28						
classifi_base	12	14	7	7	4	7	5	10	11	13	1	1	52	0.05	65.33						
select_text	11	14	8	10	7	13	4	5	8	9	1	1	52	0.05	65.37						
bay_algorithm	9	13	4	5	5	9	3	4	7	20	1	1	52	0.05	65.42						
represent_text	8	13	6	7	11	14	6	12	4	5	1	1	52	0.05	65.46						
resourc_evalu	9	13	7	15	5	6	4	5	6	12	1	1	52	0.05	65.51						
dimension_space	9	11	7	8	6	6	7	15	5	11	1	1	52	0.05	65.55						
main_idea	5	11	7	7	6	6	7	10	9	15	2	3	52	0.05	65.60						
tree_structur	7	11	5	7	4	5	2	18	3	10	1	1	52	0.05	65.64						
algorithm_cluster	6	9	9	14	11	18	4	4	4	4	2	3	52	0.05	65.69						
word_stop	9	9	9	13	5	7	8	13	4	4	3	6	52	0.05	65.73						
measur_measur	6	8	6	8	9	11	6	6	4	18	1	1	52	0.05	65.78						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
extract_sentenc	5	7	6	24	4	6	5	8	3	5	2	2	52	0.05	65.82						
problem_solv	6	7	5	8	6	6	4	10	4	20	1	1	52	0.05	65.87						
word_corpu	5	6	8	11	2	2	11	29	3	3	1	1	52	0.05	65.91						
word_found	4	5	11	13	10	10	11	16	5	7	1	1	52	0.05	65.96						
base_search	3	3	3	4	5	6	1	5	3	5	1	29	52	0.05	66.00						
data_store	2	2	11	18	5	12	7	10	5	8	1	2	52	0.05	66.05						
neg_neutral	1	2	6	6	3	9	1	2	6	32	1	1	52	0.05	66.09						
issu_march	1	1	1	2	3	23	2	12	4	12	2	2	52	0.05	66.14						
search_algorithm	1	1	7	16	3	6	4	5	3	23	1	1	52	0.05	66.18						
recal_valu	4	10	6	9	1	4	7	23	3	3	2	2	51	0.04	66.23						
techniqu_base	8	9	4	4	8	14	5	8	5	11	2	5	51	0.04	66.27						
data_preprocess	3	6	3	6	7	7	5	13	9	17	1	2	51	0.04	66.32						
method_perform	6	6	7	7	7	9	5	5	8	23	1	1	51	0.04	66.36						
obtain_us	6	6	5	5	3	4	5	15	10	18	1	3	51	0.04	66.41						
statist_model	6	6	10	17	3	4	5	12	7	9	2	3	51	0.04	66.45						
accuraci_rate	2	2	3	4	1	15	1	16	5	13	1	1	51	0.04	66.49						
textual_inform	2	2	8	25	4	9	4	5	6	9	1	1	51	0.04	66.54						
cluster_data	6	14	8	10	6	11	7	7	4	5	2	3	50	0.04	66.58						
test_collect	10	12	1	1	2	7	3	25	2	2	2	3	50	0.04	66.62						
semant_inform	7	11	10	22	6	7	4	4	3	4	2	2	50	0.04	66.67						
assist_professor	8	10	11	22	5	5	6	6	4	5	2	2	50	0.04	66.71						
weight_word	6	10	7	10	4	8	10	11	4	9	2	2	50	0.04	66.75						
bayesian_classifi	5	6	7	9	4	8	1	2	7	21	2	4	50	0.04	66.80						
given_text	4	6	10	13	4	6	8	22	2	1	1	50	0.04	66.84							
word_filter	4	4	3	3	4	4	6	14	5	23	1	2	50	0.04	66.89						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
content_word	5	15	7	12	6	7	4	11	2	2	2	2	49	49	0.04	0.04	66.93	66.93			
execut_time	3	13	2	2	1	16	3	5	4	12	1	1	49	49	0.04	0.04	66.97	66.97			
highest_score	8	11	6	7	2	4	5	16	6	9	2	2	49	49	0.04	0.04	67.01	67.01			
repres_number	5	9	8	9	5	8	6	15	5	6	1	2	49	49	0.04	0.04	67.06	67.06			
analyz_data	7	7	4	8	4	8	1	1	4	23	1	2	49	49	0.04	0.04	67.10	67.10			
model_gener	5	6	8	10	3	3	10	15	7	11	2	4	49	49	0.04	0.04	67.14	67.14			
repres_word	4	6	11	15	6	8	8	10	4	4	5	6	49	49	0.04	0.04	67.18	67.18			
languag_word	4	5	6	18	5	7	8	10	6	6	3	3	49	49	0.04	0.04	67.23	67.23			
topic_word	2	3	7	4	9	6	6	5	15	3	9	9	49	49	0.04	0.04	67.27	67.27			
represent_word	1	2	7	23	6	7	7	10	2	3	4	4	49	49	0.04	0.04	67.31	67.31			
tweet_us	1	1	5	10	3	5	4	18	5	14	1	1	49	49	0.04	0.04	67.35	67.35			
base_algorithm	6	13	6	9	5	7	7	9	7	9	1	1	48	48	0.04	0.04	67.39	67.39			
model_paramet	6	12	5	14	2	2	6	10	3	9	1	1	48	48	0.04	0.04	67.44	67.44			
document_sentenc	5	11	7	14	3	8	5	12	1	1	2	2	48	48	0.04	0.04	67.48	67.48			
content_text	6	7	8	10	8	10	4	7	10	12	2	2	48	48	0.04	0.04	67.52	67.52			
method_automat	5	7	7	11	6	6	4	4	8	16	4	4	48	48	0.04	0.04	67.56	67.56			
user_user	6	7	3	5	3	3	7	15	4	16	1	2	48	48	0.04	0.04	67.60	67.60			
further_process	5	6	8	10	7	8	8	9	6	13	1	2	48	48	0.04	0.04	67.64	67.64			
system_implement	6	6	7	9	7	9	5	20	3	3	1	1	48	48	0.04	0.04	67.69	67.69			
process_perform	4	5	7	8	5	5	7	16	6	13	1	1	48	48	0.04	0.04	67.73	67.73			
springer_berlin	3	4	6	11	4	4	7	8	5	17	2	4	48	48	0.04	0.04	67.77	67.77			
accuraci_us	3	3	6	7	6	7	3	5	8	25	1	1	48	48	0.04	0.04	67.81	67.81			
technolog_comput	3	3	5	11	5	14	3	15	2	4	1	1	48	48	0.04	0.04	67.85	67.85			
volum_page	1	1	2	2	5	10	6	23	4	10	2	2	48	48	0.04	0.04	67.89	67.89			
featur_gener	5	17	3	8	1	1	6	15	4	4	2	2	47	47	0.04	0.04	67.94	67.94			

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
perform_measur	9	17	5	6	3	4	8	12	2	4	3	4	47	47	0.04	67.98					
base_analysi	9	15	5	9	4	4	6	9	5	8	2	2	47	47	0.04	68.02					
amount_inform	8	14	7	9	5	10	3	4	4	8	2	2	47	47	0.04	68.06					
document_level	5	14	4	5	4	9	5	11	4	5	2	3	47	47	0.04	68.10					
input_document	8	12	10	16	5	7	5	5	3	6	1	1	47	47	0.04	68.14					
sentenc_base	3	12	7	10	5	9	5	11	3	3	2	2	47	47	0.04	68.18					
mine_appliC	9	11	6	12	10	10	6	7	5	5	2	2	47	47	0.04	68.22					
valu_term	6	11	3	7	4	5	5	7	6	16	1	1	47	47	0.04	68.26					
word_cloud	4	11	2	7	2	11	1	8	4	9	1	1	47	47	0.04	68.30					
root_form	8	10	11	13	4	4	10	14	2	2	4	4	47	47	0.04	68.34					
improv_qualiti	4	8	6	7	2	3	2	3	8	24	2	2	47	47	0.04	68.38					
societi_inform	8	8	11	13	9	9	11	11	4	4	2	2	47	47	0.04	68.43					
us_algorithm	5	8	8	12	7	7	8	8	9	11	1	1	47	47	0.04	68.47					
model_develop	7	7	4	6	2	2	5	6	6	23	3	3	47	47	0.04	68.51					
previou_studi	3	6	6	8	3	5	6	9	5	18	1	1	47	47	0.04	68.55					
posit_word	2	5	5	14	10	15	7	8	4	4	1	1	47	47	0.04	68.59					
text_contain	3	5	4	7	1	2	8	16	9	15	2	2	47	47	0.04	68.63					
detect_system	2	4	3	7	3	3	3	5	7	15	3	13	47	47	0.04	68.67					
charact_recognit	3	3	1	3	1	4	2	5	3	28	2	4	47	47	0.04	68.71					
model_test	1	2	3	3	6	8	5	7	6	25	2	2	47	47	0.04	68.75					
frequent_itemset	1	1	1	1	2	2	1	4	1	5	4	34	47	47	0.04	68.79					
measur_perform	6	11	8	11	1	1	8	14	4	7	1	2	46	46	0.04	68.83					
document_calcuL	7	10	7	9	9	11	8	13	2	2	1	1	46	46	0.04	68.87					
gibb_sampl	3	8	4	10	2	4	6	7	2	14	2	3	46	46	0.04	68.91					
solut_problem	4	8	5	9	6	6	8	4	13	2	2	46	46	0.04	68.95						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
avail_onlin	5	6	4	7	4	5	5	14	6	13	1	1	46	0	0	46	0	0	68.99	68.99	
weight_assign	4	6	4	6	3	8	3	8	5	17	1	1	46	0	0	46	0	0	69.03	69.03	
model_topic	3	5	3	12	5	5	5	7	3	8	4	9	46	0	0	46	0	0	69.07	69.07	
measur_text	2	2	6	9	8	9	7	16	5	7	3	3	46	0	0	46	0	0	69.11	69.11	
help_user	10	15	8	8	4	5	5	7	5	8	2	2	45	0	0	45	0	0	69.15	69.15	
cluster_perform	8	13	4	8	4	5	6	8	5	6	3	5	45	0	0	45	0	0	69.19	69.19	
rank_document	4	10	3	3	4	4	7	26	1	1	1	1	45	0	0	45	0	0	69.23	69.23	
train_sampl	4	10	3	5	2	3	4	9	5	16	2	2	45	0	0	45	0	0	69.27	69.27	
perform_experi	7	9	5	7	4	5	2	2	8	18	4	4	45	0	0	45	0	0	69.31	69.31	
previou_step	7	9	3	7	4	9	4	9	6	10	1	1	45	0	0	45	0	0	69.35	69.35	
step_process	8	8	10	10	7	9	4	4	10	13	1	1	45	0	0	45	0	0	69.39	69.39	
time_complex	6	8	5	12	4	13	3	3	3	6	1	3	45	0	0	45	0	0	69.42	69.42	
number_text	5	7	7	18	3	3	2	2	4	14	1	1	45	0	0	45	0	0	69.46	69.46	
us_techniqu	6	6	4	4	7	8	3	4	5	18	3	5	45	0	0	45	0	0	69.50	69.50	
find_similar	5	6	11	6	7	10	17	1	1	2	4	45	0	0	45	0	0	69.54	69.54		
correctli_classifi	4	4	6	15	4	5	5	6	5	11	3	4	45	0	0	45	0	0	69.58	69.58	
word_process	4	4	5	6	7	8	8	11	8	15	1	1	45	0	0	45	0	0	69.62	69.62	
languag_arab	2	3	7	9	2	5	5	10	6	16	2	2	45	0	0	45	0	0	69.66	69.66	
type_data	3	3	5	5	4	9	4	4	5	23	1	1	45	0	0	45	0	0	69.70	69.70	
data_avail	2	2	4	8	7	16	5	5	6	12	1	2	45	0	0	45	0	0	69.74	69.74	
mine_data	2	2	7	9	6	9	5	7	9	15	2	3	45	0	0	45	0	0	69.78	69.78	
number_user	1	1	2	2	1	1	5	35	2	4	2	2	45	0	0	45	0	0	69.82	69.82	
extract_system	4	14	5	6	4	9	6	9	3	5	1	1	44	0	0	44	0	0	69.85	69.85	
dimension_vector	6	13	7	13	3	3	4	11	1	1	2	3	44	0	0	44	0	0	69.89	69.89	
learn_text	9	12	9	11	4	5	5	7	6	8	1	1	44	0	0	44	0	0	69.93	69.93	

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
techniqu_appli	8	11	4	4	6	7	5	5	6	14	1	3	44	1	3	44	0.04	0.04	69.97		
semant_mean	4	10	9	11	3	4	1	3	4	5	3	11	44	0.04	0.04	0.04	0.04	0.04	70.01		
similar_valu	5	10	8	12	2	2	8	9	5	6	2	5	44	0.04	0.04	0.04	0.04	0.04	70.04		
charact_word	5	9	5	11	3	5	8	15	3	3	1	1	44	0.04	0.04	0.04	0.04	0.04	70.08		
cluster_centroid	5	9	2	4	1	1	1	1	5	28	1	1	44	0.04	0.04	0.04	0.04	0.04	70.12		
function_word	6	7	4	5	4	4	5	7	4	19	2	2	44	0.04	0.04	0.04	0.04	0.04	70.16		
user_search	4	7	6	24	4	4	3	4	4	4	1	1	44	0.04	0.04	0.04	0.04	0.04	70.20		
word_number	6	7	10	10	6	6	7	8	11	11	2	2	44	0.04	0.04	0.04	0.04	0.04	70.24		
order_reduc	6	6	9	13	8	9	6	7	4	7	2	2	44	0.04	0.04	0.04	0.04	0.04	70.27		
degree_comput	3	5	7	17	3	6	2	3	5	7	2	6	44	0.04	0.04	0.04	0.04	0.04	70.31		
dimension_data	4	5	7	11	9	12	3	8	4	7	1	1	44	0.04	0.04	0.04	0.04	0.04	70.35		
exist_method	4	5	6	10	4	5	3	14	4	6	4	4	44	0.04	0.04	0.04	0.04	0.04	70.39		
extract_data	4	5	7	9	7	10	7	11	6	8	1	1	44	0.04	0.04	0.04	0.04	0.04	70.43		
vector_word	4	5	3	4	4	4	3	19	2	2	5	10	44	0.04	0.04	0.04	0.04	0.04	70.46		
knowledg_engin	4	4	6	7	7	7	9	17	6	8	1	1	44	0.04	0.04	0.04	0.04	0.04	70.50		
scienc_depart	4	4	6	10	5	12	3	4	3	13	1	1	44	0.04	0.04	0.04	0.04	0.04	70.54		
string_match	3	4	2	3	4	28	3	3	2	3	1	3	44	0.04	0.04	0.04	0.04	0.04	70.58		
main_problem	3	3	9	9	6	11	3	5	2	14	2	2	44	0.04	0.04	0.04	0.04	0.04	70.62		
model_classifi	3	3	4	6	2	2	5	10	7	21	2	2	44	0.04	0.04	0.04	0.04	0.04	70.66		
measur_us	2	2	6	10	2	2	8	17	7	11	2	2	44	0.04	0.04	0.04	0.04	0.04	70.69		
origin_text	2	2	7	10	6	11	6	15	4	4	2	2	44	0.04	0.04	0.04	0.04	0.04	70.73		
statist_inform	4	20	2	5	3	3	4	8	3	6	1	1	43	0.04	0.04	0.04	0.04	0.04	70.77		
measur_evalu	6	9	2	2	7	12	6	7	3	6	4	7	43	0.04	0.04	0.04	0.04	0.04	70.81		
find_relev	5	6	8	15	7	10	6	6	2	4	1	2	43	0.04	0.04	0.04	0.04	0.04	70.84		
arab_corpu	3	5	4	4	5	10	3	8	3	15	1	1	43	0.04	0.04	0.04	0.04	0.04	70.88		

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
system_architectur	3	5	4	7	7	10	5	7	5	10	3	4	43	0.04	70.92						
assign_weight	4	4	3	4	7	11	7	13	8	10	1	1	43	0.04	70.96						
mean_text	4	4	9	12	4	4	3	5	8	16	2	2	43	0.04	70.99						
addit_featur	2	3	2	2	1	1	4	22	7	9	2	6	43	0.04	71.03						
topic_base	3	3	7	28	2	2	3	3	5	2	2	43	0.04	71.07							
weight_averag	3	3	6	19	5	6	3	4	4	10	1	1	43	0.04	71.11						
word_token	3	3	4	11	6	8	11	16	2	2	3	3	43	0.04	71.14						
group_group	2	2	7	8	2	6	6	18	4	8	1	1	43	0.04	71.18						
process_model	1	1	4	5	2	4	2	25	3	7	1	1	43	0.04	71.22						
score_score	1	1	2	3	3	3	5	19	5	9	3	8	43	0.04	71.26						
preprocess_text	5	13	3	7	3	3	4	8	8	3	3	3	42	0.04	71.29						
algorithm_document	7	12	5	5	8	13	5	5	4	6	1	1	42	0.04	71.33						
classifi_perform	9	12	5	6	4	5	5	11	5	6	2	2	42	0.04	71.36						
word_semant	9	12	7	12	5	6	4	10	1	1	1	1	42	0.04	71.40						
analysi_document	6	11	3	7	7	12	7	9	2	2	1	1	42	0.04	71.44						
us_term	7	11	9	9	6	6	5	7	6	8	1	1	42	0.04	71.47						
combin_word	8	8	13	5	7	6	9	3	4	1	1	42	0.04	71.51							
network_base	7	7	6	8	4	7	4	16	2	3	1	1	42	0.04	71.55						
time_term	5	6	8	11	11	14	5	7	2	2	2	2	42	0.04	71.58						
gener_topic	4	5	4	11	1	1	7	15	3	4	2	6	42	0.04	71.62						
improv_effici	4	5	7	10	8	10	6	6	7	10	1	1	42	0.04	71.66						
data_contain	3	3	10	13	4	4	7	8	8	13	1	1	42	0.04	71.69						
free_text	3	3	5	15	3	6	6	11	2	4	2	3	42	0.04	71.73						
linear_combin	1	1	5	7	2	6	4	23	3	4	1	1	42	0.04	71.77						
system_extract	3	14	5	5	7	3	3	6	8	2	4	41	0.04	71.80							

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
classifi_test	6	12	5	9	1	1	3	4	8	12	1	3	41	0.04	0.04	71.84					
tech_niqu	5	11	4	5	1	8	7	10	4	5	2	2	41	0.04	0.04	71.87					
us_train	10	10	4	6	4	4	7	7	9	12	2	2	41	0.04	0.04	71.91					
word_common	9	10	5	5	5	9	12	8	8	1	1	41	0.04	0.04	71.94						
count_number	6	9	9	10	6	6	3	5	7	9	2	2	41	0.04	0.04	71.98					
evalu_model	3	9	3	3	1	1	4	15	4	9	2	4	41	0.04	0.04	72.01					
experi_perform	4	9	4	6	6	9	3	3	7	11	2	3	41	0.04	0.04	72.05					
classif_base	5	8	7	8	4	4	5	5	8	12	3	4	41	0.04	0.04	72.09					
featur_train	5	8	5	8	6	6	4	10	5	7	2	2	41	0.04	0.04	72.12					
mine_us	5	8	6	9	8	14	4	5	3	3	2	2	41	0.04	0.04	72.16					
term_text	7	8	5	8	8	10	4	4	5	8	2	3	41	0.04	0.04	72.19					
model_method	7	7	5	7	2	3	7	7	8	11	2	6	41	0.04	0.04	72.23					
provid_inform	5	7	3	7	7	9	4	10	6	7	1	1	41	0.04	0.04	72.26					
start_point	4	7	8	8	5	12	2	2	4	11	1	1	41	0.04	0.04	72.30					
process_method	2	6	6	7	4	4	4	8	11	15	1	1	41	0.04	0.04	72.34					
textual_document	4	6	5	14	4	5	4	13	1	1	2	2	41	0.04	0.04	72.37					
applic_text	4	5	8	9	5	5	9	11	5	9	2	2	41	0.04	0.04	72.41					
corpu_document	5	5	6	6	4	8	10	15	3	4	2	3	41	0.04	0.04	72.44					
gener_model	5	5	5	9	1	2	9	18	3	5	2	2	41	0.04	0.04	72.48					
group_similar	5	5	10	12	5	5	4	8	6	9	2	2	41	0.04	0.04	72.51					
lexicon_base	2	5	3	6	3	7	2	2	6	15	1	6	41	0.04	0.04	72.55					
valu_document	5	5	5	8	3	4	6	11	5	10	2	3	41	0.04	0.04	72.58					
data_test	3	3	4	7	4	5	8	12	7	13	1	1	41	0.04	0.04	72.62					
word_select	3	3	7	12	6	8	6	10	6	6	2	2	41	0.04	0.04	72.66					
base_topic	1	1	3	16	3	4	7	8	4	5	2	7	41	0.04	0.04	72.69					

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
human_factor	1	1	3	4	3	24	1	1	3	7	2	4	41	41	0.04	0.04	72.73				
predefin_categori	8	22	5	8	1	1	2	4	4	4	1	1	40	40	0.03	0.03	72.76				
classifi_categori	5	17	6	7	4	4	3	3	7	7	2	2	40	40	0.03	0.03	72.80				
document_total	12	15	5	6	5	7	1	1	8	10	1	1	40	40	0.03	0.03	72.83				
sentenc_length	3	12	6	8	3	7	3	5	6	6	1	2	40	40	0.03	0.03	72.87				
word_approach	11	12	2	3	7	11	3	5	3	6	2	3	40	40	0.03	0.03	72.90				
cluster_qualiti	5	11	3	3	5	16	2	5	3	4	1	1	40	40	0.03	0.03	72.94				
collect_text	7	10	4	4	8	9	5	7	7	8	1	2	40	40	0.03	0.03	72.97				
maximum_likelihood	7	10	4	9	3	3	6	13	3	3	2	2	40	40	0.03	0.03	73.00				
measur_valu	5	9	4	4	1	1	6	11	5	13	1	2	40	40	0.03	0.03	73.04				
us_support	6	9	9	12	3	4	3	4	8	8	3	3	40	40	0.03	0.03	73.07				
word_includ	9	9	8	8	3	3	6	15	3	4	1	1	40	40	0.03	0.03	73.11				
document_consid	8	8	9	15	8	8	4	5	2	2	2	2	40	40	0.03	0.03	73.14				
empir_studi	7	8	5	5	4	4	6	10	6	12	1	1	40	40	0.03	0.03	73.18				
system_test	5	7	9	2	3	7	10	4	10	4	10	1	1	40	40	0.03	0.03	73.21			
comput_similar	5	6	5	11	6	14	2	3	1	1	2	5	40	40	0.03	0.03	73.25				
corpu_text	5	6	4	6	3	5	5	9	7	13	1	1	40	40	0.03	0.03	73.28				
morgan_kaufmann	6	6	9	12	6	8	8	5	5	5	1	1	40	40	0.03	0.03	73.32				
stem_us	6	6	9	9	7	8	6	9	3	5	2	3	40	40	0.03	0.03	73.35				
averag_number	3	5	5	9	1	1	5	19	4	4	1	2	40	40	0.03	0.03	73.39				
frequenc_count	4	5	4	6	4	10	7	16	2	2	1	1	40	40	0.03	0.03	73.42				
includ_text	4	5	8	9	6	8	6	9	7	7	1	2	40	40	0.03	0.03	73.46				
techniqu_extract	2	5	5	10	6	6	7	10	3	7	1	2	40	40	0.03	0.03	73.49				
develop_method	3	4	6	6	5	5	7	6	17	1	1	40	40	0.03	0.03	73.53					
given_word	3	4	7	13	8	8	7	7	5	6	2	2	40	40	0.03	0.03	73.56				

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
process_reduc	4	4	10	14	6	6	4	4	9	10	2	2	40	0	0	0	0	0	73.59		
train_us	4	4	5	6	1	2	8	11	5	14	2	3	40	0	0	0	0	0	73.63		
us_simpl	4	4	5	4	5	5	13	6	12	1	1	40	0	0	0	0	0	0	73.66		
word_context	3	4	6	11	3	8	7	12	4	4	1	1	40	0	0	0	0	0	73.70		
wordnet_lexic	2	4	6	9	4	8	6	13	3	5	1	1	40	0	0	0	0	0	73.73		
emot_category	1	3	1	8	2	4	1	5	4	17	2	3	40	0	0	0	0	0	73.77		
represent_us	2	3	4	8	4	6	3	7	3	13	2	3	40	0	0	0	0	0	73.80		
time_word	3	3	8	10	6	7	8	17	2	2	1	1	40	0	0	0	0	0	73.84		
word_exampl	3	3	7	9	4	4	9	14	7	8	2	2	40	0	0	0	0	0	73.87		
issu_issn	2	2	4	17	2	6	3	12	2	2	1	1	40	0	0	0	0	0	73.91		
posit_fals	1	1	8	12	3	6	4	6	3	3	3	12	40	0	0	0	0	0	73.94		
user_tweet	1	1	1	1	1	1	1	3	6	12	2	2	40	0	0	0	0	0	73.98		
weight_approach	8	18	4	4	6	8	3	4	4	4	1	1	39	0	0	0	0	0	74.01		
index_document	8	15	7	9	3	3	7	9	1	1	2	2	39	0	0	0	0	0	74.04		
perform_classifi	8	13	7	7	2	3	5	8	5	6	1	2	39	0	0	0	0	0	74.08		
address_problem	7	12	5	5	2	7	3	4	5	9	2	2	39	0	0	0	0	0	74.11		
document_rank	7	10	4	11	2	3	6	13	1	1	1	1	39	0	0	0	0	0	74.15		
pattern_analysi	6	10	4	4	6	9	3	3	7	12	1	1	39	0	0	0	0	0	74.18		
us_vector	7	9	3	3	3	5	8	9	4	11	2	2	39	0	0	0	0	0	74.21		
princip_compon	3	8	4	6	2	2	1	8	3	14	1	1	39	0	0	0	0	0	74.25		
term_number	8	8	6	7	5	6	4	7	4	10	1	1	39	0	0	0	0	0	74.28		
mine_task	7	7	7	10	7	12	4	4	5	1	1	39	0	0	0	0	0	74.32			
perform_cluster	5	7	4	7	3	6	4	5	6	11	1	3	39	0	0	0	0	0	74.35		
take_advantag	5	7	6	9	3	3	6	9	7	7	4	4	39	0	0	0	0	0	74.38		
algorithm_stem	6	6	5	5	4	6	5	6	6	12	3	4	39	0	0	0	0	0	74.42		

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
white_space	5	6	3	3	7	7	4	4	5	17	2	2	39	0.03	74.45						
featur_us	4	5	2	2	5	11	5	9	5	7	3	5	39	0.03	74.48						
graph_node	3	4	1	1	4	16	3	9	2	8	1	1	39	0.03	74.52						
weight_calcul	4	4	4	4	1	1	5	7	2	22	1	1	39	0.03	74.55						
spam_detect	1	2	2	30	1	1	2	4	1	1	1	1	39	0.03	74.59						
store_databas	2	2	5	8	5	7	6	10	7	10	1	2	39	0.03	74.62						
mixturm_model	3	20	4	5	2	6	2	3	1	2	1	2	38	0.03	74.65						
method_evalu	8	17	2	2	3	5	7	8	3	4	2	2	38	0.03	74.69						
inform_avail	8	16	6	7	5	9	4	4	1	1	1	1	38	0.03	74.72						
precis_valu	4	11	2	5	1	1	5	17	2	2	1	2	38	0.03	74.75						
suffix_strip	8	11	7	10	4	4	4	4	4	7	2	2	38	0.03	74.79						
sourc_inform	4	10	7	7	2	4	6	9	5	6	2	2	38	0.03	74.82						
featur_repres	8	8	5	6	2	2	4	6	6	12	4	4	38	0.03	74.85						
classifi_featur	5	7	4	8	5	6	3	8	6	8	1	1	38	0.03	74.88						
process_word	4	7	8	9	6	8	4	6	4	6	2	2	38	0.03	74.92						
algorithm_develop	6	6	4	4	4	9	12	7	10	2	2	38	0.03	74.95							
main_reason	5	6	2	2	4	5	6	19	5	5	1	1	38	0.03	74.98						
base_stem	1	5	3	8	7	9	7	11	3	4	1	1	38	0.03	75.02						
comput_approach	5	5	7	10	3	5	5	8	3	9	1	1	38	0.03	75.05						
given_queri	5	5	8	2	7	4	10	2	4	1	4	38	0.03	75.08							
perform_algorithm	2	5	5	9	4	5	7	7	3	11	1	1	38	0.03	75.12						
stopword_remov	2	5	7	8	8	9	6	12	3	3	1	1	38	0.03	75.15						
inform_word	4	4	4	10	5	5	7	14	2	3	2	2	38	0.03	75.18						
model_word	3	3	6	11	3	3	6	17	1	1	2	3	38	0.03	75.21						
optic_charact	2	2	1	3	1	4	2	5	3	20	2	4	38	0.03	75.25						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
scienc_appli	1	1	3	4	2	8	4	5	4	18	2	2	38	0.03	75.28						
learn_object	2	21	1	2	2	2	2	2	3	9	1	1	37	0.03	75.31						
automat_evalu	2	12	1	1	1	5	9	4	10	2	4	37	0.03	75.34							
vector_featur	8	11	5	7	5	7	4	9	2	2	1	1	37	0.03	75.38						
model_compar	6	10	2	2	1	1	5	11	6	9	3	4	37	0.03	75.41						
term_select	5	9	2	4	3	3	5	6	6	11	1	4	37	0.03	75.44						
us_gram	4	8	2	3	4	5	3	4	6	13	3	4	37	0.03	75.47						
user_defin	6	8	3	3	7	12	5	5	3	6	2	3	37	0.03	75.51						
base_user	6	7	8	10	4	4	6	7	4	7	1	2	37	0.03	75.54						
index_process	3	7	2	14	2	3	4	10	1	1	1	2	37	0.03	75.57						
similar_mean	5	7	2	4	5	6	10	15	4	4	1	1	37	0.03	75.60						
gram_base	2	6	3	4	2	5	5	12	4	8	2	2	37	0.03	75.63						
sourc_data	5	6	3	3	2	6	4	12	4	8	2	2	37	0.03	75.67						
text_message	3	6	4	9	2	3	3	11	2	2	2	6	37	0.03	75.70						
technolog_volum	4	5	4	8	5	11	6	7	2	4	1	2	37	0.03	75.73						
analysi_social	3	4	4	7	5	8	7	8	5	8	1	2	37	0.03	75.76						
base_techniqu	3	4	9	11	5	6	4	5	7	9	1	2	37	0.03	75.79						
dataset_train	4	4	4	5	2	2	7	15	7	8	3	3	37	0.03	75.83						
select_algorithm	3	4	2	3	3	17	2	3	3	9	1	1	37	0.03	75.86						
token_stop	2	3	7	8	4	6	8	10	5	6	4	4	37	0.03	75.89						
us_wordnet	3	3	6	13	4	8	6	9	1	3	1	1	37	0.03	75.92						
valu_pair	2	3	5	6	4	14	2	2	5	11	1	1	37	0.03	75.95						
base_represent	2	2	6	17	6	7	2	2	5	5	1	4	37	0.03	75.99						
facebook_twitter	1	2	5	6	3	9	5	5	3	13	1	2	37	0.03	76.02						
us_wikipedia	2	2	5	13	3	3	5	12	2	2	1	5	37	0.03	76.05						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
class_number	1	1	4	5	4	7	19	6	7	1	1	37	0	0	3	0	0	76.08			
dimension_featur	8	16	1	1	3	4	1	1	7	13	1	1	36	0	0	3	0	0	76.11		
extract_techniqu	6	15	3	3	4	4	4	12	1	1	1	1	36	0	0	3	0	0	76.15		
model_automat	10	11	2	4	4	4	4	4	5	9	4	4	36	0	0	3	0	0	76.18		
european_languag	5	10	4	4	5	16	2	2	3	3	1	1	36	0	0	3	0	0	76.21		
text_repres	7	10	9	12	2	3	4	6	4	4	1	1	36	0	0	3	0	0	76.24		
comput_network	3	8	2	2	3	4	3	11	6	9	1	2	36	0	0	3	0	0	76.27		
method_combin	4	8	6	6	3	4	5	5	9	12	1	1	36	0	0	3	0	0	76.30		
word_match	6	8	7	13	2	3	5	9	1	1	2	2	36	0	0	3	0	0	76.33		
algorithm_find	5	7	8	11	2	2	6	6	7	9	1	1	36	0	0	3	0	0	76.36		
data_consist	6	7	7	9	3	3	7	10	6	6	1	1	36	0	0	3	0	0	76.40		
featur_includ	4	7	5	11	3	3	7	7	4	4	3	4	36	0	0	3	0	0	76.43		
form_stem	6	7	6	8	3	3	4	8	5	7	3	3	36	0	0	3	0	0	76.46		
token_process	5	7	7	8	3	5	2	3	7	9	4	4	36	0	0	3	0	0	76.49		
weight_vector	5	7	2	7	1	1	4	16	3	3	2	2	36	0	0	3	0	0	76.52		
consist_document	4	6	5	10	1	1	6	8	5	10	1	1	36	0	0	3	0	0	76.55		
sentenc_structur	4	6	5	9	4	5	2	3	6	11	2	2	36	0	0	3	0	0	76.58		
system_consist	6	6	7	8	3	5	4	5	4	9	3	3	36	0	0	3	0	0	76.61		
test_model	3	6	4	4	5	4	12	3	5	2	4	36	0	0	3	0	0	76.65			
analysi_machin	5	5	2	3	6	6	5	5	10	15	2	2	36	0	0	3	0	0	76.68		
frequenc_weight	4	5	4	6	8	10	1	1	7	13	1	1	36	0	0	3	0	0	76.71		
measur_calcult	5	5	5	6	2	2	6	11	6	9	3	3	36	0	0	3	0	0	76.74		
workshop_comput	5	5	8	11	2	4	6	7	5	8	1	1	36	0	0	3	0	0	76.77		
text_dataset	3	4	2	3	2	2	4	8	5	18	1	1	36	0	0	3	0	0	76.80		
us_equat	4	4	6	18	3	5	2	2	3	6	1	1	36	0	0	3	0	0	76.83		

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
collect_corpus	2	3	9	11	1	1	4	4	6	12	5	5	36	0.03	76.86						
lexic_featur	2	3	5	12	4	5	4	9	3	6	1	1	36	0.03	76.90						
mean_valu	3	3	5	13	1	1	4	11	4	6	1	2	36	0.03	76.93						
model_extract	3	3	6	8	2	3	5	5	4	16	1	1	36	0.03	76.96						
perform_analysis	3	3	5	5	7	13	5	9	3	5	1	1	36	0.03	76.99						
corpu_word	2	2	4	4	3	4	8	17	6	8	1	1	36	0.03	77.02						
model_system	2	2	3	6	2	3	2	12	3	11	1	2	36	0.03	77.05						
us_rule	1	1	6	7	3	3	5	2	14	2	6	36	0.03	77.08							
concept_document	3	16	6	12	3	3	2	2	1	1	1	1	35	0.03	77.11						
catégori_catégori	6	15	4	5	6	6	4	6	1	1	1	2	35	0.03	77.14						
length_document	7	12	6	8	7	9	2	4	1	1	1	1	35	0.03	77.17						
north_chapter	5	11	6	10	2	2	6	8	2	3	1	1	35	0.03	77.21						
overall_perform	3	11	6	10	2	2	4	6	3	4	2	2	35	0.03	77.24						
document_length	6	10	3	4	5	7	5	11	2	2	1	1	35	0.03	77.27						
cluster_accuraci	4	9	3	3	2	4	3	8	3	9	1	2	35	0.03	77.30						
good_perform	7	8	3	3	3	3	3	7	14	4	4	35	0.03	77.33							
list_stop	7	8	3	7	5	6	3	5	5	7	1	2	35	0.03	77.36						
index_html	4	6	3	5	3	3	6	11	5	8	2	2	35	0.03	77.39						
algorithm_implement	5	5	7	7	4	4	7	8	6	10	1	1	35	0.03	77.42						
convert_text	5	5	10	13	2	2	6	7	3	4	4	4	35	0.03	77.45						
word_elimin	5	5	8	9	4	6	7	8	2	6	1	1	35	0.03	77.48						
improv_text	3	4	7	10	5	5	6	6	5	9	1	1	35	0.03	77.51						
collect_tweet	1	3	5	15	1	1	3	10	5	5	1	1	35	0.03	77.54						
count_word	3	3	5	4	5	6	13	6	6	3	3	35	0.03	77.57							
extract_knowledg	3	3	4	6	4	5	6	11	7	9	1	1	35	0.03	77.60						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
statist_signific	3	3	4	4	3	8	7	9	6	8	2	3	35	0.03	77.63						
emot_text	1	2	1	7	3	9	2	10	3	3	1	4	35	0.03	77.66						
knowledg_extract	2	2	5	6	3	3	9	9	8	14	1	1	35	0.03	77.69						
term_queri	2	2	6	8	2	3	3	3	2	5	1	14	35	0.03	77.72						
semant_evalu	1	1	4	5	4	17	2	4	5	5	1	3	35	0.03	77.75						
method_extract	8	12	7	8	3	3	5	5	4	5	1	1	34	0.03	77.78						
overall_accuraci	4	12	2	6	1	1	4	7	2	2	1	6	34	0.03	77.81						
repres_term	8	11	5	8	5	9	2	2	1	1	2	3	34	0.03	77.84						
approach_automat	7	10	9	9	7	8	2	2	4	4	1	1	34	0.03	77.87						
automat_classifi	6	9	3	3	5	6	5	7	5	7	1	2	34	0.03	77.90						
method_describ	7	9	4	4	2	2	7	8	4	10	1	1	34	0.03	77.93						
languag_specif	5	7	5	11	4	5	3	3	4	6	1	2	34	0.03	77.96						
node_repres	4	7	4	6	2	7	3	6	3	4	2	4	34	0.03	77.99						
topic_text	4	7	2	4	5	15	3	5	2	2	1	1	34	0.03	78.02						
difficult_task	4	6	4	8	3	3	7	12	4	4	1	1	34	0.03	78.05						
access_inform	4	5	2	2	6	8	6	8	4	10	1	1	34	0.03	78.08						
depart_inform	4	5	3	5	6	8	3	6	6	8	2	2	34	0.03	78.11						
naiv_bayesian	2	5	4	7	3	4	3	3	4	9	1	6	34	0.03	78.14						
queri_word	3	5	2	5	3	5	4	8	3	7	1	4	34	0.03	78.17						
caus_effect	1	4	2	8	2	11	1	1	3	9	1	1	34	0.03	78.19						
comput_base	4	4	2	2	6	10	4	4	7	8	3	6	34	0.03	78.22						
fine_grain	4	4	5	12	6	10	1	1	5	5	1	2	34	0.03	78.25						
measur_defin	3	4	4	5	7	9	7	10	4	5	1	1	34	0.03	78.28						
text_written	4	4	6	7	4	4	7	6	10	1	2	34	0.03	78.31							
distribut_document	3	3	5	8	4	5	4	6	5	11	1	1	34	0.03	78.34						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
lower_case	2	3	3	3	4	4	9	9	13	1	2	34	0.03	0.03	78.37						
recognit_system	2	3	5	11	3	3	2	9	3	7	1	1	34	0.03	0.03	78.40					
semi_automat	2	3	8	15	4	6	3	3	6	1	1	34	0.03	0.03	78.43						
consist_word	2	2	7	11	3	6	5	9	3	5	1	1	34	0.03	0.03	78.46					
context_base	2	2	6	8	3	5	4	8	4	10	1	1	34	0.03	0.03	78.49					
dataset_us	2	2	3	5	5	7	7	9	6	9	2	2	34	0.03	0.03	78.52					
process_phase	2	2	9	15	2	3	3	3	4	9	2	2	34	0.03	0.03	78.55					
us_corpu	1	1	3	4	2	2	2	6	4	20	1	1	34	0.03	0.03	78.58					
word_distribut	1	1	2	6	5	6	4	7	2	3	3	11	34	0.03	0.03	78.61					
term_occurr	4	16	4	5	2	2	1	1	6	8	1	1	33	0.03	0.03	78.64					
method_cluster	6	11	5	6	4	5	3	3	4	4	1	4	33	0.03	0.03	78.67					
token_text	9	11	2	5	6	8	3	3	4	4	2	2	33	0.03	0.03	78.69					
compon_analysi	4	10	5	6	2	2	1	3	4	11	1	1	33	0.03	0.03	78.72					
gener_term	8	10	11	11	2	2	4	4	3	3	2	3	33	0.03	0.03	78.75					
semant_structur	5	10	9	11	2	2	3	5	4	4	1	1	33	0.03	0.03	78.78					
stem_reduc	10	10	8	8	2	2	6	7	5	5	1	1	33	0.03	0.03	78.81					
term_accuraci	6	10	4	5	5	5	3	5	4	7	1	1	33	0.03	0.03	78.84					
cluster_word	4	9	5	5	4	7	3	7	2	2	2	3	33	0.03	0.03	78.87					
document_given	9	9	7	10	4	6	5	5	2	2	1	1	33	0.03	0.03	78.89					
system_text	7	9	6	6	6	8	4	6	2	2	2	2	33	0.03	0.03	78.92					
text_understand	3	9	3	3	2	7	5	7	2	6	1	1	33	0.03	0.03	78.95					
us_mean	8	9	4	6	3	4	6	8	3	5	1	1	33	0.03	0.03	78.98					
document_extract	6	8	4	6	4	6	4	6	4	5	1	2	33	0.03	0.03	79.01					
frequenc_calcul	4	8	8	10	4	4	3	5	4	4	1	2	33	0.03	0.03	79.04					
document_group	5	6	4	7	4	4	5	7	3	3	2	6	33	0.03	0.03	79.07					

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
domain_knowledg	4	6	4	4	7	13	4	7	2	2	1	1	33	0.03	79.10						
gener_content	2	6	4	6	2	2	3	3	4	15	1	1	33	0.03	79.12						
learn_data	4	6	6	8	5	6	2	2	6	6	3	5	33	0.03	79.15						
retriev_base	3	6	3	4	3	5	5	13	4	4	1	1	33	0.03	79.18						
algorithm_mean	3	5	3	5	2	3	5	5	5	10	1	5	33	0.03	79.21						
approach_perform	5	5	6	5	6	5	8	3	6	2	2	2	33	0.03	79.24						
model_approach	4	5	2	2	3	3	5	12	7	9	2	2	33	0.03	79.27						
network_us	3	5	2	3	2	4	4	5	6	14	1	2	33	0.03	79.30						
gram_word	3	4	1	1	3	14	1	10	3	3	1	1	33	0.03	79.32						
model_combin	4	4	5	6	2	2	5	5	6	8	4	8	33	0.03	79.35						
stemmer_algorithm	4	4	3	6	7	7	3	6	4	7	3	3	33	0.03	79.38						
valu_paramet	4	4	4	5	3	3	3	6	5	14	1	1	33	0.03	79.41						
valu_word	4	4	5	5	7	8	2	2	10	13	1	1	33	0.03	79.44						
accuracy_tabl	2	3	4	6	2	5	5	11	6	7	1	1	33	0.03	79.47						
assign_word	3	3	5	13	2	2	5	8	4	4	2	3	33	0.03	79.50						
base_measur	3	3	4	6	11	6	8	2	4	2	3	33	0.03	79.53							
process_approach	3	3	3	3	3	3	4	4	19	1	1	33	0.03	79.55							
us_latent	3	3	5	18	1	1	4	5	2	3	2	3	33	0.03	79.58						
gener_algorithm	2	2	3	3	2	7	1	18	2	2	1	1	33	0.03	79.61						
preprocess_techniqu	2	2	5	7	3	3	2	2	7	16	3	3	33	0.03	79.64						
rule_rule	1	2	2	2	4	4	4	10	4	14	1	1	33	0.03	79.67						
level_text	1	1	3	18	5	5	3	3	2	5	1	1	33	0.03	79.70						
process_base	1	1	6	9	3	3	5	5	5	13	2	2	33	0.03	79.73						
relev_queri	7	13	3	5	1	1	5	7	2	3	1	3	32	0.03	79.75						
document_test	8	12	4	4	2	3	4	6	5	5	2	2	32	0.03	79.78						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
document_accord	8	11	8	10	3	3	3	4	4	1	1	32	0.03	79.81							
order_evalu	9	11	4	4	3	7	2	2	4	5	2	3	32	0.03	79.84						
base_learn	9	9	4	4	1	1	3	3	5	10	3	5	32	0.03	79.86						
algorithm_suffix	5	8	6	8	5	5	5	6	3	4	1	1	32	0.03	79.89						
approach_featur	5	8	1	1	2	5	2	14	3	3	1	1	32	0.03	79.92						
time_process	6	8	3	3	2	2	4	5	5	13	1	1	32	0.03	79.95						
equal_number	7	7	4	5	7	7	5	7	3	5	1	1	32	0.03	79.98						
improv_cluster	6	7	4	4	4	8	2	3	3	9	1	1	32	0.03	80.00						
classif_document	6	5	8	4	5	5	6	4	6	1	1	32	0.03	80.03							
gener_process	3	6	2	6	3	3	5	9	5	7	1	1	32	0.03	80.06						
Jordan_latent	6	6	8	4	4	9	9	4	4	1	1	32	0.03	80.09							
label_train	6	6	4	8	2	2	4	12	2	2	2	2	32	0.03	80.11						
model_describ	6	6	5	7	3	3	4	6	4	7	3	3	32	0.03	80.14						
us_topic	4	6	2	2	1	1	7	14	2	3	3	6	32	0.03	80.17						
base_machin	5	5	1	1	4	6	4	6	11	12	2	2	32	0.03	80.20						
frequenc_number	4	5	6	5	6	7	7	5	6	2	2	32	0.03	80.23							
process_includ	4	5	6	9	4	4	7	5	6	1	1	32	0.03	80.25							
word_assign	4	5	4	9	6	6	7	2	2	3	3	32	0.03	80.28							
automat_classif	4	4	5	5	1	1	3	5	10	16	1	1	32	0.03	80.31						
calcul_term	3	4	5	5	2	4	7	8	7	4	4	4	32	0.03	80.34						
signific_improv	4	4	6	11	3	3	2	4	5	7	3	3	32	0.03	80.36						
stage_process	4	4	3	12	4	4	3	3	4	8	1	1	32	0.03	80.39						
valu_indic	4	4	3	3	5	9	5	6	3	6	1	4	32	0.03	80.42						
analysi_tool	3	3	4	4	4	6	8	10	4	6	3	3	32	0.03	80.45						
gener_method	3	3	4	16	2	2	1	2	3	3	6	32	0.03	80.48							

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
vector_us	3	6	7	1	1	3	11	3	5	2	5	32	0	0	0	0	0	0	80.50	80.50	
origin_data	2	2	4	6	4	8	3	3	4	11	2	2	32	0	0	0	0	0	80.53	80.53	
comput_secur	1	1	2	2	2	2	3	7	3	19	1	1	32	0	0	0	0	0	80.56	80.56	
engin_depart	1	1	4	7	4	4	3	5	5	8	1	7	32	0	0	0	0	0	80.59	80.59	
frequent_item	1	1	2	4	4	11	1	14	1	1	1	1	32	0	0	0	0	0	80.61	80.61	
http_github	1	1	3	3	1	1	7	15	7	9	2	3	32	0	0	0	0	0	80.64	80.64	
increas_perform	1	1	3	3	3	5	5	7	6	12	2	4	32	0	0	0	0	0	80.67	80.67	
occur_document	6	11	6	6	5	6	2	2	4	5	1	1	31	0	0	0	0	0	80.70	80.70	
similar_cluster	5	10	2	2	3	3	4	7	4	5	1	4	31	0	0	0	0	0	80.72	80.72	
studi_featur	7	9	5	5	2	2	4	5	6	9	1	1	31	0	0	0	0	0	80.75	80.75	
token_stem	5	8	5	6	1	1	8	13	1	1	1	2	31	0	0	0	0	0	80.78	80.78	
us_weight	5	8	1	2	4	4	5	7	7	8	2	2	31	0	0	0	0	0	80.80	80.80	
word_reduc	8	8	6	6	3	3	7	8	4	4	2	2	31	0	0	0	0	0	80.83	80.83	
base_number	6	7	3	4	4	4	6	6	9	1	1	31	0	0	0	0	0	80.86	80.86		
data_includ	3	7	5	6	4	6	3	3	5	7	2	2	31	0	0	0	0	0	80.89	80.89	
dataset_collect	4	7	3	4	3	4	7	11	2	4	1	1	31	0	0	0	0	0	80.91	80.91	
find_word	5	7	8	9	4	4	6	6	4	4	1	1	31	0	0	0	0	0	80.94	80.94	
learn_train	2	7	7	7	6	6	4	4	1	1	3	6	31	0	0	0	0	0	80.97	80.97	
reduc_time	6	7	4	5	3	3	3	4	6	10	1	2	31	0	0	0	0	0	80.99	80.99	
weight_document	5	7	5	5	11	5	5	2	2	1	1	31	0	0	0	0	0	81.02	81.02		
word_collect	6	7	4	5	6	6	4	4	5	7	2	2	31	0	0	0	0	0	81.05	81.05	
corpu_train	4	6	1	1	2	2	6	13	4	8	1	1	31	0	0	0	0	0	81.07	81.07	
learn_system	5	6	3	3	2	4	3	3	6	14	1	1	31	0	0	0	0	0	81.10	81.10	
accuraci_classif	4	5	7	10	4	8	2	2	4	5	1	1	31	0	0	0	0	0	81.13	81.13	
algorithm_compar	4	5	4	5	5	7	9	2	6	1	1	31	0	0	0	0	0	81.15	81.15		

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
base_form	5	5	6	7	4	7	8	2	2	2	2	2	31	0.03	81.18						
contain_text	5	5	6	8	5	5	6	8	4	4	1	1	31	0.03	81.21						
dataset_experi	3	5	7	9	4	4	3	3	7	8	2	2	31	0.03	81.24						
pair_word	5	5	5	11	1	1	7	9	1	1	2	4	31	0.03	81.26						
approach_combin	3	4	3	3	1	1	5	17	2	4	2	2	31	0.03	81.29						
includ_word	4	4	6	8	3	4	5	8	5	6	1	1	31	0.03	81.32						
problem_text	4	4	4	4	11	12	7	7	3	3	1	1	31	0.03	81.34						
reduct_techniqu	2	4	5	6	9	10	2	3	4	7	1	1	31	0.03	81.37						
remov_punctuat	4	4	2	3	7	7	3	4	6	12	1	1	31	0.03	81.40						
score_system	2	4	2	2	2	5	4	7	2	2	2	11	31	0.03	81.42						
select_document	4	4	7	10	3	5	5	7	2	3	1	2	31	0.03	81.45						
type_featur	3	4	7	10	2	2	3	11	3	3	1	1	31	0.03	81.48						
us_model	4	4	2	4	2	2	4	4	6	15	2	2	31	0.03	81.50						
mobil_phone	3	3	1	3	1	1	5	12	4	6	3	6	31	0.03	81.53						
select_relev	3	3	4	4	4	9	2	2	2	2	2	11	31	0.03	81.56						
system_data	3	3	8	15	1	1	4	5	5	6	1	1	31	0.03	81.59						
gener_us	1	2	4	5	8	9	4	5	6	9	1	1	31	0.03	81.61						
order_extract	2	2	8	11	3	6	5	6	5	5	1	1	31	0.03	81.64						
perfor_manc	2	2	3	8	4	5	4	10	4	4	2	2	31	0.03	81.67						
recal_recal	2	2	5	21	4	5	1	1	1	1	1	1	31	0.03	81.69						
rule_extract	2	2	1	1	9	12	2	2	1	13	1	1	31	0.03	81.72						
structur_text	2	2	4	8	4	5	5	5	6	7	3	4	31	0.03	81.75						
word_train	1	2	2	2	6	6	4	13	5	6	2	2	31	0.03	81.77						
combin_model	1	1	4	5	1	1	2	4	3	18	2	2	31	0.03	81.80						
data_classif	1	1	3	4	3	3	6	7	7	15	1	1	31	0.03	81.83						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
time_featur	6	12	3	3	1	8	2	2	4	4	1	1	30	0	0	0	0	0	81.85		
gener_categor	3	10	2	2	1	10	2	4	2	3	1	1	30	0	0	0	0	0	81.88		
model_term	6	10	6	8	3	4	2	2	3	5	1	1	30	0	0	0	0	0	81.91		
probabilist_latent	5	10	1	3	2	6	1	4	2	4	2	3	30	0	0	0	0	0	81.93		
search_word	5	10	1	2	4	5	5	6	4	6	1	1	30	0	0	0	0	0	81.96		
order_word	7	9	3	3	3	3	6	8	4	6	1	1	30	0	0	0	0	0	81.98		
predict_class	5	8	4	5	3	3	2	2	6	10	2	2	30	0	0	0	0	0	82.01		
base_applic	5	7	5	8	1	2	1	2	4	10	1	1	30	0	0	0	0	0	82.04		
bay_classif	5	7	1	1	2	10	3	4	4	6	2	2	30	0	0	0	0	0	82.06		
binari_classif	4	7	3	3	1	2	5	15	2	2	1	1	30	0	0	0	0	0	82.09		
learn_inform	6	7	5	8	2	2	3	3	3	9	1	1	30	0	0	0	0	0	82.11		
note_comput	6	7	3	10	3	4	3	3	5	5	1	1	30	0	0	0	0	0	82.14		
number_class	6	7	4	7	4	4	3	7	3	3	2	2	30	0	0	0	0	0	82.17		
perform_inform	6	7	2	2	5	10	6	6	3	3	2	2	30	0	0	0	0	0	82.19		
techniqu_find	7	7	8	8	5	5	3	5	2	4	1	1	30	0	0	0	0	0	82.22		
main_step	4	6	7	10	4	4	1	1	2	8	1	1	30	0	0	0	0	0	82.24		
make_difficult	6	6	5	5	4	4	9	9	4	5	1	1	30	0	0	0	0	0	82.27		
servic_servic	3	6	1	1	2	2	1	4	4	6	1	1	30	0	0	0	0	0	82.30		
method_classif	4	5	3	4	2	2	4	6	5	10	3	3	30	0	0	0	0	0	82.32		
model_latent	4	5	6	1	1	7	11	2	3	3	4	3	30	0	0	0	0	0	82.35		
model_process	5	6	6	2	2	3	4	5	12	1	1	30	0	0	0	0	0	82.37			
statist_measur	4	5	3	10	2	2	4	8	2	2	1	3	30	0	0	0	0	0	82.40		
stem_method	3	5	5	8	4	6	3	6	3	4	1	1	30	0	0	0	0	0	82.43		
topic_gener	3	5	3	6	2	5	13	2	3	1	1	30	0	0	0	0	0	82.45			
tradit_approach	4	5	3	4	2	3	3	5	5	12	1	1	30	0	0	0	0	0	82.48		

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
data_format	3	4	6	8	4	6	3	5	4	4	1	3	30	0.03	82.50						
featur_term	4	4	3	3	5	7	5	5	3	9	2	2	30	0.03	82.53						
posit_class	2	4	3	3	1	1	4	17	2	4	1	1	30	0.03	82.56						
score_function	4	4	2	4	1	2	6	13	2	2	4	5	30	0.03	82.58						
term_precis	4	4	4	4	2	2	5	15	3	3	2	2	30	0.03	82.61						
total_word	3	4	3	9	4	11	1	1	4	4	1	1	30	0.03	82.64						
divid_number	3	3	1	1	3	6	6	6	5	11	2	3	30	0.03	82.66						
present_model	3	3	1	1	2	3	1	1	5	19	2	3	30	0.03	82.69						
word_group	3	3	2	2	7	7	5	16	1	1	1	1	30	0.03	82.71						
approach_develop	1	2	3	3	6	6	5	5	4	13	1	1	30	0.03	82.74						
compar_word	2	2	7	15	3	4	2	4	2	2	3	3	30	0.03	82.77						
find_optim	2	2	4	4	1	2	7	11	4	10	1	1	30	0.03	82.79						
further_improv	2	2	4	5	4	5	8	15	1	1	2	2	30	0.03	82.82						
probabl_word	2	2	3	9	5	5	6	11	2	2	1	1	30	0.03	82.84						
proce_ing	2	2	2	6	3	8	6	10	3	3	1	1	30	0.03	82.87						
data_form	1	1	4	4	3	4	3	6	5	14	1	1	30	0.03	82.90						
neg_sentiment	1	1	2	5	2	4	3	4	6	13	2	3	30	0.03	82.92						
servic_orient	1	1	1	1	1	1	1	1	4	7	1	19	30	0.03	82.95						
cluster_gener	9	10	5	5	5	4	4	1	1	1	4	29	0.03	82.97							
train_phase	8	10	2	2	1	1	6	7	6	6	3	3	29	0.03	83.00						
cluster_mean	5	8	4	4	4	7	5	6	2	3	1	1	29	0.03	83.02						
document_set	4	8	1	1	2	2	3	3	2	10	3	5	29	0.03	83.05						
file_file	4	7	3	3	1	1	5	5	5	11	2	2	29	0.03	83.07						
inform_sourc	3	7	4	8	3	7	4	4	2	2	1	1	29	0.03	83.10						
neighbor_algorithm	5	7	3	9	2	2	5	6	4	4	1	1	29	0.03	83.12						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
preprocess_document	6	7	6	6	3	5	5	5	3	3	3	3	3	3	3	29	0.03	83.15			
structur_inform	6	6	5	8	3	5	3	3	4	2	3	29	0.03	83.17					83.17		
us_approach	4	6	4	4	4	4	5	5	5	9	1	1	29	0.03	83.20				83.20		
dataset_evalu	4	5	5	1	1	3	11	4	6	1	1	29	0.03	83.22				83.22			
mine_pattern	3	5	3	8	5	9	2	3	3	1	1	29	0.03	83.25				83.25			
model_user	4	5	1	2	4	4	1	2	5	12	4	4	29	0.03	83.28				83.28		
model_vector	4	5	3	3	3	5	2	8	3	3	3	5	29	0.03	83.30				83.30		
size_data	3	5	4	5	2	4	2	3	7	9	2	3	29	0.03	83.33				83.33		
struc_ture	4	5	4	11	2	7	3	3	1	1	2	2	29	0.03	83.35				83.35		
calcul_number	3	4	8	8	3	4	3	4	4	6	1	3	29	0.03	83.38				83.38		
number_charact	3	4	6	9	1	1	5	9	4	5	1	1	29	0.03	83.40				83.40		
system_support	4	4	7	8	3	3	1	6	4	7	1	1	29	0.03	83.43				83.43		
us_combin	3	4	5	6	3	3	4	5	7	10	1	1	29	0.03	83.45				83.45		
user_interact	3	4	3	4	4	5	1	1	5	11	1	4	29	0.03	83.48				83.48		
data_represent	2	3	5	9	5	6	2	2	4	8	1	1	29	0.03	83.50				83.50		
experi_evalu	2	3	2	2	3	5	5	7	10	5	6	29	0.03	83.53				83.53			
gener_purpos	3	3	2	9	2	2	7	9	3	5	1	1	29	0.03	83.55				83.55		
linguist_human	3	3	4	5	3	3	5	11	3	5	1	2	29	0.03	83.58				83.58		
tech_nologi	2	3	2	8	3	5	3	5	3	7	1	1	29	0.03	83.60				83.60		
word_frequent	3	3	5	6	3	3	7	10	4	4	2	3	29	0.03	83.63				83.63		
automat_process	2	2	8	11	4	8	2	2	3	4	2	2	29	0.03	83.65				83.65		
remov_prefix	1	2	3	7	4	5	6	9	4	5	1	1	29	0.03	83.68				83.68		
select_word	2	2	6	8	3	6	5	6	6	6	1	1	29	0.03	83.70				83.70		
us_naiv	2	2	1	1	2	5	1	1	3	19	1	1	29	0.03	83.73				83.73		
correct_word	1	1	1	1	1	4	23	2	2	1	1	29	0.03	83.75				83.75			

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
perform_poorli	1	1	1	6	2	3	5	11	3	5	3	3	29	0.03	83.78						
type_type	1	16	3	4	2	2	3	3	2	2	1	1	28	0.02	83.80						
retriev_perform	6	14	2	2	1	1	3	2	3	2	5	28	0.02	83.83							
effect_featur	7	12	5	7	2	2	2	2	4	1	1	28	0.02	83.85							
data_gather	3	11	3	3	3	1	3	3	7	1	1	28	0.02	83.88							
inform_filter	8	10	5	5	2	5	4	5	2	2	1	1	28	0.02	83.90						
overcom_problem	6	10	3	3	3	3	2	2	8	9	1	1	28	0.02	83.92						
method_arab	5	9	1	1	5	7	4	7	3	3	1	1	28	0.02	83.95						
reduc_size	7	8	3	3	3	3	4	5	6	7	2	2	28	0.02	83.97						
stem_techniqu	5	8	4	6	4	5	3	3	3	3	1	3	28	0.02	84.00						
us_document	8	8	5	6	2	3	2	2	5	5	3	4	28	0.02	84.02						
import_word	5	7	3	3	1	1	6	7	3	4	5	6	28	0.02	84.05						
perform_featur	6	7	3	4	5	6	3	3	5	7	1	1	28	0.02	84.07						
approach_classifi	4	6	5	8	2	2	4	8	3	3	1	1	28	0.02	84.09						
perform_document	4	6	1	1	3	3	9	9	3	6	1	3	28	0.02	84.12						
algorithm_data	3	5	3	3	5	6	4	4	7	9	1	1	28	0.02	84.14						
cluster_group	5	5	2	2	4	7	4	5	7	8	1	1	28	0.02	84.17						
estim_probabl	3	5	2	3	3	4	4	7	4	8	1	1	28	0.02	84.19						
given_topic	3	5	3	5	2	7	4	8	2	2	1	1	28	0.02	84.22						
model_implement	4	5	3	1	1	5	6	5	12	1	1	28	0.02	84.24							
order_achiev	4	5	4	4	3	3	5	8	5	7	1	1	28	0.02	84.26						
vector_model	5	5	3	4	5	5	1	5	3	6	2	3	28	0.02	84.29						
inform_data	4	4	4	5	5	6	7	7	4	5	1	1	28	0.02	84.31						
total_document	4	4	4	4	3	8	3	4	4	6	1	2	28	0.02	84.34						
document_comput	3	3	9	11	4	6	3	3	2	2	2	3	28	0.02	84.36						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
algorithm_test	2	2	5	6	2	2	5	11	4	6	1	1	28	0.02	84.39						
fuzzi_set	1	2	2	7	1	1	1	11	1	2	6	28	0.02	84.41							
system_process	2	2	8	9	4	4	3	4	4	8	1	1	28	0.02	84.43						
term_semant	2	2	6	9	4	6	1	4	4	4	2	3	28	0.02	84.46						
token_part	2	2	3	4	3	4	3	13	4	4	1	1	28	0.02	84.48						
train_train	2	2	3	4	3	3	5	12	5	6	1	1	28	0.02	84.51						
tree_algorithm	2	2	4	6	6	6	3	4	3	9	1	1	28	0.02	84.53						
detect_us	1	1	5	6	2	2	3	5	7	10	3	4	28	0.02	84.56						
help_identifi	1	1	5	6	2	2	4	4	8	12	1	3	28	0.02	84.58						
input_word	1	1	5	6	3	7	6	9	2	2	2	3	28	0.02	84.61						
contain_number	9	13	3	4	2	2	5	5	1	1	1	2	27	0.02	84.63						
group_document	3	11	2	2	6	6	2	5	2	2	1	1	27	0.02	84.65						
approach_analyz	8	9	4	4	5	5	7	7	1	1	1	1	27	0.02	84.68						
method_consid	7	8	1	1	4	5	2	2	7	10	1	1	27	0.02	84.70						
document_user	4	7	5	5	2	3	7	7	1	2	3	3	27	0.02	84.72						
languag_base	5	7	5	7	3	3	6	6	3	3	1	1	27	0.02	84.75						
commun_engin	2	6	3	6	3	3	4	5	6	6	1	1	27	0.02	84.77						
corpu_number	5	6	7	8	4	4	3	3	3	3	3	3	27	0.02	84.79						
perform_term	5	6	7	8	5	7	3	3	1	1	2	2	27	0.02	84.82						
collect_word	4	5	7	7	4	4	3	5	4	4	2	2	27	0.02	84.84						
detail_descript	4	5	5	8	2	2	5	7	3	4	1	1	27	0.02	84.86						
inform_us	3	5	8	8	1	2	5	5	6	6	1	1	27	0.02	84.89						
tree_classifi	3	5	3	6	3	5	3	4	3	6	1	1	27	0.02	84.91						
word_exist	4	5	2	2	6	9	5	5	4	4	2	2	27	0.02	84.93						
analysi_opinion	3	4	4	13	3	3	1	1	3	3	2	3	27	0.02	84.96						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
effect_us	3	4	3	4	6	7	3	3	5	8	1	1	27	0.02	84.98						
method_measur	4	4	2	8	3	4	7	9	1	1	1	1	27	0.02	85.00						
paramet_valu	3	4	4	6	1	1	4	5	4	9	2	2	27	0.02	85.03						
supervis_unsupervis	3	4	5	6	1	1	6	8	7	7	1	1	27	0.02	85.05						
text_consid	3	4	7	8	2	2	2	8	4	4	1	1	27	0.02	85.07						
averag_valu	3	3	2	2	4	6	3	5	2	8	1	3	27	0.02	85.10						
bay_theorem	3	3	2	2	2	4	5	7	8	9	2	2	27	0.02	85.12						
evalu_classifi	3	3	2	2	2	2	4	14	3	5	1	1	27	0.02	85.14						
pattern_gener	1	3	9	13	2	3	2	2	3	5	1	1	27	0.02	85.17						
perform_improv	3	3	5	7	1	1	5	8	4	4	1	4	27	0.02	85.19						
preprocess_data	3	3	2	2	3	3	5	12	3	4	2	3	27	0.02	85.21						
test_system	2	3	1	1	3	3	2	3	5	16	1	1	27	0.02	85.24						
word_search	3	3	6	9	2	6	5	5	2	2	2	2	27	0.02	85.26						
faculti_scien	2	2	3	8	4	6	1	2	2	2	2	7	27	0.02	85.29						
form_us	2	2	3	3	7	7	5	9	3	5	1	1	27	0.02	85.31						
linguist_resourc	2	2	3	4	4	13	3	5	1	1	1	2	27	0.02	85.33						
semant_network	2	2	3	7	4	4	3	5	2	2	2	7	27	0.02	85.36						
variou_featur	2	2	4	6	4	4	3	8	5	5	1	2	27	0.02	85.38						
written_text	2	2	2	2	4	4	5	14	4	4	1	1	27	0.02	85.40						
catégori_word	1	1	8	10	6	10	1	1	3	4	1	1	27	0.02	85.43						
context_awar	1	1	4	4	1	1	4	11	4	8	1	2	27	0.02	85.45						
extract_tweet	1	1	2	3	3	3	4	16	3	3	1	1	27	0.02	85.47						
order_logic	1	1	1	1	2	2	2	7	2	14	1	2	27	0.02	85.50						
select_term	1	1	8	10	4	10	2	2	3	3	1	1	27	0.02	85.52						
simpl_word	1	1	4	5	1	2	4	16	1	1	2	2	27	0.02	85.54						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
appear_frequent	6	8	2	2	3	4	4	5	4	6	1	1	26	0.02	85.57						
method_select	6	8	2	2	3	3	4	6	6	6	1	1	26	0.02	85.59						
modern_inform	7	8	6	6	1	1	4	5	2	5	1	1	26	0.02	85.61						
term_gener	5	8	2	4	4	7	4	4	1	1	2	2	26	0.02	85.63						
evalu_evalu	5	7	2	2	3	4	4	6	4	6	1	1	26	0.02	85.66						
method_improv	6	7	4	4	1	1	4	4	7	9	1	1	26	0.02	85.68						
model_defin	4	7	1	1	1	3	5	3	11	1	1	1	26	0.02	85.70						
multinomi_distribut	4	7	3	6	3	3	1	3	1	2	3	5	26	0.02	85.72						
size_train	3	7	4	8	1	1	2	4	5	5	1	1	26	0.02	85.75						
specif_topic	7	7	3	8	3	3	3	3	2	2	3	3	26	0.02	85.77						
approach_cluster	6	6	3	3	4	8	1	1	3	3	1	5	26	0.02	85.79						
describ_detail	3	6	3	3	5	5	5	9	2	2	1	1	26	0.02	85.81						
document_thu	5	6	7	7	2	2	5	5	3	4	1	2	26	0.02	85.84						
gram_model	3	6	2	2	5	6	1	6	2	5	1	1	26	0.02	85.86						
train_time	2	6	1	3	2	3	5	5	4	7	1	2	26	0.02	85.88						
convert_word	5	5	4	4	1	1	6	13	1	1	2	2	26	0.02	85.90						
divid_total	4	5	2	2	6	6	4	5	3	5	3	3	26	0.02	85.93						
improv_precis	5	5	2	6	2	5	4	5	3	3	1	2	26	0.02	85.95						
document_order	4	4	3	5	6	9	5	5	2	2	1	1	26	0.02	85.97						
gram_featur	1	4	6	7	4	8	2	4	1	1	2	2	26	0.02	85.99						
main_featur	2	4	1	1	4	8	3	9	2	3	1	1	26	0.02	86.02						
mine_machin	3	4	6	8	2	3	4	5	4	4	1	2	26	0.02	86.04						
repr_sent	3	4	2	3	3	8	3	9	1	1	1	1	26	0.02	86.06						
test_evalu	1	4	3	4	2	2	3	7	4	6	3	3	26	0.02	86.08						
websit_http	4	4	2	2	1	1	5	5	4	13	1	1	26	0.02	86.11						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
calcul_frequenc	2	3	4	4	3	4	3	6	7	8	1	1	26	0	0	0.02	86.13	86.13			
comput_semant	2	3	5	7	3	3	2	8	2	2	3	3	26	0	0	0.02	86.15	86.15			
subset_featur	3	3	2	3	4	5	2	2	3	11	1	2	26	0	0	0.02	86.17	86.17			
system_arab	2	3	3	7	3	7	2	2	4	6	1	1	26	0	0	0.02	86.20	86.20			
algorithm_predict	1	2	2	2	3	5	6	6	11	2	2	26	0	0	0.02	86.22	86.22				
gener_data	2	2	4	4	5	6	4	4	3	9	1	1	26	0	0	0.02	86.24	86.24			
mine_natur	2	2	3	4	5	7	3	3	8	8	2	2	26	0	0	0.02	86.27	86.27			
multi_label	2	2	6	8	3	3	3	3	5	7	2	3	26	0	0	0.02	86.29	86.29			
node_graph	2	2	3	4	5	14	1	3	2	2	1	1	26	0	0	0.02	86.31	86.31			
word_test	2	2	3	5	1	2	4	8	2	6	2	3	26	0	0	0.02	86.33	86.33			
design_model	1	1	2	2	1	1	1	5	6	16	1	1	26	0	0	0.02	86.36	86.36			
further_develop	1	1	4	10	3	3	2	4	1	7	1	1	26	0	0	0.02	86.38	86.38			
model_construct	1	1	4	6	3	4	2	2	5	11	2	2	26	0	0	0.02	86.40	86.40			
sampl_data	1	1	2	3	2	2	1	1	7	16	3	3	26	0	0	0.02	86.42	86.42			
salton_bucklei	8	9	3	3	4	4	2	5	2	2	1	2	25	0	0	0.02	86.44	86.44			
applic_develop	1	8	1	1	3	3	1	2	4	10	1	1	25	0	0	0.02	86.47	86.47			
automat_document	6	8	3	8	4	4	3	3	1	1	1	1	25	0	0	0.02	86.49	86.49			
document_avail	6	7	2	2	7	7	6	7	1	1	1	1	25	0	0	0.02	86.51	86.51			
model_consid	6	7	3	3	3	3	4	3	6	2	2	25	0	0	0.02	86.53	86.53				
stem_step	3	7	4	5	2	3	1	1	4	4	4	5	25	0	0	0.02	86.55	86.55			
arxiv_preprint	1	6	2	2	4	1	2	3	7	2	4	25	0	0	0.02	86.58	86.58				
classifi_classif	6	6	5	7	3	3	1	1	6	6	1	2	25	0	0	0.02	86.60	86.60			
classifi_support	3	6	2	4	2	4	3	5	5	5	1	1	25	0	0	0.02	86.62	86.62			
mean_document	5	5	4	4	3	4	4	5	4	6	1	1	25	0	0	0.02	86.64	86.64			
method_comput	5	5	2	11	1	1	4	4	1	1	3	3	25	0	0	0.02	86.66	86.66			

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
technolog_issn	2	5	2	2	5	4	8	4	4	1	1	25	0.02	86.68							
appear_time	3	4	2	3	5	7	9	1	1	1	1	25	0.02	86.71							
auto_matic	4	4	5	3	4	3	5	4	6	1	1	25	0.02	86.73							
captur_semant	4	4	8	1	1	4	9	1	1	1	2	25	0.02	86.75							
linguist_structur	3	4	3	8	2	2	2	2	2	1	7	25	0.02	86.77							
perform_base	3	4	5	5	1	2	2	3	5	8	3	3	25	0.02	86.79						
word_refer	4	4	3	5	3	3	8	9	3	3	1	1	25	0.02	86.81						
data_obtain	2	3	5	6	3	6	1	1	6	7	1	2	25	0.02	86.84						
describ_system	3	3	5	4	4	5	9	2	2	2	2	25	0.02	86.86							
direct_graph	3	3	1	2	5	9	4	5	3	3	2	3	25	0.02	86.88						
help_improv	2	3	3	3	3	7	7	5	7	1	2	25	0.02	86.90							
linear_model	2	3	2	6	3	5	6	7	2	3	1	1	25	0.02	86.92						
model_provid	3	3	6	7	2	2	4	5	4	6	2	2	25	0.02	86.94						
multipl_word	3	4	9	4	5	4	6	1	1	1	1	25	0.02	86.97							
probabl_document	2	3	1	1	5	12	2	3	2	3	2	3	25	0.02	86.99						
topic_interest	3	1	1	2	15	3	3	1	1	2	2	25	0.02	87.01							
word_total	2	3	4	5	4	8	4	4	4	1	1	25	0.02	87.03							
accuraci.obtain	1	2	5	8	2	5	2	3	2	4	1	3	25	0.02	87.05						
class_classifi	2	2	1	3	1	2	3	11	6	6	1	1	25	0.02	87.07						
current_state	2	2	3	5	1	1	4	7	4	9	1	1	25	0.02	87.10						
experi_experi	2	2	1	1	2	5	4	5	6	11	1	1	25	0.02	87.12						
mathemat_comput	2	2	3	5	5	10	2	2	4	5	1	1	25	0.02	87.14						
measur_cosin	2	2	8	11	4	4	2	2	3	4	2	2	25	0.02	87.16						
messag_servic	1	2	2	3	1	1	2	2	3	16	1	1	25	0.02	87.18						
similar_text	1	2	4	5	2	2	5	11	3	3	1	2	25	0.02	87.20						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
achiev_good	1	1	5	6	5	5	4	4	5	8	1	1	25	0.02	87.23						
algorithm_term	1	1	4	5	5	5	4	4	5	9	1	1	25	0.02	87.25						
method_model	1	1	1	1	3	3	6	6	5	10	2	4	25	0.02	87.27						
metric_evalu	1	1	4	5	1	1	5	6	12	1	1	25	0.02	87.29							
stemmer_arab	1	1	4	7	2	2	4	9	1	5	1	1	25	0.02	87.31						
system_consid	1	1	5	7	3	3	2	4	5	8	2	2	25	0.02	87.33						
system_requir	1	1	3	3	3	3	4	4	4	12	1	2	25	0.02	87.36						
tweet_collect	1	1	5	17	1	2	1	1	1	2	1	2	25	0.02	87.38						
word_user	1	1	3	7	5	5	3	4	2	2	2	6	25	0.02	87.40						
appli_cluster	9	12	2	2	1	1	2	2	4	4	1	3	24	0.02	87.42						
learn_task	6	12	3	3	2	2	2	2	3	3	1	2	24	0.02	87.44						
document_organ	9	11	1	1	3	4	3	3	3	4	1	1	24	0.02	87.46						
measur_comput	3	10	3	4	3	3	2	2	3	3	2	2	24	0.02	87.48						
term_given	7	8	2	3	6	6	4	4	1	1	2	2	24	0.02	87.50						
user_find	5	8	3	3	3	4	4	6	2	2	1	1	24	0.02	87.53						
bay_model	2	7	5	6	1	3	4	6	1	1	1	1	24	0.02	87.55						
consid_term	7	7	5	6	5	6	2	2	2	1	1	1	24	0.02	87.57						
mcgraw_hill	6	7	5	5	1	1	2	4	4	5	2	2	24	0.02	87.59						
method_document	6	7	5	6	2	2	5	6	1	1	2	2	24	0.02	87.61						
model_cluster	3	7	2	2	3	4	2	3	2	2	1	6	24	0.02	87.63						
retriev_data	6	7	4	4	4	6	2	4	4	1	1	24	0.02	87.65							
search_inform	7	7	4	7	3	3	1	1	1	2	2	4	24	0.02	87.67						
basic_idea	6	6	2	2	4	4	4	6	4	4	2	2	24	0.02	87.69						
blog_post	3	6	3	6	5	6	3	3	1	2	1	1	24	0.02	87.71						
comput_survei	6	6	6	6	3	3	2	2	4	6	1	1	24	0.02	87.73						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
deriv_word	5	6	3	5	3	3	4	5	2	2	2	2	3	24	0.02	87.75					
main_contribut	3	6	4	7	4	4	2	2	4	4	1	1	1	24	0.02	87.78					
estim_paramet	3	5	2	6	1	1	3	4	3	7	1	1	1	24	0.02	87.80					
form_cluster	2	5	4	4	3	3	4	4	4	6	1	2	2	24	0.02	87.82					
method_name	3	5	1	1	1	1	5	5	3	9	3	3	3	24	0.02	87.84					
model_techinu	5	5	2	3	3	6	3	3	5	5	2	2	2	24	0.02	87.86					
neural_inform	2	5	3	3	3	3	3	3	5	9	1	1	1	24	0.02	87.88					
binari_classifi	3	4	2	2	1	2	3	11	3	3	2	2	2	24	0.02	87.90					
charact_token	4	4	2	3	3	4	3	7	2	5	1	1	1	24	0.02	87.92					
latent_variabl	3	4	1	2	1	6	1	5	1	6	1	1	1	24	0.02	87.94					
system_comput	4	4	3	3	2	2	3	5	3	9	1	1	1	24	0.02	87.96					
task_automat	4	4	6	8	4	4	3	4	2	2	2	2	2	24	0.02	87.98					
text_includ	4	4	8	8	2	2	3	3	4	6	1	1	1	24	0.02	88.00					
us_neural	2	4	1	3	2	2	4	5	5	5	3	5	5	24	0.02	88.03					
algorithm_describ	3	3	6	6	2	2	4	5	2	7	1	1	1	24	0.02	88.05					
algorithm_method	3	3	8	9	1	1	5	5	4	5	1	1	1	24	0.02	88.07					
algorithm_requir	2	3	2	4	4	4	4	6	8	2	3	2	3	24	0.02	88.09					
applic_us	3	3	1	1	1	1	2	3	5	13	3	3	3	24	0.02	88.11					
calcul_score	2	3	2	2	4	6	7	9	2	2	2	2	2	24	0.02	88.13					
featur_number	1	3	4	4	2	2	3	3	4	11	1	1	1	24	0.02	88.15					
inform_base	2	3	3	4	4	5	3	3	4	8	1	1	1	24	0.02	88.17					
method_achiev	3	3	4	1	1	2	2	6	13	1	1	1	24	0.02	88.19						
studi_focus	2	3	3	4	2	3	2	3	4	10	1	1	1	24	0.02	88.21					
comput_program	2	2	5	8	1	1	3	5	4	6	2	2	2	24	0.02	88.23					
dataset_test	2	2	4	5	4	4	3	4	5	8	1	1	1	24	0.02	88.25					

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
identifi_emot	1	2	1	4	2	3	10	3	3	1	2	24	0.02	88.28							
replac_word	2	2	2	4	6	7	11	1	2	1	1	24	0.02	88.30							
statist_data	2	2	1	2	2	2	4	5	13	1	1	24	0.02	88.32							
automat_detect	1	1	5	6	2	2	2	5	12	1	1	24	0.02	88.34							
calcul_word	1	1	5	6	2	2	6	7	4	6	2	24	0.02	88.36							
commun_system	1	1	1	1	1	1	4	7	4	12	2	24	0.02	88.38							
develop_tool	1	1	1	1	3	5	5	5	6	11	1	24	0.02	88.40							
featur_classif	1	1	4	7	2	3	4	6	4	5	2	24	0.02	88.42							
graphic_model	1	1	3	7	2	4	4	5	1	3	3	24	0.02	88.44							
process_term	1	1	6	8	1	1	6	10	3	3	1	24	0.02	88.46							
semant_resourc	1	1	2	3	3	4	3	12	2	2	1	24	0.02	88.48							
text_analyt	1	1	5	10	3	3	1	1	4	6	1	24	0.02	88.50							
word_weight	1	1	3	4	7	8	4	6	4	4	1	24	0.02	88.53							
match_match	4	11	1	1	1	1	1	2	8	1	1	23	0.02	88.55							
valu_obtain	4	11	2	2	1	1	2	4	4	4	1	23	0.02	88.57							
defin_term	8	9	2	2	2	5	5	1	1	1	1	23	0.02	88.59							
us_maximum	6	9	4	4	2	3	3	4	2	2	1	23	0.02	88.61							
cluster_comput	6	8	2	2	4	7	1	1	4	4	1	23	0.02	88.63							
space_word	6	8	1	3	2	2	3	5	4	4	1	23	0.02	88.65							
token_document	3	8	4	4	3	4	1	2	2	1	3	23	0.02	88.67							
model_dataset	4	7	3	5	2	2	3	3	3	3	3	23	0.02	88.69							
novel_approach	4	7	3	3	4	5	5	6	1	1	1	23	0.02	88.71							
vocabulari_word	4	7	3	7	1	1	4	4	2	2	2	23	0.02	88.72							
frequenc_measur	5	6	2	2	5	6	4	4	3	3	2	23	0.02	88.74							
ground_truth	3	6	2	4	3	5	2	4	1	1	3	23	0.02	88.76							

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
levelRepresent	2	6	2	12	1	1	2	1	1	1	1	1	23	0.02	88.78						
processSelect	4	6	4	4	3	3	4	4	5	5	1	1	23	0.02	88.80						
algorithmAutomat	3	5	2	5	3	4	1	2	4	6	1	1	23	0.02	88.82						
indexWord	2	5	1	2	2	4	5	10	1	1	1	1	23	0.02	88.84						
procSigir	3	5	5	8	2	2	2	3	1	1	1	4	23	0.02	88.86						
algorithmAchiev	3	4	1	3	2	2	6	9	3	4	1	1	23	0.02	88.88						
applAlgorithm	3	4	5	6	1	1	4	6	5	5	1	1	23	0.02	88.90						
averagLength	3	4	4	5	3	5	4	6	2	2	1	1	23	0.02	88.92						
evaluBase	4	2	3	1	1	5	7	4	6	2	2	2	23	0.02	88.94						
formTerm	4	4	6	4	4	2	3	3	5	1	1	1	23	0.02	88.96						
machinIntellig	4	4	2	2	4	4	4	7	8	1	1	1	23	0.02	88.98						
mineBase	4	4	3	5	6	6	3	3	3	3	1	2	23	0.02	89.00						
professorComput	4	4	6	10	4	4	1	1	1	1	1	3	23	0.02	89.02						
techniquReduc	4	4	5	2	2	2	2	8	8	2	2	2	23	0.02	89.04						
usTool	4	4	4	2	2	3	5	4	6	2	2	2	23	0.02	89.06						
vectorTerm	4	4	2	2	3	4	2	2	4	10	1	1	23	0.02	89.08						
evaluDataset	3	3	4	7	1	1	4	6	4	4	2	2	23	0.02	89.10						
extractSemant	3	3	6	8	1	1	4	4	2	2	3	5	23	0.02	89.12						
processMachin	3	3	4	6	2	2	3	6	5	5	1	1	23	0.02	89.14						
adjectNoun	2	2	1	1	5	5	5	4	8	1	2	23	0.02	89.16							
collectProcess	1	2	5	8	3	4	2	3	4	5	1	1	23	0.02	89.18						
gradientDescent	2	2	4	9	1	1	3	5	2	5	1	1	23	0.02	89.20						
informStructur	2	2	5	6	6	7	2	2	3	5	1	1	23	0.02	89.22						
languagWorld	2	2	3	4	4	4	3	3	4	7	2	3	23	0.02	89.24						
learnUs	2	2	2	2	2	2	5	7	4	8	1	2	23	0.02	89.26						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
model_make	2	2	2	2	2	6	7	4	9	1	1	23	0.02	89.28							
text_form	2	2	1	1	5	6	6	5	7	1	1	23	0.02	89.30							
analysi_natur	1	1	3	4	5	6	3	7	3	3	2	2	23	0.02	89.32						
complex_system	1	1	2	2	3	3	2	2	5	14	1	1	23	0.02	89.34						
Levenshtein_distanc	1	1	2	3	2	6	3	4	3	4	2	5	23	0.02	89.36						
million_peopl	1	1	2	2	5	7	3	3	4	6	2	4	23	0.02	89.38						
model_structur	1	1	2	5	2	2	3	6	3	4	2	5	23	0.02	89.40						
remain_word	1	1	4	4	4	5	7	11	1	1	1	1	23	0.02	89.42						
search_data	4	9	3	3	2	2	3	5	2	2	1	1	22	0.02	89.44						
approach_solv	2	8	3	3	2	2	5	7	1	1	1	1	22	0.02	89.46						
document_convert	6	8	4	4	1	1	3	3	3	4	2	2	22	0.02	89.48						
extern_knowledg	5	8	2	2	3	5	2	2	1	2	3	3	22	0.02	89.50						
appli_document	5	7	2	2	3	3	3	6	3	3	1	1	22	0.02	89.52						
assign_categorii	6	7	2	2	5	5	4	4	3	3	1	1	22	0.02	89.54						
distribut_data	3	7	3	3	6	6	1	2	3	3	1	1	22	0.02	89.56						
network_commun	2	7	2	2	1	7	2	2	3	3	1	1	22	0.02	89.58						
tree_base	3	7	2	2	1	1	2	4	5	6	1	2	22	0.02	89.60						
larger_number	5	6	2	2	2	3	3	7	3	3	1	1	22	0.02	89.61						
novel_method	5	6	4	4	3	3	3	6	1	1	2	2	22	0.02	89.63						
preprint_arxiv	1	6	2	2	2	1	2	6	2	4	2	4	22	0.02	89.65						
represent_vector	6	6	3	6	1	1	3	5	2	2	1	2	22	0.02	89.67						
us_keyword	6	6	5	6	3	4	4	1	1	1	1	1	22	0.02	89.69						
data_classifi	4	5	5	6	3	4	1	2	3	3	2	2	22	0.02	89.71						
distribut_term	4	5	4	6	4	4	2	3	3	1	1	1	22	0.02	89.73						
group_base	4	5	3	4	3	3	2	3	3	5	2	2	22	0.02	89.75						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
relev_user	2	5	2	2	3	4	4	8	1	1	1	2	22	0.02	89.77						
summari_task	2	5	3	8	2	2	3	4	1	2	1	1	22	0.02	89.79						
type_word	3	5	1	3	1	1	6	6	6	1	1	1	22	0.02	89.81						
vector_weight	5	5	6	7	1	1	4	4	3	4	1	1	22	0.02	89.83						
weight_weight	4	5	5	6	4	4	2	3	3	3	1	1	22	0.02	89.84						
approach_method	2	4	2	3	2	2	1	2	3	9	2	2	22	0.02	89.86						
column_repres	2	4	3	3	1	1	5	6	4	6	1	2	22	0.02	89.88						
dept_comput	4	4	4	7	4	5	2	2	1	1	2	3	22	0.02	89.90						
keyword_search	4	4	4	8	3	4	2	3	1	1	1	2	22	0.02	89.92						
measur_word	4	4	5	6	1	1	3	4	4	4	2	3	22	0.02	89.94						
model_analysi	2	4	1	3	2	2	2	6	3	5	1	2	22	0.02	89.96						
perform_comparison	4	4	5	6	1	1	5	6	3	3	2	2	22	0.02	89.98						
user_input	3	4	2	2	3	6	3	4	4	5	1	1	22	0.02	90.00						
approach_gener	3	1	1	4	4	4	4	5	8	2	2	22	0.02	90.02							
base_keyword	3	3	1	1	5	5	3	4	1	3	1	6	22	0.02	90.04						
base_multi	3	3	2	6	2	2	3	4	3	4	1	3	22	0.02	90.05						
base_score	2	3	3	8	2	2	5	5	2	2	2	2	22	0.02	90.07						
base_valu	2	3	5	7	2	2	1	1	6	8	1	1	22	0.02	90.09						
data_size	2	3	2	3	4	5	5	7	3	3	1	1	22	0.02	90.11						
data_social	2	3	3	3	2	3	3	7	4	5	1	1	22	0.02	90.13						
perform_variou	3	3	3	5	2	2	2	4	5	7	1	1	22	0.02	90.15						
reduc_comput	3	3	1	1	3	5	3	7	4	4	2	2	22	0.02	90.17						
studi_us	3	3	3	3	3	3	2	3	5	7	3	3	22	0.02	90.19						
us_measur	2	3	6	7	5	5	2	2	4	1	1	22	0.02	90.21							
word_input	3	3	4	4	5	6	3	3	5	5	1	1	22	0.02	90.23						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
workshop_text	2	3	4	4	7	11	1	1	2	2	1	1	22	0.02	90.25						
accuraci_score	2	2	2	4	3	4	2	4	2	2	2	6	22	0.02	90.26						
approach_identifi	2	2	3	6	3	3	2	2	4	7	1	2	22	0.02	90.28						
base_queri	2	2	4	6	1	2	5	7	2	2	1	3	22	0.02	90.30						
determin_word	2	2	4	6	1	1	6	8	3	4	1	1	22	0.02	90.32						
maximum_valu	2	2	5	5	4	7	1	1	3	6	1	1	22	0.02	90.34						
model_creat	2	2	1	1	1	1	2	2	5	11	4	5	22	0.02	90.36						
take_time	2	2	5	7	3	3	4	4	4	3	5	1	1	22	0.02	90.38					
us_number	2	2	3	3	3	4	2	4	5	6	3	3	22	0.02	90.40						
user_us	2	2	1	1	3	3	4	5	5	7	1	4	22	0.02	90.42						
averag_time	1	1	2	5	1	1	4	8	3	3	1	4	22	0.02	90.44						
classifi_predict	1	1	2	5	3	3	2	2	6	10	1	1	22	0.02	90.46						
knowledg_inform	1	1	5	5	7	11	1	1	2	2	2	2	22	0.02	90.47						
perform_stem	1	1	3	4	8	8	4	5	2	2	1	2	22	0.02	90.49						
valu_given	1	1	4	6	3	4	2	5	5	5	1	1	22	0.02	90.51						
word_replac	1	1	1	1	4	14	4	4	1	1	1	1	22	0.02	90.53						
document_appear	5	9	1	1	1	1	5	7	1	1	2	2	21	0.02	90.55						
kullback_leibler	4	8	1	1	3	8	1	1	1	2	1	1	21	0.02	90.57						
number_distinct	6	8	5	6	3	3	2	2	1	1	1	1	21	0.02	90.59						
learn_autom	7	7	6	6	5	5	1	1	1	1	1	1	21	0.02	90.60						
requir_number	4	7	5	6	2	2	1	1	4	4	1	1	21	0.02	90.62						
becom_popular	6	6	2	2	4	5	4	4	2	3	1	1	21	0.02	90.64						
process_call	5	6	4	4	4	4	1	2	3	4	1	1	21	0.02	90.66						
similar_featur	4	6	3	3	2	2	6	2	2	2	2	2	21	0.02	90.68						
singl_term	6	6	2	2	2	2	3	3	4	7	1	1	21	0.02	90.70						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
term_calcul	6	6	3	3	4	4	3	3	2	2	2	2	3	21	0.02	90.71	90.71				
term_topic	3	6	5	6	1	1	5	5	1	1	1	1	2	21	0.02	90.73	90.73				
type_document	5	6	3	5	6	6	1	1	1	2	1	1	1	21	0.02	90.75	90.75				
appli_mathemat	4	5	3	4	2	2	2	2	4	2	3	1	3	21	0.02	90.77	90.77				
creat_word	5	5	7	7	1	1	3	5	2	2	1	1	1	21	0.02	90.79	90.79				
decreas_number	4	5	3	5	3	4	4	4	2	2	1	1	1	21	0.02	90.81	90.81				
master_degre	5	5	2	2	3	3	3	5	5	5	1	1	1	21	0.02	90.82	90.82				
test_train	5	5	3	3	1	1	4	4	2	4	2	4	2	21	0.02	90.84	90.84				
text_evalu	5	5	4	4	1	1	3	3	2	6	2	2	2	21	0.02	90.86	90.86				
cosin_angl	4	4	7	7	4	4	3	3	2	2	1	1	1	21	0.02	90.88	90.88				
evalu_cluster	2	4	1	3	2	2	3	5	3	5	2	2	2	21	0.02	90.90	90.90				
evalu_lrec	4	4	5	7	1	1	1	1	3	7	1	1	1	21	0.02	90.91	90.91				
given_user	2	4	1	1	3	3	3	5	3	6	2	2	2	21	0.02	90.93	90.93				
includ_step	4	4	6	7	2	2	3	3	3	3	2	2	2	21	0.02	90.95	90.95				
likelihood_estim	3	4	4	4	1	1	5	9	2	2	1	1	1	21	0.02	90.97	90.97				
mine_icdm	2	4	3	3	3	5	5	5	1	1	2	3	3	21	0.02	90.99	90.99				
model_experi	2	4	1	1	1	1	3	3	4	11	1	1	1	21	0.02	91.01	91.01				
optim_number	3	4	1	1	1	1	4	9	2	2	2	4	21	0.02	91.02	91.02					
process_order	4	4	1	1	2	2	3	7	4	6	1	1	1	21	0.02	91.04	91.04				
queri_queri	3	4	1	1	1	1	8	9	1	1	2	5	21	0.02	91.06	91.06					
recent_studi	4	4	4	6	4	6	1	1	3	3	1	1	1	21	0.02	91.08	91.08				
similar_concept	3	4	4	4	2	2	2	3	8	1	1	1	1	21	0.02	91.10	91.10				
strip_program	4	4	5	5	5	5	2	2	3	4	1	1	1	21	0.02	91.12	91.12				
classifi_emot	1	3	1	4	1	2	1	2	3	6	1	4	21	0.02	91.13	91.13					
consid_word	3	3	4	5	2	2	4	6	4	4	1	1	1	21	0.02	91.15	91.15				

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
inform_featur	3	3	2	3	1	1	2	6	3	7	1	1	21	0	0	21	0	0	91.17		
measur_combin	2	3	3	4	4	5	3	3	1	1	1	5	21	0	0	21	0	0	91.19		
model_number	1	3	4	4	2	2	4	6	5	5	1	1	21	0	0	21	0	0	91.21		
refer_word	3	3	5	5	3	3	2	2	3	6	2	2	21	0	0	21	0	0	91.22		
techniqu_stem	2	3	2	2	3	4	2	2	4	9	1	1	21	0	0	21	0	0	91.24		
word_letter	1	3	5	11	2	2	1	1	3	3	1	1	21	0	0	21	0	0	91.26		
approach_present	2	2	3	3	1	2	3	5	2	6	2	3	21	0	0	21	0	0	91.28		
integr_data	2	2	1	1	6	8	1	1	5	8	1	1	21	0	0	21	0	0	91.30		
method_data	2	2	2	2	3	4	5	7	4	5	1	1	21	0	0	21	0	0	91.32		
model_present	2	2	3	4	3	3	2	2	5	7	3	3	21	0	0	21	0	0	91.33		
multi_dimension	1	2	4	5	5	10	1	2	1	1	1	1	21	0	0	21	0	0	91.35		
select_select	2	2	3	4	10	2	4	1	1	1	1	1	21	0	0	21	0	0	91.37		
system_abl	1	2	2	2	1	1	1	1	4	12	3	3	21	0	0	21	0	0	91.39		
text_exampl	2	2	5	3	3	3	3	5	5	3	3	3	21	0	0	21	0	0	91.41		
base_function	1	1	3	3	2	2	2	3	2	2	1	10	21	0	0	21	0	0	91.43		
develop_base	1	1	3	3	4	4	2	2	5	9	2	2	21	0	0	21	0	0	91.44		
emot_analysi	1	1	1	1	1	1	2	3	4	8	3	7	21	0	0	21	0	0	91.46		
mine_introduct	1	1	2	2	8	8	4	4	5	5	1	1	21	0	0	21	0	0	91.48		
morpholog_syntact	1	1	4	6	3	5	2	2	2	6	1	1	21	0	0	21	0	0	91.50		
score_evalu	1	1	1	2	3	4	9	1	3	3	4	4	21	0	0	21	0	0	91.52		
servic_name	1	10	1	1	1	1	1	1	3	1	4	4	20	0	0	20	0	0	91.53		
precis_rate	5	9	2	6	1	1	1	1	1	1	1	2	20	0	0	20	0	0	91.55		
order_compar	6	8	1	1	3	3	2	3	4	4	1	1	20	0	0	20	0	0	91.57		
similar_function	7	8	4	5	2	3	1	1	1	1	2	2	20	0	0	20	0	0	91.59		
step_algorithm	4	7	1	1	2	2	4	4	5	5	1	1	20	0	0	20	0	0	91.60		

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
neg_emot	3	6	2	4	1	1	3	5	1	1	1	1	3	20	0.02	91.62					
particular_category	5	6	1	1	3	5	2	4	1	2	1	2	20	0.02	91.64						
advanc_neural	2	5	3	3	2	2	2	2	5	7	1	1	20	0.02	91.66						
cluster_form	4	5	6	6	2	3	1	3	1	1	1	2	20	0.02	91.67						
html_http	2	5	3	4	1	2	2	3	3	4	1	2	20	0.02	91.69						
particular_document	5	5	5	7	2	3	2	2	2	2	1	1	20	0.02	91.71						
reduc_dimens	4	5	5	5	2	4	2	2	2	2	1	2	20	0.02	91.72						
stem_approach	2	5	4	4	2	5	3	3	1	2	1	1	20	0.02	91.74						
twitter_social	2	5	1	1	1	2	4	5	2	6	1	1	20	0.02	91.76						
accuraci_text	4	4	2	2	5	5	4	4	3	3	1	2	20	0.02	91.78						
learn_theori	2	4	2	2	1	1	3	3	5	6	1	4	20	0.02	91.79						
select_appropri	4	4	5	2	3	2	2	3	4	1	2	2	20	0.02	91.81						
task_document	3	4	3	4	4	4	4	4	3	3	1	1	20	0.02	91.83						
term_index	3	4	4	4	3	3	5	7	1	1	1	1	20	0.02	91.85						
text_model	3	4	1	1	2	2	5	9	1	1	1	3	20	0.02	91.86						
time_frame	3	4	5	5	3	3	2	2	3	5	1	1	20	0.02	91.88						
analysi_determin	3	3	4	4	2	2	3	5	5	5	1	1	20	0.02	91.90						
classifi_class	3	3	2	4	2	3	3	5	3	3	2	2	20	0.02	91.92						
creativ_common	2	3	1	1	2	2	4	4	3	8	1	2	20	0.02	91.93						
lower_valu	3	3	2	3	1	2	5	9	2	2	1	1	20	0.02	91.95						
match_algorithm	3	3	3	4	2	3	3	2	5	1	2	2	20	0.02	91.97						
problem_data	1	3	1	2	3	6	4	5	3	3	1	1	20	0.02	91.99						
techniqu_term	3	3	4	6	2	2	5	5	3	3	1	1	20	0.02	92.00						
word_algorithm	2	3	5	6	1	1	2	2	6	7	1	1	20	0.02	92.02						
class_cluster	2	2	2	2	1	2	1	4	3	9	1	1	20	0.02	92.04						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
evalu_topic	2	2	1	4	2	2	3	9	1	1	1	2	20	0.02	92.05						
process_describ	2	2	6	8	2	2	2	2	3	4	2	2	20	0.02	92.07						
system_inform	2	2	4	5	2	2	4	7	2	3	1	1	20	0.02	92.09						
tion_retriev	2	2	2	2	1	2	4	12	1	1	1	1	20	0.02	92.11						
total_score	1	2	1	1	1	1	4	5	2	10	1	1	20	0.02	92.12						
user_select	1	2	2	3	4	6	1	1	5	7	1	1	20	0.02	92.14						
word_defin	2	2	6	7	2	3	4	5	2	2	1	1	20	0.02	92.16						
word_find	2	2	8	8	2	3	5	5	1	1	1	1	20	0.02	92.18						
collect_us	1	1	2	2	4	4	5	6	3	5	2	2	20	0.02	92.19						
data_perform	1	1	2	2	1	1	7	9	5	5	2	2	20	0.02	92.21						
dice_similar	1	1	2	2	1	1	2	6	2	9	1	1	20	0.02	92.23						
formal_defin	1	1	4	4	2	3	3	9	2	2	1	1	20	0.02	92.25						
respons_time	1	1	3	5	1	1	1	1	4	8	1	4	20	0.02	92.26						
techniqu_order	1	1	2	2	4	4	6	6	4	6	1	1	20	0.02	92.28						
distribut_similar	1	11	2	2	2	1	1	2	2	1	1	1	19	0.02	92.30						
probabl_term	6	9	1	1	3	4	3	3	1	1	1	1	19	0.02	92.31						
document_assign	7	8	4	4	2	2	3	3	1	1	1	1	19	0.02	92.33						
leibler_diverg	4	7	1	1	3	7	1	1	1	2	1	1	19	0.02	92.35						
bucklei_term	6	6	4	4	4	2	2	2	2	1	1	1	19	0.02	92.36						
categor_comput	5	5	7	8	3	3	1	1	1	1	1	1	19	0.02	92.38						
collect_dataset	5	5	3	3	1	1	2	3	3	5	2	2	19	0.02	92.40						
introduct_modern	5	5	4	4	2	2	5	5	1	2	1	1	19	0.02	92.41						
keyword_arab	4	5	4	4	2	2	4	4	3	3	1	1	19	0.02	92.43						
search_us	4	5	2	2	3	3	2	5	3	3	1	1	19	0.02	92.45						
size_document	4	5	3	3	5	5	1	1	3	4	1	1	19	0.02	92.46						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
system_page	2	5	1	1	2	3	5	6	2	2	2	2	2	2	19	0.02	92.48				
time_document	5	5	2	2	6	6	3	4	1	1	1	1	1	1	19	0.02	92.49				
charact_number	4	4	3	3	1	1	4	4	6	6	1	1	1	1	19	0.02	92.51				
document_select	4	4	3	3	4	4	3	6	1	1	1	1	1	1	19	0.02	92.53				
effect_method	4	4	4	5	1	1	2	2	5	6	1	1	1	1	19	0.02	92.54				
languag_complex	4	4	1	1	4	4	7	7	2	2	1	1	1	1	19	0.02	92.56				
method_take	4	4	3	3	3	1	1	1	6	6	2	2	2	2	19	0.02	92.58				
signific_amount	3	4	2	2	1	2	2	3	5	5	2	3	19	0.02	92.59						
analysi_classif	3	3	2	3	2	2	4	4	4	4	5	1	2	19	0.02	92.61					
appli_comput	3	3	6	6	4	5	1	1	3	3	1	1	1	1	19	0.02	92.63				
document_obtain	2	3	4	5	3	3	3	4	1	1	1	3	3	3	19	0.02	92.64				
main_focu	3	3	6	6	1	1	5	5	3	3	1	1	1	1	19	0.02	92.66				
model_outperform	3	3	1	1	1	1	4	6	5	6	2	2	2	19	0.02	92.68					
probabl_class	2	3	5	7	3	4	1	1	3	1	1	1	1	1	19	0.02	92.69				
represent_method	2	3	3	8	4	4	1	2	1	1	1	1	1	1	19	0.02	92.71				
term_mean	2	3	4	4	3	3	5	6	1	1	1	1	2	1	19	0.02	92.73				
word_singl	3	3	2	2	7	8	4	4	1	1	1	1	1	1	19	0.02	92.74				
algorithm_present	2	2	5	7	1	1	4	4	3	3	2	2	2	19	0.02	92.76					
approach_comput	2	2	3	3	2	2	2	2	5	7	3	3	3	19	0.02	92.78					
corpu_includ	2	2	6	6	2	2	1	1	2	4	2	4	2	4	19	0.02	92.79				
data_analyz	2	2	4	4	4	1	1	3	7	1	1	1	1	1	19	0.02	92.81				
data_experi	2	2	6	6	3	4	2	2	4	4	1	1	1	1	19	0.02	92.82				
depend_word	1	2	4	5	2	2	3	5	3	4	1	1	1	1	19	0.02	92.84				
describ_method	2	2	6	7	5	5	2	2	1	2	1	1	1	1	19	0.02	92.86				
distribu tion	2	2	3	6	1	1	4	6	2	3	1	1	1	1	19	0.02	92.87				

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
frequenc_featur	2	2	4	4	2	2	4	6	3	4	1	1	19	0.02	92.89						
good_accuraci	2	2	2	2	1	2	2	2	4	8	1	3	19	0.02	92.91						
human_behavior	2	2	2	2	3	5	1	1	2	8	1	1	19	0.02	92.92						
lucen_apach	2	2	2	5	2	2	6	7	1	2	1	1	19	0.02	92.94						
main_advantag	2	2	4	4	1	1	2	4	5	7	1	1	19	0.02	92.96						
saudi_arabia	2	2	1	1	3	6	3	4	3	5	1	1	19	0.02	92.97						
tag_tag	2	2	2	2	3	3	5	10	1	1	1	1	19	0.02	92.99						
us_automat	2	2	3	5	5	6	2	2	2	3	1	1	19	0.02	93.01						
word_inform	2	2	5	5	3	3	5	5	3	3	1	1	19	0.02	93.02						
analysi_identifi	1	1	5	5	3	3	3	5	4	4	1	1	19	0.02	93.04						
common_attribut	1	1	2	4	1	1	4	4	3	8	1	1	19	0.02	93.06						
exAMPL_tweet	1	1	1	1	1	1	2	2	4	6	1	8	19	0.02	93.07						
model_find	1	1	2	2	2	2	6	8	4	4	2	2	19	0.02	93.09						
normal_term	1	1	2	4	2	2	3	4	2	7	1	1	19	0.02	93.11						
polar_text	1	1	1	1	1	2	2	2	2	12	1	1	19	0.02	93.12						
preci_sion	1	1	1	2	2	3	13	1	1	1	1	1	19	0.02	93.14						
system_includ	1	1	6	7	2	2	3	3	5	1	1	19	0.02	93.15							
text_therefor	1	1	4	4	3	3	4	4	2	4	2	3	19	0.02	93.17						
theori_appliC	1	1	3	4	2	2	1	1	4	9	2	2	19	0.02	93.19						
us_linguist	1	1	2	3	5	6	2	4	2	2	2	3	19	0.02	93.20						
word_correspond	1	1	2	3	3	2	2	3	6	3	5	19	0.02	93.22							
neg_train	3	8	1	1	1	1	3	3	4	1	1	18	0.02	93.24							
cluster_hierarch	1	6	2	3	2	2	3	3	3	1	1	18	0.02	93.25							
document_reduc	5	6	3	3	4	6	1	1	1	1	1	18	0.02	93.27							
index_databas	1	6	1	2	5	1	1	3	1	1	1	18	0.02	93.28							

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
stage_text	5	6	1	1	5	5	2	3	1	2	1	1	18	18	0.02	0.02	93.30	93.30			
class_repres	3	5	1	1	5	5	2	2	2	4	1	1	18	18	0.02	0.02	93.31	93.31			
cluster_evalu	4	5	1	2	1	1	2	4	1	2	2	4	18	18	0.02	0.02	93.33	93.33			
document_includ	4	5	5	5	3	3	1	1	3	3	1	1	18	18	0.02	0.02	93.35	93.35			
experiment_studi	3	5	2	2	2	3	6	1	1	2	1	2	18	18	0.02	0.02	93.36	93.36			
identifi_topic	4	5	3	3	4	5	2	2	1	2	1	1	18	18	0.02	0.02	93.38	93.38			
social_interact	2	5	2	3	1	1	4	5	3	3	1	1	18	18	0.02	0.02	93.39	93.39			
user_label	1	5	2	2	2	2	2	6	1	1	2	2	18	18	0.02	0.02	93.41	93.41			
vector_similar	4	5	1	1	3	3	4	7	1	1	1	1	18	18	0.02	0.02	93.42	93.42			
word_normal	5	5	4	4	2	2	4	5	1	1	1	1	18	18	0.02	0.02	93.44	93.44			
descend_order	4	4	4	4	1	1	4	6	2	2	1	1	18	18	0.02	0.02	93.46	93.46			
form_verb	4	4	3	3	5	6	1	1	1	3	1	1	18	18	0.02	0.02	93.47	93.47			
semantRepresent	3	4	2	6	1	1	3	5	1	1	1	1	18	18	0.02	0.02	93.49	93.49			
stem_gener	4	3	3	1	2	1	1	3	7	1	1	1	18	18	0.02	0.02	93.50	93.50			
stem_porter	4	4	2	3	2	2	2	2	6	6	1	1	18	18	0.02	0.02	93.52	93.52			
term_contain	4	4	2	3	2	2	5	6	2	2	1	1	18	18	0.02	0.02	93.53	93.53			
text_obtain	4	4	2	2	2	2	3	3	5	1	2	18	18	0.02	0.02	93.55	93.55				
us_languag	3	4	2	4	2	2	1	1	2	4	3	3	18	18	0.02	0.02	93.56	93.56			
us_queri	2	4	3	4	1	2	1	2	2	3	2	3	18	18	0.02	0.02	93.58	93.58			
document_content	3	3	4	5	2	3	4	5	1	1	1	1	18	18	0.02	0.02	93.60	93.60			
document_increas	2	3	3	3	2	2	4	4	2	4	1	2	18	18	0.02	0.02	93.61	93.61			
evalu_qualiti	3	3	1	1	3	3	2	2	4	7	2	2	18	18	0.02	0.02	93.63	93.63			
filter_us	3	3	2	2	1	1	5	5	3	6	1	1	18	18	0.02	0.02	93.64	93.64			
huge_number	3	3	5	5	1	2	1	1	5	6	1	1	18	18	0.02	0.02	93.66	93.66			
match_user	3	3	4	4	3	3	3	5	1	1	2	18	18	0.02	0.02	93.67	93.67				

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
remov_letter	3	3	8	1	1	2	2	3	1	1	18	0.02	93.69								
step_preprocess	3	3	4	1	1	2	2	4	6	2	2	18	0.02	93.71							
weight_score	2	3	1	1	4	8	2	4	1	1	18	0.02	93.72								
word_vocabulary	2	3	2	3	2	4	8	1	1	1	18	0.02	93.74								
avail_abl	1	2	1	1	3	4	4	6	3	3	2	2	18	0.02	93.75						
document_distribut	1	2	2	2	2	2	2	4	6	2	4	18	0.02	93.77							
extract_task	2	2	2	4	7	1	1	3	5	1	1	18	0.02	93.78							
imag_analysi	2	2	3	4	3	8	1	1	2	2	1	1	18	0.02	93.80						
languag_make	2	3	3	3	3	3	3	4	6	1	1	18	0.02	93.81							
obtain_cluster	2	2	3	7	2	2	4	2	2	1	1	18	0.02	93.83							
process_identifi	2	2	3	4	4	4	1	1	5	6	1	1	18	0.02	93.85						
significanti_reduc	2	2	3	5	5	4	4	2	3	1	1	18	0.02	93.86							
step_extract	2	2	5	6	3	6	1	1	2	2	1	1	18	0.02	93.88						
step_identifi	2	2	4	5	3	3	4	3	3	1	1	18	0.02	93.89							
system_term	2	2	4	4	2	2	5	5	3	3	1	2	18	0.02	93.91						
us_graph	2	2	3	6	2	2	2	4	4	1	2	18	0.02	93.92							
us_knowledg	2	2	4	6	8	2	2	1	1	1	18	0.02	93.94								
approach_machin	1	1	1	1	3	3	5	6	4	6	1	1	18	0.02	93.96						
independ_assumpt	1	1	4	5	1	1	5	6	3	4	1	1	18	0.02	93.97						
method_mean	1	1	3	3	1	1	3	5	3	5	3	3	18	0.02	93.99						
number_sampl	1	1	2	3	1	2	3	4	5	5	2	3	18	0.02	94.00						
origin_dataset	1	1	1	2	4	6	3	4	1	4	1	1	18	0.02	94.02						
problem_automat	1	1	4	4	5	6	3	3	2	2	1	2	18	0.02	94.03						
twitter_stream	1	1	4	7	2	2	2	3	5	1	1	18	0.02	94.05							
user_system	1	1	2	2	5	5	2	2	6	6	2	2	18	0.02	94.06						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
data_distribut	4	8	2	2	3	3	1	1	2	2	1	1	17	0.01	94.08						
document_call	4	6	4	4	1	1	1	1	2	2	3	3	17	0.01	94.09						
avail_document	4	5	2	2	4	4	3	3	2	2	1	1	17	0.01	94.11						
calcul_distanc	3	5	3	3	1	1	4	4	2	3	1	1	17	0.01	94.12						
input_train	3	5	3	3	1	1	1	1	4	4	2	3	17	0.01	94.14						
base_emot	1	4	1	2	2	6	1	1	2	2	2	2	17	0.01	94.15						
develop_evalu	1	4	4	4	1	1	4	5	2	2	1	1	17	0.01	94.17						
featur_evalu	2	4	1	1	1	1	3	3	3	5	3	3	17	0.01	94.18						
linear_function	4	4	2	2	2	4	2	4	2	2	1	1	17	0.01	94.20						
particular_domain	1	4	2	2	3	3	1	4	3	3	1	1	17	0.01	94.21						
randomli_chosen	4	4	2	2	1	1	3	3	3	5	2	2	17	0.01	94.23						
valu_measur	4	4	5	5	2	2	3	3	2	2	1	1	17	0.01	94.24						
algorithm_mine	3	3	2	3	1	1	2	8	1	1	1	1	17	0.01	94.26						
analyz_tweet	1	3	2	2	1	2	5	6	3	3	1	1	17	0.01	94.27						
imag_video	2	3	1	1	2	3	3	3	5	5	2	2	17	0.01	94.29						
measur_find	3	3	5	1	1	3	4	2	2	2	2	2	17	0.01	94.30						
number_retriev	3	3	1	1	3	4	5	7	1	1	1	1	17	0.01	94.32						
process_automat	3	3	3	4	2	2	4	4	3	3	1	1	17	0.01	94.33						
process_take	3	3	3	3	3	3	3	3	4	4	1	1	17	0.01	94.35						
requir_user	3	3	2	2	4	4	1	2	3	3	2	3	17	0.01	94.36						
rule_combin	2	3	2	2	1	1	1	1	7	1	3	17	0.01	94.37							
signific_word	2	3	4	4	3	3	2	5	1	1	1	1	17	0.01	94.39						
appli_stem	1	2	2	3	4	4	3	4	2	3	1	1	17	0.01	94.40						
applic_servic	2	2	2	7	1	1	2	2	4	4	1	1	17	0.01	94.42						
base_structur	2	2	2	3	2	4	1	2	5	5	1	1	17	0.01	94.43						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
calcu_late	1	2	4	4	2	3	2	6	1	1	1	1	1	1	1	1	17	0.01	94.45		
correspond_sentenc	2	2	3	3	2	2	1	1	3	5	2	4	17	0.01	94.46						
experi_text	2	2	4	4	4	4	2	2	3	3	2	2	17	0.01	94.48						
featur_calcul	2	2	1	3	2	3	4	5	3	3	1	1	17	0.01	94.49						
interact_user	2	2	2	3	1	1	1	2	3	5	1	4	17	0.01	94.51						
map_word	2	2	4	6	1	1	3	5	1	2	1	1	17	0.01	94.52						
order_understand	2	2	1	1	4	5	1	1	3	7	1	1	17	0.01	94.54						
search_retriev	2	2	3	3	4	4	4	5	2	2	1	1	17	0.01	94.55						
token_remov	2	2	5	5	2	2	4	4	1	1	1	3	17	0.01	94.57						
us_gener	1	2	3	3	3	3	3	3	4	4	2	2	17	0.01	94.58						
vector_train	2	2	2	2	4	4	3	3	3	3	2	3	17	0.01	94.60						
weight_obtain	1	2	2	2	3	1	2	3	7	1	1	3	17	0.01	94.61						
class_posit	1	1	2	2	1	1	1	3	2	2	1	8	17	0.01	94.63						
commun_comput	1	1	1	1	2	5	2	2	4	7	1	1	17	0.01	94.64						
consist_phase	1	1	1	2	3	4	3	3	4	6	1	1	17	0.01	94.66						
correctli_identifi	1	1	6	7	2	3	2	3	1	1	2	2	17	0.01	94.67						
document_form	1	1	4	4	5	5	4	4	1	1	2	17	0.01	94.68							
experi_dataset	1	1	3	6	1	1	1	1	5	7	1	1	17	0.01	94.70						
knowledg_resourc	1	1	2	3	5	10	1	1	1	1	1	1	17	0.01	94.71						
languag_social	1	1	3	7	3	3	2	2	2	1	2	17	0.01	94.73							
system_measur	1	1	4	4	2	4	4	4	2	3	1	1	17	0.01	94.74						
text_method	1	1	5	6	3	3	3	3	3	3	1	1	17	0.01	94.76						
word_chang	1	1	3	4	1	1	3	3	7	7	1	1	17	0.01	94.77						
engin_issu	4	8	1	1	2	3	1	1	2	2	1	1	16	0.01	94.79						
identifi_us	6	7	1	1	3	3	2	3	1	1	1	1	16	0.01	94.80						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
determin_number	6	6	3	3	2	3	1	1	1	2	1	1	16	16	0.01	0.01	94.81	94.81			
normal_word	6	6	1	1	2	2	4	4	2	2	1	1	16	16	0.01	0.01	94.83	94.83			
text_identifi	4	6	1	1	5	5	1	1	1	2	1	1	16	16	0.01	0.01	94.84	94.84			
world_congress	2	6	2	2	1	1	1	1	3	5	1	1	16	16	0.01	0.01	94.86	94.86			
comparison_method	3	5	4	5	3	3	1	1	1	1	1	1	16	16	0.01	0.01	94.87	94.87			
document_improv	5	5	1	2	2	2	3	4	1	1	1	2	16	16	0.01	0.01	94.88	94.88			
precis_calcul	5	5	1	1	2	2	4	6	1	1	1	1	16	16	0.01	0.01	94.90	94.90			
stem_document	5	5	2	2	2	2	5	5	1	1	1	1	16	16	0.01	0.01	94.91	94.91			
centroid_cluster	2	4	3	3	1	2	1	1	3	5	1	1	16	16	0.01	0.01	94.93	94.93			
data_approach	3	4	4	4	2	2	3	3	2	2	1	1	16	16	0.01	0.01	94.94	94.94			
indic_word	2	3	2	2	3	4	4	4	2	2	1	1	16	16	0.01	0.01	94.95	94.95			
interest_user	2	3	4	4	1	2	1	1	3	5	1	1	16	16	0.01	0.01	94.97	94.97			
punctuat_remov	3	3	1	1	1	1	3	3	5	7	1	1	16	16	0.01	0.01	94.98	94.98			
set_featur	3	3	2	3	2	3	1	2	3	4	1	1	16	16	0.01	0.01	95.00	95.00			
twitter_facebook	2	3	2	3	1	1	4	5	3	3	1	1	16	16	0.01	0.01	95.01	95.01			
variou_techinu	3	3	2	2	5	5	3	3	2	2	1	1	16	16	0.01	0.01	95.02	95.02			
word_ad	2	3	1	1	3	4	2	2	3	5	1	1	16	16	0.01	0.01	95.04	95.04			
accu_raci	2	2	2	2	3	3	2	3	3	2	3	3	16	16	0.01	0.01	95.05	95.05			
algorithm_accuraci	2	2	3	3	3	4	1	1	4	5	1	1	16	16	0.01	0.01	95.06	95.06			
algorithm_consist	2	2	4	5	2	2	2	4	4	4	1	1	16	16	0.01	0.01	95.08	95.08			
algorithm_naiv	2	2	3	4	1	1	1	1	6	7	1	1	16	16	0.01	0.01	95.09	95.09			
collect_collect	2	2	1	1	3	4	1	1	2	6	1	2	16	16	0.01	0.01	95.11	95.11			
compar_us	2	2	1	1	3	3	5	5	1	3	1	2	16	16	0.01	0.01	95.12	95.12			
comparison_document	2	2	3	3	4	5	3	3	1	2	2	2	16	16	0.01	0.01	95.13	95.13			
comparison_precis	2	2	2	2	1	1	5	7	1	3	1	1	16	16	0.01	0.01	95.15	95.15			

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
describ_process	2	2	4	5	1	1	4	4	2	3	1	1	16	0.01	95.16						
develop_develop	1	2	2	2	2	1	1	4	8	1	1	16	0.01	95.18							
equal_length	2	2	2	2	3	3	2	4	2	4	1	1	16	0.01	95.19						
featur_perform	2	2	3	3	1	1	6	6	1	1	1	3	16	0.01	95.20						
frequenc_corpu	1	2	1	1	1	1	4	10	1	1	1	1	16	0.01	95.22						
http_lucen	2	2	2	4	2	2	5	5	1	2	1	1	16	0.01	95.23						
keyword_queri	2	2	3	3	2	3	2	2	2	2	2	4	16	0.01	95.25						
measur_estim	1	2	1	1	2	2	1	7	3	3	1	1	16	0.01	95.26						
model_take	2	2	4	4	1	1	3	3	3	5	1	1	16	0.01	95.27						
obtain_word	2	2	1	2	2	3	4	5	2	2	2	2	16	0.01	95.29						
probabilist_classifi	2	2	1	2	2	3	4	5	1	1	2	3	16	0.01	95.30						
process_activ	2	2	2	5	5	1	2	1	1	1	1	1	16	0.01	95.31						
score_comput	2	2	2	2	3	3	5	7	1	1	1	1	16	0.01	95.33						
step_select	2	2	6	8	1	1	1	1	3	3	1	1	16	0.01	95.34						
system_learn	2	2	3	4	4	6	2	2	1	1	1	1	16	0.01	95.36						
term_relev	2	2	2	3	2	2	3	5	1	2	1	2	16	0.01	95.37						
word_structur	2	2	1	3	4	1	2	5	6	1	1	16	0.01	95.38							
word_type	2	2	3	5	2	2	4	4	2	2	1	1	16	0.01	95.40						
algorithm_classif	1	1	4	4	3	3	4	2	3	1	1	16	0.01	95.41							
base_mean	1	1	4	4	2	2	5	6	2	2	1	1	16	0.01	95.43						
clean_data	1	1	1	2	4	4	5	2	3	1	2	16	0.01	95.44							
document_creat	1	1	1	4	4	6	6	2	2	2	2	16	0.01	95.45							
document_remov	1	1	6	6	3	3	2	2	3	3	1	1	16	0.01	95.47						
extract_name	1	1	2	3	2	3	7	2	2	1	1	16	0.01	95.48							
func tion	1	1	1	2	3	2	3	4	7	1	1	16	0.01	95.50							

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
issn_issn	1	1	2	2	2	2	2	2	3	8	1	1	16	0.01	95.51						
matrix_term	1	1	3	4	1	1	3	6	2	3	1	1	16	0.01	95.52						
meaning_inform	1	1	3	3	3	3	2	2	4	6	1	1	16	0.01	95.54						
method_detect	1	1	1	1	3	4	6	7	2	2	1	1	16	0.01	95.55						
output_process	1	1	1	3	3	3	1	2	3	5	2	2	16	0.01	95.57						
system_avail	1	1	2	2	1	1	3	3	3	5	2	4	16	0.01	95.58						
system_detect	1	1	3	1	2	4	4	4	4	1	2	16	0.01	95.59							
text_sourc	1	1	1	1	3	4	3	3	3	6	1	1	16	0.01	95.61						
time_base	1	1	2	3	2	2	3	5	2	4	1	1	16	0.01	95.62						
remov_step	3	7	1	1	1	2	2	1	1	3	3	3	15	0.01	95.63						
parent_node	3	6	2	3	1	2	1	2	1	1	1	1	15	0.01	95.65						
perform_obtain	3	6	1	1	2	2	3	3	2	2	1	1	15	0.01	95.66						
word_lead	2	6	3	4	2	2	1	1	1	1	1	1	15	0.01	95.67						
appear_text	5	1	2	2	2	1	1	4	4	1	1	1	15	0.01	95.69						
cluster_repres	3	5	2	3	2	2	2	2	1	2	1	1	15	0.01	95.70						
inform_servic	1	5	1	1	1	1	3	4	4	1	1	1	15	0.01	95.71						
predefin_class	3	5	1	1	1	4	5	1	1	2	15	0.01	95.72								
applic_inform	4	4	2	2	1	1	5	5	2	2	1	1	15	0.01	95.74						
becom_increasingli	4	4	1	2	2	2	3	4	1	2	1	1	15	0.01	95.75						
classif_data	2	4	3	4	1	1	3	3	1	1	2	2	15	0.01	95.76						
inform_social	1	4	2	3	2	3	1	2	2	2	1	1	15	0.01	95.78						
lower_number	4	4	2	2	2	4	3	3	1	1	1	1	15	0.01	95.79						
techniqu_featur	2	4	2	2	4	4	1	1	3	3	1	1	15	0.01	95.80						
affix_word	3	3	1	1	2	3	2	3	3	3	1	2	15	0.01	95.82						
classif_arab	3	3	2	4	1	1	2	2	3	4	1	1	15	0.01	95.83						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
dataset_avail	2	3	1	2	1	2	2	3	3	3	1	2	15	0.01	95.84						
dataset_creat	3	3	2	2	1	2	3	5	2	2	1	1	15	0.01	95.86						
featur_semant	2	3	3	4	2	2	3	4	1	1	1	1	15	0.01	95.87						
function_similar	3	3	3	1	1	3	3	2	2	1	3	3	15	0.01	95.88						
perform_step	3	3	4	4	3	3	1	1	2	2	2	2	15	0.01	95.89						
repres_singl	3	3	1	1	3	3	2	2	3	5	1	1	15	0.01	95.91						
step_gener	3	3	3	5	5	1	1	1	2	1	1	1	15	0.01	95.92						
time_number	3	3	1	2	2	1	1	4	6	1	1	1	15	0.01	95.93						
token_us	2	3	2	2	3	3	2	2	2	2	2	3	15	0.01	95.95						
vector_number	3	3	1	1	1	1	4	6	1	1	2	3	15	0.01	95.96						
approach_pattern	2	2	3	5	2	4	2	2	1	1	1	1	15	0.01	95.97						
contain_topic	2	2	4	4	3	3	1	3	1	1	2	2	15	0.01	95.99						
content_type	1	2	1	2	2	1	4	2	4	1	1	1	15	0.01	96.00						
degree_similar	1	2	6	7	1	1	2	2	2	2	1	1	15	0.01	96.01						
form_inform	2	2	1	1	3	3	4	4	1	3	1	2	15	0.01	96.02						
improv_us	2	2	1	1	1	1	5	5	5	1	1	1	15	0.01	96.04						
inform_form	2	2	2	6	6	2	2	1	2	1	1	1	15	0.01	96.05						
interest_pattern	2	2	4	6	3	3	1	1	1	2	1	1	15	0.01	96.06						
model_produc	2	2	2	3	1	1	1	1	3	7	1	1	15	0.01	96.08						
present_text	2	2	2	5	5	2	2	3	3	1	1	1	15	0.01	96.09						
score_precis	2	2	2	4	5	3	4	1	1	1	1	1	15	0.01	96.10						
stem_exampl	2	2	2	3	3	5	1	1	2	2	2	2	15	0.01	96.12						
text_appli	2	2	1	2	1	1	3	4	4	4	2	2	15	0.01	96.13						
valu_chosen	1	2	1	1	3	3	2	2	3	6	1	1	15	0.01	96.14						
automat_emot	1	1	1	5	1	2	2	5	1	1	1	1	15	0.01	96.15						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
base_perform	1	1	4	4	1	1	1	1	2	6	2	2	15	0.01	96.17						
cluster_topic	1	1	3	3	3	3	2	2	1	1	3	5	15	0.01	96.18						
contain_specif	1	1	1	1	2	2	3	3	5	7	1	1	15	0.01	96.19						
data_describ	1	1	4	4	2	2	4	6	1	1	1	1	15	0.01	96.21						
data_estim	1	1	2	2	3	2	3	2	5	1	1	15	0.01	96.22							
data_user	1	1	1	1	1	1	3	2	2	6	6	1	2	15	0.01	96.23					
electron_commun	1	1	1	1	2	5	3	5	2	2	1	1	15	0.01	96.25						
exist_techniqu	1	1	1	1	3	3	2	3	3	5	1	2	15	0.01	96.26						
frequenc_text	1	1	2	3	3	3	2	2	5	5	1	1	15	0.01	96.27						
languag_stem	1	1	3	3	2	3	3	4	3	3	1	1	15	0.01	96.28						
method_topic	1	1	1	1	2	2	3	5	3	4	2	2	15	0.01	96.30						
model_increas	1	1	1	1	2	2	4	5	1	5	1	1	15	0.01	96.31						
object_base	1	1	2	2	2	2	3	4	5	5	1	1	15	0.01	96.32						
produc_cluster	1	1	3	3	2	6	1	3	1	1	1	1	15	0.01	96.34						
rela_tionship	1	1	3	4	3	6	2	2	1	1	1	1	15	0.01	96.35						
signific_number	1	1	2	3	1	1	1	1	5	7	1	2	15	0.01	96.36						
similar_semant	1	1	4	4	1	3	3	4	1	2	1	1	15	0.01	96.38						
system_creat	1	1	2	2	4	4	1	1	3	6	1	1	15	0.01	96.39						
time_accuraci	1	1	1	1	2	3	2	6	2	3	1	1	15	0.01	96.40						
topic_us	1	1	2	2	1	1	3	5	2	2	3	4	15	0.01	96.42						
train_word	1	1	1	2	1	2	3	3	2	2	3	5	15	0.01	96.43						
word_valu	1	1	2	3	1	3	2	2	3	3	1	3	15	0.01	96.44						
semant_concept	1	8	1	1	1	1	1	1	1	1	2	14	0.01	96.45							
languag_form	2	6	1	1	1	3	3	2	2	1	1	14	0.01	96.47							
stemmer_compar	2	6	3	3	1	2	1	1	1	1	1	14	0.01	96.48							

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
distribut_class	2	5	1	1	2	2	1	1	3	3	2	2	14	0.01	96.49						
binari_valu	4	4	1	1	1	1	1	1	5	5	1	2	14	0.01	96.50						
consid_number	3	4	3	4	2	2	2	1	1	1	1	1	14	0.01	96.51						
document_therefor	4	4	4	4	1	1	2	2	2	2	1	1	14	0.01	96.53						
gener_train	1	4	4	4	1	1	1	1	3	3	1	1	14	0.01	96.54						
higher_weight	3	4	1	1	3	3	3	4	1	1	1	1	14	0.01	96.55						
method_present	2	4	3	3	3	3	1	1	2	2	1	1	14	0.01	96.56						
word_prepot	2	4	2	2	4	4	1	1	2	2	1	1	14	0.01	96.57						
approach_select	3	2	2	1	2	2	2	2	3	2	2	2	14	0.01	96.59						
assign_cluster	3	2	3	2	2	1	2	1	1	1	1	3	14	0.01	96.60						
cluster_compar	3	2	2	2	1	1	3	1	5	1	1	1	14	0.01	96.61						
form_form	3	3	1	2	3	3	3	3	2	2	1	1	14	0.01	96.62						
grow_rapidli	3	3	2	2	3	3	3	3	1	2	1	1	14	0.01	96.64						
matrix_contain	2	3	1	1	2	3	1	1	4	5	1	1	14	0.01	96.65						
method_semant	2	3	2	3	1	1	2	2	2	4	1	1	14	0.01	96.66						
term_identifi	1	3	1	1	2	6	1	1	2	2	1	1	14	0.01	96.67						
text_present	2	3	1	1	3	3	1	1	3	5	1	1	14	0.01	96.68						
topic_similar	1	3	2	2	1	6	1	1	1	1	1	1	14	0.01	96.70						
vector_input	3	3	1	1	1	1	2	6	2	2	1	1	14	0.01	96.71						
analysi_comput	2	2	3	3	4	4	1	1	1	2	2	2	14	0.01	96.72						
analysi_problem	1	2	1	1	4	4	2	3	3	3	1	1	14	0.01	96.73						
approach_compar	2	2	3	3	1	2	1	1	4	5	1	1	14	0.01	96.74						
emerg_technolog	2	2	4	4	2	2	1	1	4	4	1	1	14	0.01	96.76						
exist_algorithm	2	2	3	4	2	2	1	3	1	1	1	2	14	0.01	96.77						
graph_model	2	2	6	7	2	2	1	1	1	1	1	1	14	0.01	96.78						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
luhn_automat	2	2	2	7	1	1	1	1	2	2	1	1	14	14	0.01	0.01	96.79	96.79			
method_construct	2	2	4	6	2	2	2	2	1	1	1	1	14	14	0.01	0.01	96.81	96.81			
order_measur	2	2	2	2	2	2	2	2	3	5	1	1	14	14	0.01	0.01	96.82	96.82			
perform_fold	2	2	1	1	2	2	3	7	1	1	1	1	14	14	0.01	0.01	96.83	96.83			
remov_nois	2	2	1	1	3	3	3	5	1	1	2	2	14	14	0.01	0.01	96.84	96.84			
similar_approach	2	2	1	1	2	2	5	7	1	1	1	1	14	14	0.01	0.01	96.85	96.85			
system_refer	2	2	2	2	4	4	1	1	3	4	1	1	14	14	0.01	0.01	96.87	96.87			
tool_provid	1	2	3	5	1	1	3	4	1	1	1	1	14	14	0.01	0.01	96.88	96.88			
transact_pattern	2	2	1	1	1	1	2	4	5	5	1	1	14	14	0.01	0.01	96.89	96.89			
analysi_knowledg	1	1	2	2	1	1	4	4	5	5	1	1	14	14	0.01	0.01	96.90	96.90			
base_appli	1	1	3	3	1	1	3	4	4	4	1	1	14	14	0.01	0.01	96.92	96.92			
base_rank	1	1	2	2	1	1	3	5	3	4	1	1	14	14	0.01	0.01	96.93	96.93			
classifi_term	1	1	1	2	3	4	2	3	3	3	1	1	14	14	0.01	0.01	96.94	96.94			
crucial_role	1	1	1	1	2	3	2	4	4	4	1	1	14	14	0.01	0.01	96.95	96.95			
featur_learn	1	1	3	3	2	2	3	5	2	2	1	1	14	14	0.01	0.01	96.96	96.96			
field_data	1	1	3	3	2	2	3	3	4	4	1	1	14	14	0.01	0.01	96.98	96.98			
function_defin	1	1	4	5	1	1	4	4	2	2	1	1	14	14	0.01	0.01	96.99	96.99			
gener_architectur	1	1	3	3	2	3	3	5	1	1	1	1	14	14	0.01	0.01	97.00	97.00			
good_featur	1	1	1	1	2	2	3	7	1	1	1	2	14	14	0.01	0.01	97.01	97.01			
lemmat_word	1	1	1	1	5	5	3	5	1	1	1	1	14	14	0.01	0.01	97.02	97.02			
mathemat_scienc	1	1	1	1	3	3	2	2	2	2	1	5	14	14	0.01	0.01	97.04	97.04			
media_content	1	1	1	2	1	1	2	2	4	7	1	1	14	14	0.01	0.01	97.05	97.05			
model_machin	1	1	2	2	2	2	2	2	4	6	1	1	14	14	0.01	0.01	97.06	97.06			
morpho_syntact	1	1	2	2	4	1	4	2	2	1	1	14	14	0.01	0.01	97.07	97.07				
number_attribut	1	1	2	2	1	1	2	5	4	4	1	1	14	14	0.01	0.01	97.09	97.09			

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
number_concept	1	1	3	6	1	1	1	1	3	3	1	2	14	0.01	97.10						
perform_dataset	1	1	1	1	2	2	4	6	2	2	2	2	14	0.01	97.11						
similar_group	1	1	5	7	1	1	3	3	1	1	1	1	14	0.01	97.12						
simpl_probabilist	1	1	1	1	2	2	4	6	3	3	1	1	14	0.01	97.13						
solv_issu	1	1	2	3	1	1	2	2	2	4	3	3	14	0.01	97.15						
split_text	1	1	2	3	1	2	2	3	4	4	4	1	14	0.01	97.16						
step_find	1	1	5	5	1	1	2	2	3	3	2	2	14	0.01	97.17						
stochast_gradient	1	1	2	6	2	2	2	2	1	2	1	1	14	0.01	97.18						
text_step	1	1	4	6	1	1	3	3	2	2	1	1	14	0.01	97.19						
third_type	1	1	1	1	1	1	3	3	4	2	4	1	14	0.01	97.21						
type_system	1	1	2	2	1	1	2	6	2	3	1	1	14	0.01	97.22						
cluster_correspond	4	6	1	2	1	1	2	2	1	1	1	1	13	0.01	97.23						
compar_origin	4	6	1	1	1	2	1	1	2	2	1	1	13	0.01	97.24						
sequenc_model	1	6	1	2	1	1	1	1	2	2	1	1	13	0.01	97.25						
rule_defin	3	5	1	1	2	2	1	2	2	2	1	1	13	0.01	97.26						
correspond_featur	3	4	1	2	2	2	2	2	2	2	1	1	13	0.01	97.28						
process_search	4	4	1	1	1	1	3	5	1	1	1	1	13	0.01	97.29						
therefor_develop	4	4	2	2	1	1	1	1	4	4	1	1	13	0.01	97.30						
word_indic	3	4	2	2	1	1	1	1	3	3	2	2	13	0.01	97.31						
catégori_us	3	3	3	3	1	2	1	1	1	1	1	1	13	0.01	97.32						
classif_new	1	3	2	2	3	3	2	2	1	2	1	1	13	0.01	97.33						
correspond_topic	2	3	3	3	2	2	3	3	1	1	1	1	13	0.01	97.34						
dictionari_dictionari	3	3	2	2	2	2	3	3	2	2	1	1	13	0.01	97.35						
document_normal	3	3	3	3	4	1	1	1	1	1	1	1	13	0.01	97.37						
engin_retriev	3	3	2	2	1	1	1	1	1	5	1	13	0.01	97.38							

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
inquiri_word	3	3	1	1	3	4	2	2	1	1	2	2	13	0.01	97.39						
remov_arab	3	3	2	3	1	2	2	2	1	1	13	0.01	97.40								
requir_addit	3	3	1	1	2	2	3	4	1	1	2	2	13	0.01	97.41						
step_token	2	3	2	2	1	1	3	3	2	2	2	2	13	0.01	97.42						
us_normal	3	3	1	1	2	2	4	4	1	1	2	2	13	0.01	97.43						
alphabet_charact	2	2	1	2	3	4	3	3	1	1	1	1	13	0.01	97.44						
base_implement	2	2	4	5	1	1	1	1	3	3	1	1	13	0.01	97.46						
base_pattern	1	2	1	1	2	4	1	1	3	3	1	2	13	0.01	97.47						
base_probabil	2	2	2	1	1	2	2	2	3	5	1	1	13	0.01	97.48						
case_text	2	2	2	2	1	1	1	1	6	6	1	1	13	0.01	97.49						
charact_punctuat	2	2	3	4	1	1	2	2	3	3	1	1	13	0.01	97.50						
engin_inform	2	2	2	1	1	2	2	2	4	4	2	2	13	0.01	97.51						
extract_phrase	2	2	1	1	2	5	2	2	1	2	1	1	13	0.01	97.52						
initi_step	2	2	2	3	3	3	1	2	1	2	1	1	13	0.01	97.54						
measur_qualiti	2	2	2	4	4	2	2	2	2	2	1	1	13	0.01	97.55						
method_effect	2	2	2	2	2	3	3	3	3	1	1	1	13	0.01	97.56						
model_calcul	2	2	3	1	1	1	1	1	2	4	4	4	13	0.01	97.57						
particular_case	1	2	2	2	3	4	2	2	2	1	1	1	13	0.01	97.58						
rapid_develop	2	2	1	1	2	2	1	2	3	5	1	1	13	0.01	97.59						
string_number	1	2	3	7	1	1	1	1	1	1	1	1	13	0.01	97.60						
system_make	2	2	2	3	3	1	1	1	1	2	2	2	13	0.01	97.61						
toulois_franc	2	2	3	4	3	4	1	1	1	1	1	1	13	0.01	97.63						
us_resourc	2	2	2	2	1	1	2	2	4	5	1	1	13	0.01	97.64						
valu_model	2	2	2	1	1	4	5	1	2	1	1	1	13	0.01	97.65						
vector_length	2	2	1	2	1	1	3	5	2	2	1	1	13	0.01	97.66						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
word_porter	2	2	3	3	2	2	2	2	3	3	1	1	13	0.01	97.67						
approach_found	1	1	1	1	2	2	3	3	2	4	2	2	13	0.01	97.68						
call_term	1	1	2	2	6	6	1	1	1	1	2	2	13	0.01	97.69						
classifi_decis	1	1	2	2	2	2	3	3	2	4	1	1	13	0.01	97.70						
content_tweet	1	1	1	1	1	2	3	3	4	4	1	2	13	0.01	97.72						
databas_commun	1	1	3	3	2	3	4	4	1	1	1	1	13	0.01	97.73						
document_specif	1	1	2	2	1	1	3	5	3	3	1	1	13	0.01	97.74						
human_social	1	1	2	3	2	4	3	3	1	1	1	1	13	0.01	97.75						
inform_analysi	1	1	2	2	3	2	2	2	3	4	1	1	13	0.01	97.76						
linguist_volum	1	1	5	5	4	4	1	1	1	1	1	1	13	0.01	97.77						
method_case	1	1	3	1	1	2	2	2	4	5	1	1	13	0.01	97.78						
model_thu	1	1	2	4	1	1	1	1	3	4	2	2	13	0.01	97.79						
page_contain	1	1	3	4	1	1	3	3	2	3	1	1	13	0.01	97.81						
partial_support	1	1	2	2	1	2	2	2	4	5	1	1	13	0.01	97.82						
plai_crucial	1	1	1	1	2	3	1	3	4	4	1	1	13	0.01	97.83						
problem_includ	1	1	3	3	1	1	2	3	2	4	1	1	13	0.01	97.84						
scienc_softwar	1	1	2	2	1	1	4	6	1	1	1	1	13	0.01	97.85						
step_approach	1	1	1	1	1	1	3	7	2	2	1	1	13	0.01	97.86						
step_featur	1	1	1	1	1	1	2	6	3	3	1	1	13	0.01	97.87						
studi_comput	1	1	2	2	1	1	2	7	1	1	1	1	13	0.01	97.88						
system_capabl	1	1	2	2	4	1	1	1	1	2	4	1	13	0.01	97.90						
system_project	1	1	1	1	1	5	5	3	3	2	2	13	0.01	97.91							
techniqu_help	1	1	2	2	1	1	2	3	5	5	1	1	13	0.01	97.92						
techniqu_perform	1	1	2	2	3	3	3	3	3	1	1	13	0.01	97.93							
text_twitter	1	1	1	2	1	1	2	4	6	1	1	13	0.01	97.94							

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
time_exampl	1	1	2	2	2	2	3	3	4	4	1	1	13	0.01	97.95						
tool_gener	1	1	1	1	3	3	3	3	2	4	1	1	13	0.01	97.96						
us_preprocess	1	1	1	1	1	1	3	3	4	6	1	1	13	0.01	97.98						
vector_contain	1	1	1	1	2	2	5	5	2	3	1	1	13	0.01	97.99						
document_phrase	1	5	1	1	3	3	1	1	1	1	1	1	12	0.01	98.00						
text_vector	4	5	2	2	2	2	1	1	1	1	1	1	12	0.01	98.01						
algorithm_given	3	4	1	2	1	1	1	1	2	2	2	2	12	0.01	98.02						
method_word	4	4	3	3	2	2	1	1	1	1	1	1	12	0.01	98.03						
problem_word	3	4	2	2	2	2	1	1	1	1	2	2	12	0.01	98.04						
spend_time	3	4	1	1	1	1	2	2	3	3	1	1	12	0.01	98.05						
state_model	1	4	1	1	1	2	1	1	3	3	1	1	12	0.01	98.06						
combin_term	3	3	3	3	2	2	2	2	1	1	1	1	12	0.01	98.07						
effici_search	3	3	1	2	1	1	1	1	2	2	1	3	12	0.01	98.08						
enorm_amount	2	3	1	1	2	2	1	1	4	4	1	1	12	0.01	98.09						
further_increas	3	3	4	4	1	2	1	1	1	1	1	1	12	0.01	98.10						
model_addit	3	3	2	2	2	2	2	1	1	2	2	2	12	0.01	98.11						
model_requir	3	3	1	1	2	2	2	1	3	1	1	12	0.01	98.12							
select_topic	3	3	1	1	2	2	2	1	1	2	3	12	0.01	98.13							
term_search	1	3	2	3	2	2	1	2	1	1	1	12	0.01	98.14							
test_compar	3	3	2	3	1	1	2	2	2	1	1	12	0.01	98.15							
addit_word	2	2	3	4	1	1	2	2	1	1	1	12	0.01	98.16							
analysi_applic	2	2	1	1	3	3	1	1	4	4	1	1	12	0.01	98.17						
approach_reli	1	2	3	4	1	1	1	1	3	3	1	1	12	0.01	98.18						
databas_search	1	2	2	3	2	2	3	1	1	1	1	12	0.01	98.19							
elimin_stem	2	2	3	3	3	2	2	1	1	1	1	12	0.01	98.21							

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
eval_uation	2	2	1	1	1	1	3	3	2	4	1	1	12	0.01	98.22						
identifi_similar	2	2	2	3	2	2	2	2	2	1	1	12	0.01	98.23							
knowledg_document	2	2	3	3	2	3	2	2	1	1	1	12	0.01	98.24							
network_machin	2	2	1	1	1	1	2	2	3	5	1	1	12	0.01	98.25						
split_data	1	2	3	4	1	1	3	3	1	1	1	1	12	0.01	98.26						
steinbach_karypi	1	2	2	3	3	3	2	2	1	1	1	1	12	0.01	98.27						
store_file	1	2	1	3	2	4	1	1	1	1	1	1	12	0.01	98.28						
topic_exampl	2	2	3	3	1	2	2	3	1	1	1	1	12	0.01	98.29						
user_data	2	2	1	1	1	1	3	3	3	4	1	1	12	0.01	98.30						
valu_posit	2	2	1	1	1	1	2	2	5	5	1	1	12	0.01	98.31						
accord_word	1	1	3	3	3	3	2	3	1	1	1	1	12	0.01	98.32						
algorithm_determin	1	1	2	2	2	2	2	2	3	4	1	1	12	0.01	98.33						
anger_fear	1	1	2	3	1	2	1	1	3	3	1	2	12	0.01	98.34						
approach_consist	1	1	2	2	2	2	3	3	2	3	1	1	12	0.01	98.35						
approach_outperform	1	1	1	1	1	1	3	5	1	2	2	2	12	0.01	98.36						
candid_gener	1	1	1	1	1	1	3	6	1	2	1	1	12	0.01	98.37						
choos_number	1	1	2	2	1	1	3	5	1	1	1	2	12	0.01	98.38						
collect_period	1	1	3	3	2	2	1	1	3	3	2	2	12	0.01	98.39						
compar_number	1	1	2	2	3	3	2	2	3	3	1	1	12	0.01	98.40						
construct_graph	1	1	2	4	1	3	1	1	2	1	1	12	0.01	98.41							
count_time	1	1	1	2	6	1	1	1	1	2	1	12	0.01	98.42							
descrip_tion	1	1	1	2	3	2	3	2	2	2	2	12	0.01	98.43							
design_algorithm	1	1	2	2	5	5	2	2	1	1	1	12	0.01	98.44							
document_view	1	1	4	4	1	3	3	1	1	2	2	12	0.01	98.46							
extract_textual	1	1	1	3	3	4	5	1	1	1	1	12	0.01	98.47							

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
featur_preprocess	1	1	1	1	1	1	2	4	4	4	1	1	12	0.01	98.48						
filter_step	1	1	2	2	1	1	3	3	2	2	1	3	12	0.01	98.49						
help_classifi	1	1	1	2	1	1	2	2	4	5	1	1	12	0.01	98.50						
independ_given	1	1	2	2	1	1	1	2	4	4	1	2	12	0.01	98.51						
knowledg_sourc	1	1	3	3	2	2	2	2	3	3	1	1	12	0.01	98.52						
label_class	1	1	3	3	1	1	2	2	3	3	1	2	2	2	2	12	0.01	98.53			
method_produc	1	1	4	4	1	1	3	3	1	1	1	2	12	0.01	98.54						
overall_score	1	1	1	1	1	1	5	3	3	1	1	1	12	0.01	98.55						
process_human	1	1	4	4	1	1	1	1	3	3	2	2	12	0.01	98.56						
step_construct	1	1	3	3	2	2	1	1	4	4	1	1	12	0.01	98.57						
strength_weak	1	1	1	1	4	6	1	1	1	2	1	1	12	0.01	98.58						
test_purpos	1	1	2	2	2	2	3	4	2	2	1	1	12	0.01	98.59						
us_extern	1	1	2	2	1	1	4	4	1	1	2	3	12	0.01	98.60						
word_divid	1	1	2	2	3	1	1	3	3	1	2	12	0.01	98.61							
word_system	1	1	2	2	3	3	1	1	4	4	1	1	12	0.01	98.62						
topic_categor	4	5	1	1	1	1	1	2	1	1	1	1	11	0.01	98.63						
consid_time	3	3	2	2	1	1	1	1	3	3	1	1	11	0.01	98.64						
data_partit	2	3	2	2	2	2	1	2	1	1	1	1	11	0.01	98.65						
exist_document	3	3	1	1	2	2	2	2	2	1	1	1	11	0.01	98.66						
featur_name	2	3	1	1	1	1	2	2	3	3	1	1	11	0.01	98.67						
iter_step	1	3	3	4	1	1	1	1	1	1	1	1	11	0.01	98.68						
label_base	3	3	1	1	1	1	3	3	2	2	1	1	11	0.01	98.69						
media_platform	2	3	2	2	1	1	1	1	2	2	2	2	11	0.01	98.70						
method_keyword	3	3	2	2	2	1	1	1	1	2	2	2	11	0.01	98.71						
base_frequent	2	2	2	2	1	1	1	1	1	1	3	11	0.01	98.72							

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
cate_gori	1	2	1	1	2	2	3	3	1	1	2	2	11	11	0.01	0.01	98.73	98.73			
comparison_baselin	2	2	1	1	1	1	2	2	2	4	1	1	11	11	0.01	0.01	98.74	98.74			
comput_perform	2	2	3	3	2	2	2	2	1	1	1	1	11	11	0.01	0.01	98.75	98.75			
consid_case	2	2	1	1	1	1	1	1	4	4	1	2	11	11	0.01	0.01	98.76	98.76			
dataset_method	2	2	2	3	1	1	2	2	2	2	1	1	11	11	0.01	0.01	98.77	98.77			
distribut_represent	1	2	1	3	2	2	1	1	1	2	1	1	11	11	0.01	0.01	98.77	98.77			
introduc_concept	2	2	3	3	2	2	1	1	2	2	1	1	11	11	0.01	0.01	98.78	98.78			
level_document	2	2	1	2	1	1	1	2	3	3	1	1	11	11	0.01	0.01	98.79	98.79			
metric_text	2	2	2	2	2	2	3	3	1	1	1	1	11	11	0.01	0.01	98.80	98.80			
queri_gener	2	2	2	2	4	4	1	1	1	1	1	1	11	11	0.01	0.01	98.81	98.81			
support_grant	2	2	3	3	1	1	2	2	2	2	1	1	11	11	0.01	0.01	98.82	98.82			
user_perform	2	2	1	1	1	1	1	1	3	5	1	1	11	11	0.01	0.01	98.83	98.83			
variou_approach	2	2	1	1	4	4	2	2	1	1	1	1	11	11	0.01	0.01	98.84	98.84			
accuraci_number	1	1	2	3	1	1	2	2	2	2	2	2	11	11	0.01	0.01	98.85	98.85			
affect_user	1	1	1	1	1	1	1	1	4	4	1	3	11	11	0.01	0.01	98.86	98.86			
analysi_emot	1	1	2	2	1	1	2	2	3	4	1	1	11	11	0.01	0.01	98.87	98.87			
analysi_featur	1	1	1	3	1	1	3	3	1	3	3	1	2	11	0.01	0.01	98.88	98.88			
analysi_order	1	1	1	1	1	1	2	2	5	5	1	1	11	0.01	0.01	98.89	98.89				
averag_sentenc	1	1	1	4	1	1	1	1	2	2	1	2	11	0.01	0.01	98.90	98.90				
ategorii_tweet	1	1	1	1	1	1	2	4	2	2	1	2	11	0.01	0.01	98.91	98.91				
contain_singl	1	1	1	1	1	1	2	2	4	4	1	1	11	0.01	0.01	98.92	98.92				
discoveri_databas	1	1	2	2	3	3	2	3	1	1	1	1	11	0.01	0.01	98.93	98.93				
distanc_calcul	1	1	1	1	1	1	1	1	3	5	2	2	11	0.01	0.01	98.94	98.94				
experi_featur	1	1	2	2	1	1	3	3	1	3	1	1	11	0.01	0.01	98.95	98.95				
graph_structur	1	1	3	3	2	3	1	1	2	2	1	1	11	0.01	0.01	98.96	98.96				

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
increas_precis	1	1	3	3	2	3	1	1	2	2	1	1	11	11	0.01	0.01	98.97	98.97			
keyword_cluster	1	1	1	1	2	2	2	2	4	4	1	1	11	11	0.01	0.01	98.98	98.98			
level_system	1	1	1	1	1	1	1	1	3	3	1	4	11	11	0.01	0.01	98.99	98.99			
main_sourc	1	1	1	1	1	1	1	2	4	5	1	1	11	11	0.01	0.01	98.99	98.99			
neg_affect	1	1	2	3	1	2	2	2	2	2	1	1	11	11	0.01	0.01	99.00	99.00			
network_data	1	1	2	3	1	1	3	3	2	2	1	1	11	11	0.01	0.01	99.01	99.01			
order_base	1	1	1	3	1	1	2	2	2	2	2	2	11	11	0.01	0.01	99.02	99.02			
process_construct	1	1	2	2	3	3	1	2	2	2	1	1	11	11	0.01	0.01	99.03	99.03			
sampl_test	1	1	1	1	1	1	2	3	3	4	1	1	11	11	0.01	0.01	99.04	99.04			
step_build	1	1	1	1	2	2	3	3	3	3	1	1	11	11	0.01	0.01	99.05	99.05			
us_exampl	1	1	2	2	3	4	2	2	1	1	1	1	11	11	0.01	0.01	99.06	99.06			
user_give	1	1	1	1	2	3	1	1	1	1	1	3	11	11	0.01	0.01	99.07	99.07			
vector_calcul	1	1	5	5	1	1	1	1	1	1	2	2	11	11	0.01	0.01	99.08	99.08			
word_retriev	1	1	1	2	1	1	2	4	1	1	2	2	11	11	0.01	0.01	99.09	99.09			
written_java	1	1	1	1	1	1	3	3	3	3	2	2	11	11	0.01	0.01	99.10	99.10			
ad_word	3	3	1	1	2	2	1	1	1	1	2	2	10	10	0.01	0.01	99.11	99.11			
extern_sourc	3	3	2	2	1	1	1	1	2	1	1	10	10	0.01	0.01	99.12	99.12				
featur_posit	3	3	1	1	1	1	2	3	1	1	1	1	10	10	0.01	0.01	99.13	99.13			
overall_system	3	3	1	1	1	2	2	1	1	1	1	1	10	10	0.01	0.01	99.13	99.13			
stem_languag	3	3	2	2	1	1	2	2	1	1	1	1	10	10	0.01	0.01	99.14	99.14			
algorithm_consid	2	2	2	2	2	2	2	1	1	1	1	1	10	10	0.01	0.01	99.15	99.15			
automat_creation	2	2	2	2	2	2	1	1	2	2	1	1	10	10	0.01	0.01	99.16	99.16			
cluster_unsupervis	2	2	1	1	2	2	1	1	2	2	1	2	10	10	0.01	0.01	99.17	99.17			
dataset_compar	2	2	1	1	1	2	2	3	3	1	1	10	10	0.01	0.01	99.18	99.18				
describ_algorithm	2	2	1	1	1	2	2	2	3	1	1	10	10	0.01	0.01	99.19	99.19				

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
effici_cluster	1	2	3	3	1	2	1	1	1	1	1	1	1	1	1	10	0.01	99.20			
full_word	1	2	1	1	1	2	1	2	1	1	2	1	1	1	10	0.01	99.20				
model_human	2	2	1	1	1	1	1	1	3	4	1	1	1	1	10	0.01	99.21				
punctuat_stop	2	2	1	2	1	1	1	1	3	3	1	1	1	1	10	0.01	99.22				
rang_valu	2	2	1	1	1	1	1	1	4	1	1	1	1	1	10	0.01	99.23				
remov_frequent	2	2	2	2	2	2	1	1	1	1	2	2	2	2	10	0.01	99.24				
sampl_word	2	2	1	1	2	2	1	1	1	1	3	3	3	3	10	0.01	99.25				
time_text	2	2	1	2	2	2	1	1	1	1	1	2	1	2	10	0.01	99.26				
word_affect	2	2	1	1	2	3	1	1	1	2	1	1	1	1	10	0.01	99.26				
algorithm_obtain	1	1	2	2	3	3	1	1	1	1	1	1	2	1	10	0.01	99.27				
approach_provid	1	1	1	1	2	2	3	4	1	1	1	1	1	1	10	0.01	99.28				
calcul_step	1	1	1	1	2	2	3	3	2	2	1	1	1	1	10	0.01	99.29				
difficult_languag	1	1	3	3	1	1	1	1	3	1	1	1	1	1	10	0.01	99.30				
document_arab	1	1	2	2	1	1	2	3	1	1	2	2	2	2	10	0.01	99.31				
equat_calcul	1	1	1	2	2	2	2	2	1	1	1	2	1	2	10	0.01	99.32				
extract_variou	1	1	1	2	2	4	4	1	1	1	1	1	1	1	10	0.01	99.33				
famili_member	1	1	1	2	1	1	2	4	1	1	1	1	1	1	10	0.01	99.33				
index_base	1	1	2	4	1	1	2	2	1	1	1	1	1	1	10	0.01	99.34				
indic_cluster	1	1	1	2	1	2	1	1	2	1	2	1	2	1	10	0.01	99.35				
inform_becom	1	1	2	3	2	2	1	1	2	1	1	1	1	1	10	0.01	99.36				
manual_extract	1	1	2	2	1	1	3	3	1	2	1	1	1	1	10	0.01	99.37				
metric_base	1	1	1	3	1	1	3	3	1	1	1	1	1	1	10	0.01	99.38				
miller_wordnet	1	1	3	3	2	2	2	1	1	1	1	1	1	1	10	0.01	99.39				
perform_supervis	1	1	1	1	1	2	4	2	2	1	1	1	1	1	10	0.01	99.39				
process_design	1	1	3	4	1	1	1	2	1	1	1	1	1	1	10	0.01	99.40				

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
process_part	1	1	2	2	1	1	3	3	1	1	2	2	10	10	0.01	0.01	99.41				
score_method	1	1	2	4	1	1	2	2	1	1	1	1	10	10	0.01	0.01	99.42				
stream_text	1	1	2	3	3	3	1	1	1	1	1	1	10	10	0.01	0.01	99.43				
system_conclus	1	1	1	1	2	2	2	2	3	3	1	1	10	10	0.01	0.01	99.44				
test_split	1	1	2	2	1	1	2	2	2	3	1	1	10	10	0.01	0.01	99.45				
topic_cover	1	1	2	2	1	1	3	4	1	1	1	1	10	10	0.01	0.01	99.46				
uniqu_featur	1	1	2	2	1	1	2	2	2	3	1	1	10	10	0.01	0.01	99.46				
user_send	1	1	3	3	1	1	3	3	1	1	1	1	10	10	0.01	0.01	99.47				
predict_categori	4	4	1	1	1	1	1	1	1	1	1	1	9	9	0.01	0.01	99.48				
annual_symposium	3	3	1	1	1	1	1	1	1	2	2	1	1	9	9	0.01	0.01	99.49			
model_respect	1	3	1	1	1	1	2	2	1	1	1	1	9	9	0.01	0.01	99.50				
analysi_time	2	2	1	1	2	2	1	2	1	1	1	1	9	9	0.01	0.01	99.50				
approach_deal	2	2	1	1	1	2	2	2	1	1	1	1	9	9	0.01	0.01	99.51				
base_natur	2	2	1	1	3	3	1	1	1	1	1	1	9	9	0.01	0.01	99.52				
collect_user	1	2	1	1	1	2	2	1	1	2	2	1	9	9	0.01	0.01	99.53				
creation_literatur	2	2	2	1	1	1	2	1	1	2	1	1	9	9	0.01	0.01	99.54				
data_group	2	2	1	1	1	2	3	1	1	1	1	1	9	9	0.01	0.01	99.54				
document_pars	2	2	3	3	1	1	1	1	1	1	1	1	9	9	0.01	0.01	99.55				
exampl_queri	2	2	1	1	1	2	3	1	1	1	1	1	9	9	0.01	0.01	99.56				
normal_us	1	2	2	2	2	1	1	1	1	1	1	1	9	9	0.01	0.01	99.57				
topic_refer	2	2	1	1	3	3	1	1	1	1	1	1	9	9	0.01	0.01	99.57				
complet_text	1	1	1	1	1	1	2	2	3	1	1	1	9	9	0.01	0.01	99.58				
context_process	1	1	2	3	1	1	2	2	1	1	1	1	9	9	0.01	0.01	99.59				
correl_topic	1	1	1	3	1	1	2	1	1	1	1	1	9	9	0.01	0.01	99.60				
data_chang	1	1	2	2	2	1	1	2	1	2	1	1	9	9	0.01	0.01	99.61				

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
help_peopl	1	1	2	3	1	1	2	2	1	1	1	1	9	0.01	99.61						
inform_thu	1	1	3	3	2	2	1	1	1	1	1	1	9	0.01	99.62						
limit_word	1	1	2	2	3	3	1	1	1	1	1	1	9	0.01	99.63						
method_exampl	1	1	1	1	2	2	3	3	1	1	1	1	9	0.01	99.64						
mine_word	1	1	3	3	2	2	1	1	1	1	1	1	9	0.01	99.64						
model_prove	1	1	2	2	1	1	2	2	1	2	1	1	9	0.01	99.65						
model_singl	1	1	1	1	2	2	1	1	2	3	1	1	9	0.01	99.66						
nois_data	1	1	2	2	1	1	3	3	1	1	1	1	9	0.01	99.67						
perform_find	1	1	1	1	3	3	2	2	1	1	1	1	9	0.01	99.68						
term_process	1	1	1	1	1	1	3	3	1	1	1	1	9	0.01	99.68						
time_make	1	1	1	1	3	3	2	2	1	1	1	1	9	0.01	99.69						
us_collect	1	1	1	1	2	2	2	2	1	1	2	2	9	0.01	99.70						
us_determin	1	1	3	3	2	2	1	1	1	1	1	1	9	0.01	99.71						
user_accord	1	1	1	1	1	1	2	2	3	3	1	1	9	0.01	99.72						
valu_text	1	1	2	2	1	1	1	1	3	3	1	1	9	0.01	99.72						
word_correl	1	1	1	1	1	1	2	2	3	3	1	1	9	0.01	99.73						
mean_approach	2	3	1	1	1	1	1	1	1	1	1	1	8	0.01	99.74						
current_version	2	2	1	1	2	2	1	1	1	1	1	1	8	0.01	99.74						
martin_porter	2	2	1	1	1	1	1	1	2	2	1	1	8	0.01	99.75						
obtain_relev	2	2	1	1	1	1	2	2	1	1	1	1	8	0.01	99.76						
refer_mean	2	2	1	1	1	1	1	1	2	2	1	1	8	0.01	99.77						
term_obtain	2	2	1	1	1	1	1	1	1	2	1	1	8	0.01	99.77						
approach_discov	1	1	2	2	1	1	1	1	2	2	1	1	8	0.01	99.78						
approach_estim	1	1	1	1	3	3	1	1	1	1	1	1	8	0.01	99.79						
catégori_classif	1	1	1	2	3	1	1	1	1	1	1	1	8	0.01	99.79						

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
classifi_built	1	1	1	1	1	1	2	3	1	1	1	1	1	1	1	1	1	8	0.01	99.80	
classifi_simpl	1	1	2	2	1	1	1	1	1	1	2	2	2	2	2	2	2	8	0.01	99.81	
data_initi	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	8	0.01	99.81	
featur_input	1	1	1	1	1	1	2	2	1	1	2	2	1	1	2	2	2	8	0.01	99.82	
function_determin	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	8	0.01	99.83	
improv_document	1	1	2	2	1	1	2	2	1	1	1	1	1	1	1	1	1	8	0.01	99.84	
measur_emot	1	1	1	1	1	1	2	3	1	1	1	1	1	1	1	1	1	8	0.01	99.84	
preprocess_token	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	8	0.01	99.85	
problem_lack	1	1	1	1	1	1	3	3	1	1	1	1	1	1	1	1	1	8	0.01	99.86	
process_complet	1	1	2	2	1	1	1	2	1	1	1	1	1	1	1	1	1	8	0.01	99.86	
provid_signific	1	1	1	1	1	1	2	1	1	1	2	1	1	1	1	1	1	8	0.01	99.87	
select_group	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	8	0.01	99.88	
system_stem	1	1	1	1	1	1	2	3	1	1	1	1	1	1	1	1	1	8	0.01	99.88	
thousand_document	1	1	1	1	2	1	1	1	1	2	1	1	1	1	1	1	1	8	0.01	99.89	
train_remain	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	8	0.01	99.90	
contain_user	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7	0.01	99.90	
email_address	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7	0.01	99.91	
account_order	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	7	0.01	99.92	
accuraci_significantl	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	7	0.01	99.92	
base_lexic	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	7	0.01	99.93	
base_theoriri	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	7	0.01	99.93	
becom_time	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	7	0.01	99.94	
featur_task	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	7	0.01	99.95	
limit_term	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7	0.01	99.95	
process_break	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	7	0.01	99.96	

Theme	2013			2014			2015			2016			2017			2018			TOTAL	AVERAGE	ACCUMULATIVE
	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot	Doc	Tot			
public_date	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	7	0.01	99.96	
retriev_semant	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	7	0.01	99.97	
space_number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	0.01	99.98	
studi_analysi	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	0.01	99.98	
symposium_document	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	0.01	99.99	
tree_approach	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	0.01	99.99	
apach_core	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	0.01	100.00	

## APPENDIX 5-B

This appendix contains all themes that were removed.

proceed_intern	confer_inform	confer_human	iintern_sigir	third_intern
proceed_annual	confer_research	confer_neural	iintern_workshop	ieee_transact
proceed_confer	confer_comput	journal_confer	algorithm_intern	proc_ieee
confer_proceed	sigir_confer	work_confer	avail_internet	ieee_comput
model_proceed	confer_machin	intern_journal	iintern_symposium	ieee_intellig
proceed_workshop	confer_intellig	journal_comput	iintern_joint	cluster_ieee
proceed_ieee	confer_advanc	journal_advanc	internet_user	ieee_tran
algorithm_proceed	confer_artifici	journal_data	sigkdd_intern	categor_ieee
categor_proceed	confer_data	journal_artifici	iintern_arab	engin_ieee
proceed_naacl	confer_knowledg	journal_machin	learn_intern	analysi_ieee
system_proceed	confer_world	journal_inform	articl_intern	model_ieee
analysi_proceed	confer_north	journal_scientif	categor_intern	figur_show
document_proceed	annual_confer	journal_societi	document_intern	shown_figur
retriev_proceed	confer_empir	algorithm_journal	fifth_intern	figur_figur
cluster_proceed	confer_paper	alloc_journal	inform_intern	depict_figur
network_proceed	joint_confer	univers_journal	analysi_intern	figur_illustr
mine_proceed	confer_languag	classif_journal	document_internet	graph_figur
proceed_joint	european_confer	journal_document	download_intern	word_figur
classif_proceed	retriev_confer	arab_journal	inform_internet	figur_exampl
extract_proceed	technolog_confer	journal_intellig	internet_base	figur_perform
learn_proceed	analysi_confer	journal_statist	internet_technolog	seen_figur
proceed_cole	confer_natur	journal_system	mine_intern	tabl_figur
proceed_sigkdd	confer_enc	research_journal	proc_intern	accuraci_figur
proceed_sixth	confer_ieee	analysi_journal	public_intern	algorithm_figur
proceed_third	confer_system	journal_engin	applic_intern	document_figur
recognit_proceed	confer_weblog	journal_theoret	base_intern	figur_graphic
techniqu_proceed	linguist_confer	journal_appli	cluster_intern	figur_result
evalu_proceed	nation_confer	journal_electron	iintern_extern	figur_tabl
proceed_nation	arab_confer	journal_mathemat	interna_tional	figur_word
proceed_symposium	confer_appli	journal_scien	internet_thing	exampl_figur
proceed_ternat	confer_manag	journal_soft	introduct_internet	figur_comparison
review_proceed	confer_search	method_journal	model_intern	figur_present
tagger_proceed	confer_arab	network_journal	process_intern	figur_propos
text_proceed	confer_digit	ieee_intern	sixth_intern	respect_figur
intern_confer	confer_educ	annual_intern	system_intern	term_figur

classifi_figur	paper_propos	paper_deal	perform_work	structur_follow
figur_mean	paper_present	paper_defin	purpos_work	approach_follow
figur_notic	paper_organ	paper_extend	associ_comput	describ_follow
figur_sampl	conclus_paper	paper_refer	meet_associ	word_follow
figur_system	work_paper	paper_relat	associ_professor	distribut_follow
gener_figur	research_paper	paper_text	chapter_associ	estim_follow
present_figur	paper_discuss	paper_us	associ_rule	follow_approach
time_figur	paper_introduc	paper_work	word_associ	follow_step
abstract_paper	rest_paper	process_paper	associ_term	interpret_follow
abstract_articl	paper_analyz	futur_work	associ_word	step_follow
gmail_abstract	paper_describ	relat_work	concept_associ	page_upload
yahoo_abstract	present_paper	previou_work	inform_associ	result_show
india_abstract	remaind_paper	research_work	process_associ	tabl_show
document_abstract	conclud_paper	model_work	stroudsburg_associ	shown_tabl
abstract_research	contribut_paper	propos_work	linguist_associ	show_result
abstract_text	paper_consid	acknowledg_work	mine_associ	experi_show
abstract_concept	paper_show	approach_work	statist_associ	result_shown
literatur_abstract	cluster_paper	classif_work	univers_press	show_perform
abstract_propos	document_paper	current_work	regular_express	show_improv
abstract_represent	paper_address	public_work	press_cambridg	show_averag
author_profil	paper_focus	word_work	process_press	show_propos
read_author	paper_investig	languag_work	word_express	studi_show
stat_author	paper_method	system_work	express_languag	analysi_show
author_includ	paper_structur	conclus_work	text_express	show_classif
author_public	describ_paper	method_work	academ_press	show_signific
includ_author	discuss_paper	recent_work	data_compress	section_show
acknowledg_author	inform_paper	aaai_workshop	multiword_express	show_data
author_author	model_paper	work_work	press_york	show_effect
author_propos	paper_base	adopt_work	express_opinion	show_featur
author_thank	paper_explor	algorithm_work	express_posit	shown_equat
correspond_author	paper_provid	data_work	express_text	work_show
document_author	part_paper	frame_work	inform_express	graph_show
author_present	result_paper	present_work	annual_meet	process_shown
author_paper	consid_paper	result_work	follow_section	show_approach
author_profil	current_paper	collect_work	organ_follow	show_exampl
paper_author	languag_paper	dataset_work	defin_follow	show_number
research_author	paper_aim	exist_work	comput_follow	studi_shown
author_provid	paper_comput	goal_work	follow_text	valu_show
text_author	paper_conclud	part_work	follow_word	architectur_shown

clearli_show	relat_node	content_relat	valu_tabl	detail_section
exampl_show	relat_research	data_relat	databas_tabl	section_compar
method_show	relat_studi	experi_relat	featur_tabl	section_explain
show_accuraci	relat_arab	find_relat	tabl_featur	section_highlight
show_promis	relat_domain	hyponymi_relat	tabl_illistr	algorithm_section
show_tabl	relat_issu	languag_relat	tabl_word	explain_section
show_valu	relat_method	model_relat	test_tabl	process_section
algorithm_show	relat_sentenc	new_relat	case_tabl	section_final
class_shown	relat_set	present_relat	column_tabl	section_system
data_shown	relat_tweet	space_relat	tabl_data	subsequ_section
dataset_show	work_relat	tabl_relat	tabl_indic	dataset_section
document_shown	document_relat	section_conclud	tabl_number	methodolog_section
featur_shown	section_relat	conclud_section	tabl_process	section_document
model_show	semant_relat	final_conclud	tabl_seen	section_experi
research_show	text_relat	result_conclud	tabl_summari	given_document
show_combin	concept_relat	tabl_tabl	tabl_weight	given_input
show_comparison	close_relat	tabl_present	section_describ	exampl_given
show_detail	inform_relat	result_tabl	describ_section	give_detail
show_evalu	term_relat	tabl_comparison	section_present	give_result
show_extract	word_relat	tabl_result	previou_section	given_number
show_relationship	causal_relationship	present_tabl	section_section	probabl_given
show_sampl	class_relat	tabl_dataset	work_section	given_class
show_text	problem_relat	tabl_compar	method_section	system_give
system_show	process_relat	tabl_evalu	section_result	give_chanc
system_shown	us_relat	dataset_tabl	given_section	give_inform
test_show	background_relat	given_tabl	present_section	method_give
relat_word	extract_relat	list_tabl	result_section	model_explain
relat_term	featur_relat	report_tabl	section_discuss	mention_previous
relat_document	task_relat	tabl_comput	discuss_section	previous_mention
relat_concept	topic_relat	tabl_exampl	section_evalu	previous_unknown
relat_databas	articl_relat	tabl_list	evalu_section	mention_earlier
relat_project	base_relat	method_tabl	final_section	mention_problem
relat_text	describ_relat	data_tabl	section_briefli	method_mention
relat_data	discuss_relat	document_tabl	section_give	mention_word
relat_inform	group_relat	tabl_case	section_provid	academi_scienc
relat_specif	review_relat	tabl_document	section_detail	academ_publish
relat_user	semant_related	tabl_method	approach_section	kluwer_academ
relat_extract	studi_relat	tabl_notic	cluster_section	nation_academi
relat_mean	analysi_relat	tabl_repres	conclus_section	nation_institut

nation_research	word_final	work_area	research_volum	experi_research
nation_univers	creat_final	work_data	researchg_public	goal_research
publish_onlin	dataset_final	work_describ	research_focus	limit_research
cambridg_univers	institut_technolog	work_perform	advanc_research	market_research
scienc_univers	institut_inform	work_plan	method_research	methodolog_research
univers_scienc	educ_institut	work_shop	research_design	research_automat
state_univers	higher_educ	work_analyz	classif_research	research_classifi
islam_univers	develop_educ	work_appli	current_research	research_consid
oxford_univers	educ_process	work_consid	further_research	research_council
univers_california	educ_system	work_exist	previou_research	research_methodolog
stanford_univers	analysi_reduc	work_explor	process_research	research_model
univers_public	educ_technolog	work_find	research_area	research_public
univers_technolog	algorithm_reduc	work_main	research_focu	research_research
engin_univers	data_cambridg	work_model	research_group	research_result
lancast_univers	retriev_cambridg	work_problem	area_research	research_scholar
technic_univers	conclus_futur	work_properli	data_research	research_state
technolog_univers	futur_research	work_provid	problem_research	research_student
univers_depart	improv_futur	work_research	research_commun	research_support
univers_higher	futur_plan	work_result	research_conduct	research_us
univers_student	futur_refer	work_term	conduct_research	result_research
citi_univers	work_futur	work_word	field_research	technolog_research
comput_univers	work_propos	recent_year	intellig_research	time_research
princeton_univers	work_focu	twenti_year	research_field	new_articl
research_univers	work_compar	year_research	research_issu	articl_classif
laboratori_univers	work_present	data_year	research_propos	articl_preposit
univers_faculti	work_support	year_year	research_text	articl_distribut
univers_michigan	work_arab	research_comput	research_tool	articl_text
final_result	work_featur	research_develop	discuss_research	word_articl
final_conclus	work_text	research_question	research_appli	articl_new
model_final	work_base	learn_research	research_base	articl_number
result_final	work_refer	research_project	research_centr	articl_us
document_final	work_us	research_interest	research_direct	wikipedia_articl
final_evalu	work_automat	recent_research	research_find	experi_conduct
final_step	work_develop	engin_research	research_includ	conduct_experi
final_weight	work_field	system_research	research_inform	studi_conduct
final_cluster	work_focus	research_articl	research_practic	conduct_evalu
final_document	work_improv	research_method	research_process	conduct_featur
final_output	work_project	scientif_research	research_technolog	approach_conduct
final_word	work_system	http_researchg	scienc_research	conduct_us

student_develop	comparison_propos	result_indic	data_result	result_number
master_student	propos_text	result_dataset	perform_result	categori_result
number_student	propos_base	result_cluster	averag_result	satisfactori_result
public_citat	conclus_propos	test_result	result_similar	result_search
citat_profil	methodolog_propos	result_model	system_result	result_analyz
citat_read	describ_propos	present_result	result_comparison	step_result
http_citat	improv_propos	result_result	precis_result	conclus_result
citat_profil	prove_propos	analysi_result	result_found	studi_result
profil_content	task_propos	discuss_result	stem_result	return_result
user_profil	propos_gener	measur_result	yield_result	inform_result
propos_method	mean_propos	word_result	result_data	case_result
propos_system	propos_us	achiev_result	result_measur	result_precis
propos_model	dataset_propos	document_result	result_task	us_result
propos_approach	propos_classif	dataset_result	result_method	filter_result
propos_algorithm	appli_propos	base_result	result_valu	project_result
method_propos	text_propos	classifi_result	result_document	relev_result
algorithm_propos	therfor_propos	result_term	analyz_result	exampl_result
model_propos	gener_propos	result_classif	result_approach	interest_result
approach_propos	compon_propos	comparison_result	result_user	result_machin
propos_solut	experiment_result	result_classifi	result_gener	summari_result
propos_framework	result_obtain	result_process	result_queri	result_train
propos_techinu	compar_result	process_result	approach_result	summar_result
result_propos	evalu_result	method_result	result_word	result_arab
perform_propos	classif_result	result_present	time_result	result_confirm
techniqu_propos	obtain_result	similar_result	predict_result	result_describ
evalu_propos	cluster_result	result_base	gener_result	result_keyword
system_propos	good_result	result_text	preliminari_result	result_repres
propos_novel	result_us	featur_result	retriev_result	desir_result
document_propos	result_compar	result_accuraci	accord_result	observ_result
cluster_propos	experi_result	result_studi	effect_result	result_applic
accuraci_propos	search_result	result_report	result_combin	result_refer
process_propos	result_discuss	result_algorithm	interpret_result	result_return
us_propos	result_evalu	accur_result	result_calcul	list_result
featur_propos	result_achiev	result_system	result_experiment	result_find
propos_improv	result_appli	result_perform	result_support	extract_result
analysi_propos	result_experi	produc_result	text_result	note_result
measur_propos	result_test	result_demonstr	result_observ	techniqu_result
propos_hybrid	result_analysi	algorithm_result	result_posit	result_context
problem_propos	improv_result	promis_result	result_signific	result_specif

number_result	avail_http	onlin_avail	term_document	inform_system
size_result	number_document	take_account	inform_technolog	depart_comput
word_word	volum_issu	total_number	comput_scienc	

## APPENDIX 5-C

This appendix contains all the possible origination of the stemmed theme “*text\_classif*”

ciphertext classify	ciphertext preclassified	ciphertexts classifier
ciphertext classifiable	ciphertext preclassifying	ciphertexts classifiers
ciphertext classific	ciphertext reclassify	ciphertexts classifies
ciphertext classically	ciphertext reclassification	ciphertexts classifying
ciphertext classification	ciphertext reclassifications	ciphertexts counterclassification
ciphertext classificational	ciphertext reclassified	ciphertexts counterclassifications
ciphertext classifications	ciphertext reclassifies	ciphertexts declassify
ciphertext classifier	ciphertext reclassifying	ciphertexts declassification
ciphertext classificatory	ciphertext subclassify	ciphertexts declassifications
ciphertext classified	ciphertext subclassification	ciphertexts declassified
ciphertext classifier	ciphertext subclassifications	ciphertexts declassifies
ciphertext classifiers	ciphertext subclassified	ciphertexts declassifying
ciphertext classifies	ciphertext subclassifies	ciphertexts disclassify
ciphertext classifying	ciphertext subclassifying	ciphertexts misclassify
ciphertext counterclassification	ciphertext superclassified	ciphertexts misclassification
ciphertext counterclassifications	ciphertext unclassify	ciphertexts misclassifications
ciphertext declassify	ciphertext unclassifiable	ciphertexts misclassified
ciphertext declassification	ciphertext unclassifiability	ciphertexts misclassifies
ciphertext declassifications	ciphertext unclassifiably	ciphertexts misclassifying
ciphertext declassified	ciphertext unclassification	ciphertexts nonclassifiable
ciphertext declassifies	ciphertext unclassified	ciphertexts nonclassification
ciphertext declassifying	ciphertext unclassifying	ciphertexts nonclassified
ciphertext disclassify	ciphertext well-classified	ciphertexts preclassify
ciphertext misclassify	ciphertext world-classifying	ciphertexts preclassification
ciphertext misclassification	ciphertexts classify	ciphertexts preclassified
ciphertext misclassifications	ciphertexts classifiable	ciphertexts preclassifying
ciphertext misclassified	ciphertexts classific	ciphertexts reclassify
ciphertext misclassifies	ciphertexts classically	ciphertexts reclassification
ciphertext misclassifying	ciphertexts classification	ciphertexts reclassifications
ciphertext nonclassifiable	ciphertexts classificational	ciphertexts reclassified
ciphertext nonclassification	ciphertexts classifications	ciphertexts reclassifies
ciphertext nonclassified	ciphertexts classifier	ciphertexts reclassifying
ciphertext preclassify	ciphertexts classificatory	ciphertexts subclassify
ciphertext preclassification	ciphertexts classified	ciphertexts subclassification

ciphertexts subclassifications	close-textured misclassifications	coarse-textured classifications
ciphertexts subclassified	close-textured misclassified	coarse-textured classifier
ciphertexts subclassifies	close-textured misclassifies	coarse-textured classificatory
ciphertexts subclassifying	close-textured misclassifying	coarse-textured classified
ciphertexts superclassified	close-textured nonclassifiable	coarse-textured classifier
ciphertexts unclassify	close-textured nonclassification	coarse-textured classifiers
ciphertexts unclassifiable	close-textured nonclassified	coarse-textured classifies
ciphertexts unclassifiability	close-textured preclassify	coarse-textured classifying
ciphertexts unclassification	close-textured preclassification	coarse-textured counterclassification
ciphertexts unclassified	close-textured preclassifying	coarse-textured counterclassifications
ciphertexts unclassifying	close-textured reclassify	coarse-textured declassify
ciphertexts well-classified	close-textured reclassification	coarse-textured declassification
ciphertexts world-classifying	close-textured reclassifications	coarse-textured declassifications
close-textured classify	close-textured reclassified	coarse-textured declassified
close-textured classifiable	close-textured reclassifies	coarse-textured declassifies
close-textured classific	close-textured reclassifying	coarse-textured declassifying
close-textured classifically	close-textured subclassify	coarse-textured declassifying
close-textured classification	close-textured subclassification	coarse-textured declassifying
close-textured classificational	close-textured classifications	coarse-textured misclassify
close-textured classifications	close-textured subclassified	coarse-textured misclassification
close-textured classifier	close-textured subclassifies	coarse-textured misclassifications
close-textured classificatory	close-textured subclassifying	coarse-textured misclassified
close-textured classified	close-textured superclassified	coarse-textured misclassifies
close-textured classifier	close-textured unclassify	coarse-textured misclassifying
close-textured classifiers	close-textured unclassifiable	coarse-textured nonclassifiable
close-textured classifies	close-textured unclassifiability	coarse-textured nonclassification
close-textured classifying	close-textured unclassifiably	coarse-textured nonclassified
close-textured counterclassification	close-textured unclassification	coarse-textured preclassify
close-textured counterclassifications	close-textured unclassified	coarse-textured preclassification
close-textured declassify	close-textured unclassifying	coarse-textured preclassified
close-textured declassification	close-textured well-classified	coarse-textured preclassifying
close-textured declassifications	close-textured world-classifying	coarse-textured reclassify
close-textured declassified	coarse-textured classify	coarse-textured reclassification
close-textured declassifies	coarse-textured classifiable	coarse-textured reclassifications
close-textured declassifying	coarse-textured classific	coarse-textured reclassified
close-textured declassify	coarse-textured classifically	coarse-textured reclassifies
close-textured misclassify	coarse-textured classification	coarse-textured reclassifying
close-textured misclassification	coarse-textured classificational	coarse-textured subclassify
		coarse-textured subclassification

coarse-textured subclassifications	context misclassifications	contextive classifications
coarse-textured subclassified	context misclassified	contextive classifier
coarse-textured subclassifies	context misclassifies	contextive classificatory
coarse-textured subclassifying	context misclassifying	contextive classified
coarse-textured superclassified	context nonclassifiable	contextive classifier
coarse-textured unclassify	context nonclassification	contextive classifiers
coarse-textured unclassifiable	context nonclassified	contextive classifies
coarse-textured unclassifiableness	context preclassify	contextive classifying
coarse-textured unclassifiably	context preclassification	contextive counterclassification
coarse-textured unclassification	context preclassified	contextive counterclassifications
coarse-textured unclassified	context preclassifying	contextive declassify
coarse-textured unclassifying	context reclassify	contextive declassification
coarse-textured well-classified	context reclassification	contextive declassifications
coarse-textured world-classifying	context reclassifications	contextive declassified
context classify	context reclassified	contextive declassifies
context classifiable	context reclassifies	contextive declassifying
context classic	context reclassifying	contextive declassify
context classically	context subclassify	contextive misclassify
context classification	context subclassification	contextive misclassification
context classificational	context subclassifications	contextive misclassifications
context classifications	context subclassified	contextive misclassified
context classifier	context subclassifies	contextive misclassifies
context classificatory	context subclassifying	contextive misclassifying
context classified	context superclassified	contextive nonclassifiable
context classifier	context unclassify	contextive nonclassification
context classifiers	context unclassifiable	contextive nonclassified
context classifies	context unclassifiableness	contextive preclassify
context classifying	context unclassifiably	contextive preclassification
context counterclassification	context unclassification	contextive preclassified
context counterclassifications	context unclassified	contextive preclassifying
context declassify	context unclassifying	contextive reclassify
context declassification	context well-classified	contextive reclassification
context declassifications	context world-classifying	contextive reclassifications
context declassified	contextive classify	contextive reclassified
context declassifies	contextive classifiable	contextive reclassifies
context declassifying	contextive classific	contextive reclassifying
context disclassify	contextive classifically	contextive subclassify
context misclassify	contextive classification	contextive subclassification
context misclassification	contextive classificational	contextive subclassifications

contextive subclassified	contexts misclassified	context's classifier
contextive subclassifies	contexts misclassifies	context's classificatory
contextive subclassifying	contexts misclassifying	context's classified
contextive superclassified	contexts nonclassifiable	context's classifier
contextive unclassify	contexts nonclassification	context's classifiers
contextive unclassifiable	contexts nonclassified	context's classifies
contextive unclassifiability	contexts preclassify	context's classifying
contextive unclassification	contexts preclassification	context's counterclassification
contextive unclassified	contexts preclassifying	context's counterclassifications
contextive unclassifying	contexts reclassify	context's declassification
contextive well-classified	contexts reclassification	context's declassifications
contextive world-classifying	contexts reclassifications	context's declassified
contexts classify	contexts reclassified	context's declassifies
contexts classifiable	contexts reclassifies	context's declassifying
contexts classific	contexts reclassifying	context's disclassify
contexts classically	contexts subclassify	context's misclassify
contexts classification	contexts subclassification	context's misclassification
contexts classificational	contexts subclassifications	context's misclassifications
contexts classifications	contexts subclassified	context's misclassified
contexts classifier	contexts subclassifies	context's misclassifies
contexts classificatory	contexts subclassifying	context's misclassifying
contexts classified	contexts superclassified	context's nonclassifiable
contexts classifier	contexts unclassify	context's nonclassification
contexts classifiers	contexts unclassifiable	context's nonclassified
contexts classifies	contexts unclassifiability	context's preclassify
contexts classifying	contexts unclassifying	context's preclassification
contexts counterclassification	contexts unclassification	context's preclassified
contexts counterclassifications	contexts unclassified	context's preclassifying
contexts declassify	contexts unclassifying	context's reclassify
contexts declassification	contexts well-classified	context's reclassification
contexts declassifications	contexts world-classifying	context's reclassifications
contexts declassified	context's classify	context's reclassified
contexts declassifies	context's classifiable	context's reclassifies
contexts declassifying	context's classific	context's reclassifying
contexts disclassify	context's classically	context's subclassify
contexts misclassify	context's classification	context's subclassification
contexts misclassification	context's classificational	context's subclassifications
contexts misclassifications	context's classifications	context's subclassified

context's subclassifies	contextual misclassifies	contextualize classificatory
context's subclassifying	contextual misclassifying	contextualize classified
context's superclassified	contextual nonclassifiable	contextualize classifier
context's unclassify	contextual nonclassification	contextualize classifiers
context's unclassifiable	contextual nonclassified	contextualize classifies
context's unclassifiability	contextual preclassify	contextualize classifying
context's unclassifiability	contextual preclassification	contextualize counterclassification
context's unclassification	contextual preclassified	contextualize counterclassifications
context's unclassified	contextual preclassifying	contextualize declassify
context's unclassifying	contextual reclassify	contextualize declassification
context's well-classified	contextual reclassification	contextualize declassifications
context's world-classifying	contextual reclassifications	contextualize declassified
contextual classify	contextual reclassified	contextualize declassifies
contextual classifiable	contextual reclassifies	contextualize declassifying
contextual classific	contextual reclassifying	contextualize disclassify
contextual classifically	contextual subclassify	contextualize misclassify
contextual classification	contextual subclassification	contextualize misclassification
contextual classificational	contextual subclassifications	contextualize misclassifications
contextual classifications	contextual subclassified	contextualize misclassified
contextual classifier	contextual subclassifies	contextualize misclassifies
contextual classificatory	contextual subclassifying	contextualize misclassifying
contextual classified	contextual superclassified	contextualize nonclassifiable
contextual classifier	contextual unclassify	contextualize nonclassification
contextual classifiers	contextual unclassifiable	contextualize nonclassified
contextual classifies	contextual unclassifiability	contextualize preclassify
contextual classifying	contextual unclassifiably	contextualize preclassification
contextual counterclassification	contextual unclassification	contextualize preclassified
contextual counterclassifications	contextual unclassified	contextualize preclassifying
contextual declassify	contextual unclassifying	contextualize reclassify
contextual declassification	contextual well-classified	contextualize reclassification
contextual declassifications	contextual world-classifying	contextualize reclassifications
contextual declassified	contextualize classify	contextualize reclassified
contextual declassifies	contextualize classifiable	contextualize reclassifies
contextual declassifying	contextualize classific	contextualize reclassifying
contextual disclassify	contextualize classifically	contextualize subclassify
contextual misclassify	contextualize classification	contextualize subclassification
contextual misclassification	contextualize classificational	contextualize subclassifications
contextual misclassifications	contextualize classifications	contextualize subclassified
contextual misclassified	contextualize classificator	contextualize subclassifies

contextualize subclassifying	contextually misclassifying	contextural classified
contextualize superclassified	contextually nonclassifiable	contextural classifier
contextualize unclassify	contextually nonclassification	contextural classifiers
contextualize unclassifiable	contextually nonclassified	contextural classifies
contextualize unclassifiability	contextually preclassify	contextural classifying
contextualize unclassifiably	contextually preclassification	contextural counterclassification
contextualize unclassification	contextually preclassified	contextural counterclassifications
contextualize unclassified	contextually preclassifying	contextural declassify
contextualize unclassifying	contextually reclassify	contextural declassification
contextualize well-classified	contextually reclassification	contextural declassifications
contextualize world-classifying	contextually reclassifications	contextural declassified
contextually classify	contextually reclassified	contextural declassifies
contextually classifiable	contextually reclassifies	contextural declassifying
contextually classific	contextually reclassifying	contextural classifify
contextually classifically	contextually subclassify	contextural misclassify
contextually classification	contextually subclassification	contextural misclassification
contextually classificational	contextually subclassifications	contextural misclassifications
contextually classifications	contextually subclassified	contextural misclassified
contextually classifier	contextually subclassifies	contextural misclassifies
contextually classificatory	contextually subclassifying	contextural misclassifying
contextually classified	contextually superclassified	contextural nonclassifiable
contextually classifier	contextually unclassify	contextural nonclassification
contextually classifiers	contextually unclassifiable	contextural nonclassified
contextually classifies	contextually unclassifiability	contextural preclassify
contextually classifying	contextually unclassifiably	contextural preclassification
contextually counterclassification	contextually unclassification	contextural preclassified
contextually counterclassifications	contextually unclassified	contextural preclassifying
contextually declassify	contextually unclassifying	contextural reclassify
contextually declassification	contextually well-classified	contextural reclassification
contextually declassifications	contextually world-classifying	contextural reclassifications
contextually declassified	contextural classify	contextural reclassified
contextually declassifies	contextural classifiable	contextural reclassifies
contextually declassifying	contextural classific	contextural reclassifying
contextually disclassify	contextural classifically	contextural subclassify
contextually misclassify	contextural classification	contextural subclassification
contextually misclassification	contextural classificational	contextural subclassifications
contextually misclassifications	contextural classifications	contextural subclassified
contextually misclassified	contextural classifier	contextural subclassifies
contextually misclassifies	contextural classificatory	contextural subclassifying

contextual superclassified	contexture nonclassifiable	contextured classifier
contextural unclassify	contexture nonclassification	contextured classifiers
contextural unclassifiable	contexture nonclassified	contextured classifies
contextural unclassifiableness	contexture preclassify	contextured classifying
contextural unclassifiably	contexture preclassification	contextured counterclassification
contextural unclassification	contexture preclassified	contextured counterclassifications
contextural unclassified	contexture preclassifying	contextured declassify
contextural unclassifying	contexture reclassify	contextured declassification
contextural well-classified	contexture reclassification	contextured declassifications
contextural world-classifying	contexture reclassifications	contextured declassified
contexture classify	contexture reclassified	contextured declassifies
contexture classifiable	contexture reclassifies	contextured declassifying
contexture classific	contexture reclassifying	contextured disclassify
contexture classifically	contexture subclassify	contextured misclassify
contexture classification	contexture subclassification	contextured misclassification
contexture classificational	contexture subclassifications	contextured misclassifications
contexture classifications	contexture subclassified	contextured misclassified
contexture classifier	contexture subclassifies	contextured misclassifies
contexture classificatory	contexture subclassifying	contextured misclassifying
contexture classified	contexture superclassified	contextured nonclassifiable
contexture classifier	contexture unclassify	contextured nonclassification
contexture classifiers	contexture unclassifiable	contextured nonclassified
contexture classifies	contexture unclassifiableness	contextured preclassify
contexture classifying	contexture unclassifiably	contextured preclassification
contexture counterclassification	contexture unclassification	contextured preclassified
contexture counterclassifications	contexture unclassified	contextured preclassifying
contexture declassify	contexture unclassifying	contextured reclassify
contexture declassification	contexture well-classified	contextured reclassification
contexture declassifications	contexture world-classifying	contextured reclassifications
contexture declassified	contextured classify	contextured reclassified
contexture declassifies	contextured classifiable	contextured reclassifies
contexture declassifying	contextured classific	contextured reclassifying
contexture disclassify	contextured classifically	contextured subclassify
contexture misclassify	contextured classification	contextured subclassification
contexture misclassification	contextured classificational	contextured subclassifications
contexture misclassifications	contextured classifications	contextured subclassified
contexture misclassified	contextured classifier	contextured subclassifies
contexture misclassifies	contextured classificatory	contextured subclassifying
contexture misclassifying	contextured classified	contextured superclassified

contextured unclassify	firm-textured nonclassification	fluidacetextract classifiers
contextured unclassifiable	firm-textured nonclassified	fluidacetextract classifies
contextured unclassifiability	firm-textured preclassify	fluidacetextract classifying
contextured unclassifiably	firm-textured preclassification	fluidacetextract counterclassification
contextured unclassification	firm-textured preclassified	fluidacetextract
contextured unclassified	firm-textured preclassifying	counterclassifications
contextured unclassifying	firm-textured reclassify	fluidacetextract declassify
contextured well-classified	firm-textured reclassification	fluidacetextract declassification
contextured world-classifying	firm-textured reclassifications	fluidacetextract declassifications
firm-textured classify	firm-textured reclassified	fluidacetextract declassified
firm-textured classifiable	firm-textured reclassifies	fluidacetextract declassifies
firm-textured classic	firm-textured reclassifying	fluidacetextract declassifying
firm-textured classically	firm-textured subclassify	fluidacetextract disclassify
firm-textured classification	firm-textured subclassification	fluidacetextract misclassify
firm-textured classificational	firm-textured subclassifications	fluidacetextract misclassification
firm-textured classifications	firm-textured subclassified	fluidacetextract misclassifications
firm-textured classifier	firm-textured subclassifies	fluidacetextract misclassified
firm-textured classificatory	firm-textured subclassifying	fluidacetextract misclassifies
firm-textured classified	firm-textured superclassified	fluidacetextract misclassifying
firm-textured classifier	firm-textured unclassify	fluidacetextract nonclassifiable
firm-textured classifiers	firm-textured unclassifiable	fluidacetextract nonclassification
firm-textured classifies	firm-textured unclassifiability	fluidacetextract nonclassified
firm-textured classifying	firm-textured unclassifiably	fluidacetextract preclassify
firm-textured counterclassification	firm-textured unclassification	fluidacetextract preclassification
firm-textured counterclassifications	firm-textured unclassified	fluidacetextract preclassified
firm-textured declassify	firm-textured unclassifying	fluidacetextract preclassifying
firm-textured declassification	firm-textured well-classified	fluidacetextract reclassify
firm-textured declassifications	firm-textured world-classifying	fluidacetextract reclassification
firm-textured declassified	fluidacetextract classify	fluidacetextract reclassifications
firm-textured declassifies	fluidacetextract classifiable	fluidacetextract reclassified
firm-textured declassifying	fluidacetextract classific	fluidacetextract reclassifies
firm-textured disclassify	fluidacetextract classifically	fluidacetextract reclassifying
firm-textured misclassify	fluidacetextract classification	fluidacetextract subclassify
firm-textured misclassification	fluidacetextract classificational	fluidacetextract subclassification
firm-textured misclassifications	fluidacetextract classifications	fluidacetextract subclassifications
firm-textured misclassified	fluidacetextract classifier	fluidacetextract subclassified
firm-textured misclassifies	fluidacetextract classificatory	fluidacetextract subclassifies
firm-textured misclassifying	fluidacetextract classified	fluidacetextract subclassifying
firm-textured nonclassifiable	fluidacetextract classifier	fluidacetextract superclassified

fluidacetextract unclassify	graphic-texture nonclassifiable	intertexture classifier
fluidacetextract unclassifiable	graphic-texture nonclassification	intertexture classifiers
fluidacetextract unclassifiability	graphic-texture nonclassified	intertexture classifies
fluidacetextract unclassifiably	graphic-texture preclassify	intertexture classifying
fluidacetextract unclassification	graphic-texture preclassification	intertexture counterclassification
fluidacetextract unclassified	graphic-texture preclassified	intertexture counterclassifications
fluidacetextract unclassifying	graphic-texture preclassifying	intertexture declassify
fluidacetextract well-classified	graphic-texture reclassify	intertexture declassification
fluidacetextract world-classifying	graphic-texture reclassification	intertexture declassifications
graphic-texture classify	graphic-texture reclassifications	intertexture declassified
graphic-texture classifiable	graphic-texture reclassified	intertexture declassifies
graphic-texture classific	graphic-texture reclassifies	intertexture declassifying
graphic-texture classifically	graphic-texture reclassifying	intertexture disclassify
graphic-texture classification	graphic-texture subclassify	intertexture misclassify
graphic-texture classificational	graphic-texture subclassification	intertexture misclassification
graphic-texture classifications	graphic-texture subclassifications	intertexture misclassifications
graphic-texture classifier	graphic-texture subclassified	intertexture misclassified
graphic-texture classificatory	graphic-texture subclassifies	intertexture misclassifies
graphic-texture classified	graphic-texture subclassifying	intertexture misclassifying
graphic-texture classifier	graphic-texture superclassified	intertexture nonclassifiable
graphic-texture classifiers	graphic-texture unclassify	intertexture nonclassification
graphic-texture classifies	graphic-texture unclassifiable	intertexture nonclassified
graphic-texture classifying	graphic-texture unclassifiability	intertexture preclassify
graphic-texture counterclassification	graphic-texture unclassifiably	intertexture preclassification
graphic-texture counterclassifications	graphic-texture unclassification	intertexture preclassified
	graphic-texture unclassified	intertexture preclassifying
graphic-texture declassify	graphic-texture unclassifying	intertexture reclassify
graphic-texture declassification	graphic-texture well-classified	intertexture reclassification
graphic-texture declassifications	graphic-texture world-classifying	intertexture reclassifications
graphic-texture declassified	intertexture classify	intertexture reclassified
graphic-texture declassifies	intertexture classifiable	intertexture reclassifies
graphic-texture declassifying	intertexture classific	intertexture reclassifying
graphic-texture classif	intertexture classifically	intertexture subclassify
graphic-texture misclassify	intertexture classification	intertexture subclassification
graphic-texture misclassification	intertexture classificational	intertexture subclassifications
graphic-texture misclassifications	intertexture classifications	intertexture subclassified
graphic-texture misclassified	intertexture classifier	intertexture subclassifies
graphic-texture misclassifies	intertexture classificatory	intertexture subclassifying
graphic-texture misclassifying	intertexture classified	intertexture superclassified

intertexture unclassify	intext nonclassification	intextine classifiers
intertexture unclassifiable	intext nonclassified	intextine classifies
intertexture unclassifiableness	intext preclassify	intextine classifying
intertexture unclassifiably	intext preclassification	intextine counterclassification
intertexture unclassification	intext preclassified	intextine counterclassifications
intertexture unclassified	intext preclassifying	intextine declassify
intertexture unclassifying	intext reclassify	intextine declassification
intertexture well-classified	intext reclassification	intextine declassifications
intertexture world-classifying	intext reclassifications	intextine declassified
intext classify	intext reclassified	intextine declassifies
intext classifiable	intext reclassifies	intextine declassifying
intext classific	intext reclassifying	intextine declassify
intext classifically	intext subclassify	intextine misclassify
intext classification	intext subclassification	intextine misclassification
intext classificational	intext subclassifications	intextine misclassifications
intext classifications	intext subclassified	intextine misclassified
intext classifier	intext subclassifies	intextine misclassifies
intext classificatory	intext subclassifying	intextine misclassifying
intext classified	intext superclassified	intextine nonclassifiable
intext classifier	intext unclassify	intextine nonclassification
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intext classifies	intext unclassifiableness	intextine preclassify
intext classifying	intext unclassifiably	intextine preclassification
intext counterclassification	intext unclassification	intextine preclassified
intext counterclassifications	intext unclassified	intextine preclassifying
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intext declassification	intext well-classified	intextine reclassification
intext declassifications	intext world-classifying	intextine reclassifications
intext declassified	intextine classify	intextine reclassified
intext declassifies	intextine classifiable	intextine reclassifies
intext declassifying	intextine classific	intextine reclassifying
intext disclassify	intextine classifically	intextine subclassify
intext misclassify	intextine classification	intextine subclassification
intext misclassification	intextine classificational	intextine subclassifications
intext misclassifications	intextine classifications	intextine subclassified
intext misclassified	intextine classifier	intextine subclassifies
intext misclassifies	intextine classificatory	intextine subclassifying
intext misclassifying	intextine classified	intextine superclassified
intext nonclassifiable	intextine classifier	intextine unclassify

intextine unclassifiable	intexture nonclassified	martext classifies
intextine unclassifiableness	intexture preclassify	martext classifying
intextine unclassifiably	intexture preclassification	martext counterclassification
intextine unclassification	intexture preclassified	martext counterclassifications
intextine unclassified	intexture preclassifying	martext declassify
intextine unclassifying	intexture reclassify	martext declassification
intextine well-classified	intexture reclassification	martext declassifications
intextine world-classifying	intexture reclassifications	martext declassified
intexture classify	intexture reclassified	martext declassifies
intexture classifiable	intexture reclassifies	martext declassifying
intexture classific	intexture reclassifying	martext disclassify
intexture classifically	intexture subclassify	martext misclassify
intexture classification	intexture subclassification	martext misclassification
intexture classificational	intexture subclassifications	martext misclassifications
intexture classifications	intexture subclassified	martext misclassified
intexture classifier	intexture subclassifies	martext misclassifies
intexture classificatory	intexture subclassifying	martext misclassifying
intexture classified	intexture superclassified	martext nonclassifiable
intexture classifier	intexture unclassify	martext nonclassification
intexture classifiers	intexture unclassifiable	martext nonclassified
intexture classifies	intexture unclassifiableness	martext preclassify
intexture classifying	intexture unclassifiably	martext preclassification
intexture counterclassification	intexture unclassification	martext preclassified
intexture counterclassifications	intexture unclassified	martext preclassifying
intexture declassify	intexture unclassifying	martext reclassify
intexture declassification	intexture well-classified	martext reclassification
intexture declassifications	intexture world-classifying	martext reclassifications
intexture declassified	martext classify	martext reclassified
intexture declassifies	martext classifiable	martext reclassifies
intexture declassifying	martext classific	martext reclassifying
intexture disclassify	martext classifically	martext subclassify
intexture misclassify	martext classification	martext subclassification
intexture misclassification	martext classificational	martext subclassifications
intexture misclassifications	martext classifications	martext subclassified
intexture misclassified	martext classifier	martext subclassifies
intexture misclassifies	martext classificatory	martext subclassifying
intexture misclassifying	martext classified	martext superclassified
intexture nonclassifiable	martext classifier	martext unclassify
intexture nonclassification	martext classifiers	martext unclassifiable

marTEXT unclassifiability	noncontextual preclassify	noncontextually classifying
marTEXT unclassifiably	noncontextual preclassification	noncontextually counterclassification
marTEXT unclassification	noncontextual preclassified	noncontextually counterclassifications
marTEXT unclassified	noncontextual preclassifying	noncontextually counterclassifying
marTEXT unclassifying	noncontextual reclassify	noncontextually declassify
marTEXT well-classified	noncontextual reclassification	noncontextually declassification
marTEXT world-classifying	noncontextual reclassifications	noncontextually declassifications
noncontextual classify	noncontextual reclassified	noncontextually declassified
noncontextual classifiable	noncontextual reclassifies	noncontextually declassifies
noncontextual classicific	noncontextual reclassifying	noncontextually declassifying
noncontextual classifically	noncontextual subclassify	noncontextually declassifying
noncontextual classification	noncontextual subclassification	noncontextually declassifying
noncontextual classificational	noncontextual subclassifications	noncontextually misclassify
noncontextual classifications	noncontextual subclassified	noncontextually misclassification
noncontextual classifier	noncontextual subclassifies	noncontextually misclassifications
noncontextual classificatory	noncontextual subclassifying	noncontextually misclassified
noncontextual classified	noncontextual superclassified	noncontextually misclassifies
noncontextual classifier	noncontextual unclassify	noncontextually misclassifying
noncontextual classifiers	noncontextual unclassifiable	noncontextually nonclassifiable
noncontextual classifies	noncontextual unclassifiability	noncontextually nonclassification
noncontextual classifying	noncontextual unclassifiably	noncontextually nonclassified
noncontextual counterclassification	noncontextual unclassification	noncontextually preclassify
noncontextual counterclassifications	noncontextual unclassified	noncontextually preclassification
noncontextual declassify	noncontextual unclassifying	noncontextually preclassified
noncontextual declassification	noncontextual well-classified	noncontextually preclassifying
noncontextual declassifications	noncontextual world-classifying	noncontextually reclassify
noncontextual declassified	noncontextually classify	noncontextually reclassification
noncontextual declassifies	noncontextually classifiable	noncontextually reclassifications
noncontextual declassifying	noncontextually classific	noncontextually reclassified
noncontextual disclassify	noncontextually classifically	noncontextually reclassifies
noncontextual misclassify	noncontextually classification	noncontextually reclassifying
noncontextual misclassification	noncontextually classificational	noncontextually subclassify
noncontextual misclassifications	noncontextually classifications	noncontextually subclassification
noncontextual misclassified	noncontextually classifier	noncontextually subclassifications
noncontextual misclassifies	noncontextually classificatory	noncontextually subclassified
noncontextual misclassifying	noncontextually classified	noncontextually subclassifies
noncontextual nonclassifiable	noncontextually classifier	noncontextually subclassifying
noncontextual nonclassification	noncontextually classifiers	noncontextually superclassified
noncontextual nonclassified	noncontextually classifies	noncontextually unclassify
		noncontextually unclassifiable

noncontextually unclassifiability	nontextual preclassify	nontextually classifying
noncontextually unclassifiable	nontextual preclassification	nontextually counterclassification
noncontextually unclassification	nontextual preclassified	nontextually counterclassifications
noncontextually unclassified	nontextual preclassifying	nontextually declassify
noncontextually unclassifying	nontextual reclassify	nontextually declassification
noncontextually well-classified	nontextual reclassification	nontextually declassifications
noncontextually world-classifying	nontextual reclassifications	nontextually declassified
nontextual classify	nontextual reclassified	nontextually declassifies
nontextual classifiable	nontextual reclassifies	nontextually declassifying
nontextual classic	nontextual reclassifying	nontextually declassify
nontextual classically	nontextual subclassify	nontextually misclassify
nontextual classification	nontextual subclassification	nontextually misclassification
nontextual classificational	nontextual subclassifications	nontextually misclassifications
nontextual classifications	nontextual subclassified	nontextually misclassified
nontextual classifier	nontextual subclassifies	nontextually misclassifies
nontextual classificatory	nontextual subclassifying	nontextually misclassifying
nontextual classified	nontextual superclassified	nontextually nonclassifiable
nontextual classifier	nontextual unclassify	nontextually nonclassification
nontextual classifiers	nontextual unclassifiable	nontextually nonclassified
nontextual classifies	nontextual unclassifiability	nontextually preclassify
nontextual classifying	nontextual unclassifiably	nontextually preclassification
nontextual counterclassification	nontextual unclassification	nontextually preclassified
nontextual counterclassifications	nontextual unclassified	nontextually preclassifying
nontextual declassify	nontextual unclassifying	nontextually reclassify
nontextual declassification	nontextual well-classified	nontextually reclassification
nontextual declassifications	nontextual world-classifying	nontextually reclassifications
nontextual declassified	nontextually classify	nontextually reclassified
nontextual declassifies	nontextually classifiable	nontextually reclassifies
nontextual declassifying	nontextually classific	nontextually reclassifying
nontextual disclassify	nontextually classifically	nontextually subclassify
nontextual misclassify	nontextually classification	nontextually subclassification
nontextual misclassification	nontextually classificational	nontextually subclassifications
nontextual misclassifications	nontextually classifications	nontextually subclassified
nontextual misclassified	nontextually classifier	nontextually subclassifies
nontextual misclassifies	nontextually classificatory	nontextually subclassifying
nontextual misclassifying	nontextually classified	nontextually superclassified
nontextual nonclassifiable	nontextually classifier	nontextually unclassify
nontextual nonclassification	nontextually classifiers	nontextually unclassifiable
nontextual nonclassified	nontextually classifies	nontextually unclassifiability

nontextually unclassifiably	nontextural preclassification	nontexturally counterclassification
nontextually unclassification	nontextural preclassified	nontexturally counterclassifications
nontextually unclassified	nontextural preclassifying	nontexturally declassify
nontextually unclassifying	nontextural reclassify	nontexturally declassification
nontextually well-classified	nontextural reclassification	nontexturally declassifications
nontextually world-classifying	nontextural reclassifications	nontexturally declassified
nontextural classify	nontextural reclassified	nontexturally declassifies
nontextural classifiable	nontextural reclassifies	nontexturally declassifying
nontextural classific	nontextural reclassifying	nontexturally disclassify
nontextural classifically	nontextural subclassify	nontexturally misclassify
nontextural classification	nontextural subclassification	nontexturally misclassification
nontextural classificational	nontextural subclassifications	nontexturally misclassifications
nontextural classifications	nontextural subclassified	nontexturally misclassified
nontextural classifier	nontextural subclassifies	nontexturally misclassifies
nontextural classificatory	nontextural subclassifying	nontexturally misclassifying
nontextural classified	nontextural superclassified	nontexturally nonclassifiable
nontextural classifier	nontextural unclassify	nontexturally nonclassification
nontextural classifiers	nontextural unclassifiable	nontexturally nonclassified
nontextural classifies	nontextural unclassifiability	nontexturally preclassify
nontextural classifying	nontextural unclassifiably	nontexturally preclassification
nontextural counterclassification	nontextural unclassification	nontexturally preclassified
nontextural counterclassifications	nontextural unclassified	nontexturally preclassifying
nontextural declassify	nontextural unclassifying	nontexturally reclassify
nontextural declassification	nontextural well-classified	nontexturally reclassification
nontextural declassifications	nontextural world-classifying	nontexturally reclassifications
nontextural declassified	nontexturally classify	nontexturally reclassified
nontextural declassifies	nontexturally classifiable	nontexturally reclassifies
nontextural declassifying	nontexturally classific	nontexturally reclassifying
nontextural classif	nontexturally classifically	nontexturally subclassify
nontextural misclassif	nontexturally classification	nontexturally subclassification
nontextural misclassification	nontexturally classificational	nontexturally subclassifications
nontextural misclassifications	nontexturally classifications	nontexturally subclassified
nontextural misclassified	nontexturally classifier	nontexturally subclassifies
nontextural misclassifies	nontexturally classificatory	nontexturally subclassifying
nontextural misclassifying	nontexturally classified	nontexturally superclassified
nontextural nonclassifiable	nontexturally classifier	nontexturally unclassify
nontextural nonclassification	nontexturally classifiers	nontexturally unclassifiable
nontextural nonclassified	nontexturally classifies	nontexturally unclassifiability
nontextural preclassify	nontexturally classifying	nontexturally unclassifiably

nontexturally unclassification	plaintext preclassified	plaintexts counterclassifications
nontexturally unclassified	plaintext preclassifying	plaintexts declassify
nontexturally unclassifying	plaintext reclassify	plaintexts declassification
nontexturally well-classified	plaintext reclassification	plaintexts declassifications
nontexturally world-classifying	plaintext reclassifications	plaintexts declassified
plaintext classify	plaintext reclassified	plaintexts declassifies
plaintext classifiable	plaintext reclassifies	plaintexts declassifying
plaintext classic	plaintext reclassifying	plaintexts classify
plaintext classically	plaintext subclassify	plaintexts misclassify
plaintext classification	plaintext subclassification	plaintexts misclassification
plaintext classificational	plaintext subclassifications	plaintexts misclassifications
plaintext classifications	plaintext subclassified	plaintexts misclassified
plaintext classifier	plaintext subclassifies	plaintexts misclassifies
plaintext classificatory	plaintext subclassifying	plaintexts misclassifying
plaintext classified	plaintext superclassified	plaintexts nonclassifiable
plaintext classifier	plaintext unclassify	plaintexts nonclassification
plaintext classifiers	plaintext unclassifiable	plaintexts nonclassified
plaintext classifies	plaintext unclassifiableness	plaintexts preclassify
plaintext classifying	plaintext unclassifiably	plaintexts preclassification
plaintext counterclassification	plaintext unclassification	plaintexts preclassified
plaintext counterclassifications	plaintext unclassified	plaintexts preclassifying
plaintext declassify	plaintext unclassifying	plaintexts reclassify
plaintext declassification	plaintext well-classified	plaintexts reclassification
plaintext declassifications	plaintext world-classifying	plaintexts reclassifications
plaintext declassified	plaintexts classify	plaintexts reclassified
plaintext declassifies	plaintexts classifiable	plaintexts reclassifies
plaintext declassifying	plaintexts classific	plaintexts reclassifying
plaintext disclassify	plaintexts classifically	plaintexts subclassify
plaintext misclassify	plaintexts classification	plaintexts subclassification
plaintext misclassification	plaintexts classificational	plaintexts subclassifications
plaintext misclassifications	plaintexts classifications	plaintexts subclassified
plaintext misclassified	plaintexts classifier	plaintexts subclassifies
plaintext misclassifies	plaintexts classificatory	plaintexts subclassifying
plaintext misclassifying	plaintexts classified	plaintexts superclassified
plaintext nonclassifiable	plaintexts classifier	plaintexts unclassify
plaintext nonclassification	plaintexts classifiers	plaintexts unclassifiable
plaintext nonclassified	plaintexts classifies	plaintexts unclassifiableness
plaintext preclassify	plaintexts classifying	plaintexts unclassifiably
plaintext preclassification	plaintexts counterclassification	plaintexts unclassification

plaintexts unclassified	praetexta preclassifying	praetextae declassify
plaintexts unclassifying	praetexta reclassify	praetextae declassification
plaintexts well-classified	praetexta reclassification	praetextae declassifications
plaintexts world-classifying	praetexta reclassifications	praetextae declassified
praetexta classify	praetexta reclassified	praetextae declassifies
praetexta classifiable	praetexta reclassifies	praetextae declassifying
praetexta classific	praetexta reclassifying	praetextae classif
praetexta classically	praetexta subclassify	praetextae misclassify
praetexta classification	praetexta subclassification	praetextae misclassification
praetexta classificational	praetexta subclassifications	praetextae misclassifications
praetexta classifications	praetexta subclassified	praetextae misclassified
praetexta classifier	praetexta subclassifies	praetextae misclassifies
praetexta classificatory	praetexta subclassifying	praetextae misclassifying
praetexta classified	praetexta superclassified	praetextae nonclassifiable
praetexta classifier	praetexta unclassify	praetextae nonclassification
praetexta classifiers	praetexta unclassifiable	praetextae nonclassified
praetexta classifies	praetexta unclassifiability	praetextae preclassify
praetexta classifying	praetexta unclassifiably	praetextae preclassification
praetexta counterclassification	praetexta unclassification	praetextae preclassified
praetexta counterclassifications	praetexta unclassified	praetextae preclassifying
praetexta declassify	praetexta unclassifying	praetextae reclassify
praetexta declassification	praetexta well-classified	praetextae reclassification
praetexta declassifications	praetexta world-classifying	praetextae reclassifications
praetexta declassified	praetextae classify	praetextae reclassified
praetexta declassifies	praetextae classifiable	praetextae reclassifies
praetexta declassifying	praetextae classific	praetextae reclassifying
praetexta disclassify	praetextae classifically	praetextae subclassify
praetexta misclassify	praetextae classification	praetextae subclassification
praetexta misclassification	praetextae classificational	praetextae subclassifications
praetexta misclassifications	praetextae classifications	praetextae subclassified
praetexta misclassified	praetextae classifier	praetextae subclassifies
praetexta misclassifies	praetextae classificatory	praetextae subclassifying
praetexta misclassifying	praetextae classified	praetextae superclassified
praetexta nonclassifiable	praetextae classifier	praetextae unclassify
praetexta nonclassification	praetextae classifiers	praetextae unclassifiable
praetexta nonclassified	praetextae classifies	praetextae unclassifiability
praetexta preclassify	praetextae classifying	praetextae unclassifiably
praetexta preclassification	praetextae counterclassification	praetextae unclassification
praetexta preclassified	praetextae counterclassifications	praetextae unclassified

praetextae unclassifying	pretext reclassify	pretexta declassification
praetextae well-classified	pretext reclassification	pretexta declassifications
praetextae world-classifying	pretext reclassifications	pretexta declassified
pretext classify	pretext reclassified	pretexta declassifies
pretext classifiable	pretext reclassifies	pretexta declassifying
pretext classific	pretext reclassifying	pretexta classify
pretext classifically	pretext subclassify	pretexta misclassify
pretext classification	pretext subclassification	pretexta misclassification
pretext classificational	pretext subclassifications	pretexta misclassifications
pretext classifications	pretext subclassified	pretexta misclassified
pretext classifier	pretext subclassifies	pretexta misclassifies
pretext classificatory	pretext subclassifying	pretexta misclassifying
pretext classified	pretext superclassified	pretexta nonclassifiable
pretext classifier	pretext unclassify	pretexta nonclassification
pretext classifiers	pretext unclassifiable	pretexta nonclassified
pretext classifies	pretext unclassifiability	pretexta preclassify
pretext classifying	pretext unclassifiably	pretexta preclassification
pretext counterclassification	pretext unclassification	pretexta preclassified
pretext counterclassifications	pretext unclassified	pretexta preclassifying
pretext declassify	pretext unclassifying	pretexta reclassify
pretext declassification	pretext well-classified	pretexta reclassification
pretext declassifications	pretext world-classifying	pretexta reclassifications
pretext declassified	pretexta classify	pretexta reclassified
pretext declassifies	pretexta classifiable	pretexta reclassifies
pretext declassifying	pretexta classific	pretexta reclassifying
pretext declassify	pretexta classifically	pretexta subclassify
pretext misclassify	pretexta classification	pretexta subclassification
pretext misclassification	pretexta classificational	pretexta subclassifications
pretext misclassifications	pretexta classifications	pretexta subclassified
pretext misclassified	pretexta classifier	pretexta subclassifies
pretext misclassifies	pretexta classificatory	pretexta subclassifying
pretext misclassifying	pretexta classified	pretexta superclassified
pretext nonclassifiable	pretexta classifier	pretexta unclassify
pretext nonclassification	pretexta classifiers	pretexta unclassifiable
pretext nonclassified	pretexta classifies	pretexta unclassifiability
pretext preclassify	pretexta classifying	pretexta unclassifiably
pretext preclassification	pretexta counterclassification	pretexta unclassification
pretext preclassified	pretexta counterclassifications	pretexta unclassified
pretext preclassifying	pretexta declassify	pretexta unclassifying

pretexta well-classified	pretextae reclassification	pretexted declassifications
pretexta world-classifying	pretextae reclassifications	pretexted declassified
pretextae classify	pretextae reclassified	pretexted declassifies
pretextae classifiable	pretextae reclassifies	pretexted declassifying
pretextae classic	pretextae reclassifying	pretexted disclassify
pretextae classically	pretextae subclassify	pretexted misclassify
pretextae classification	pretextae subclassification	pretexted misclassification
pretextae classificational	pretextae subclassifications	pretexted misclassifications
pretextae classifications	pretextae subclassified	pretexted misclassified
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pretextae classificatory	pretextae subclassifying	pretexted misclassifying
pretextae classified	pretextae superclassified	pretexted nonclassifiable
pretextae classifier	pretextae unclassify	pretexted nonclassification
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pretextae classifies	pretextae unclassifiability	pretexted preclassify
pretextae classifying	pretextae unclassifiably	pretexted preclassification
pretextae counterclassification	pretextae unclassification	pretexted preclassified
pretextae counterclassifications	pretextae unclassified	pretexted preclassifying
pretextae declassify	pretextae unclassifying	pretexted reclassify
pretextae declassification	pretextae well-classified	pretexted reclassification
pretextae declassifications	pretextae world-classifying	pretexted reclassifications
pretextae declassified	pretexted classify	pretexted reclassified
pretextae declassifies	pretexted classifiable	pretexted reclassifies
pretextae declassifying	pretexted classific	pretexted reclassifying
pretextae disclassify	pretexted classically	pretexted subclassify
pretextae misclassify	pretexted classification	pretexted subclassification
pretextae misclassification	pretexted classificational	pretexted subclassifications
pretextae misclassifications	pretexted classifications	pretexted subclassified
pretextae misclassified	pretexted classifier	pretexted subclassifies
pretextae misclassifies	pretexted classificatory	pretexted subclassifying
pretextae misclassifying	pretexted classified	pretexted superclassified
pretextae nonclassifiable	pretexted classifier	pretexted unclassify
pretextae nonclassification	pretexted classifiers	pretexted unclassifiable
pretextae nonclassified	pretexted classifies	pretexted unclassifiability
pretextae preclassify	pretexted classifying	pretexted unclassifiably
pretextae preclassification	pretexted counterclassification	pretexted unclassification
pretextae preclassified	pretexted counterclassifications	pretexted unclassified
pretextae preclassifying	pretexted declassify	pretexted unclassifying
pretextae reclassify	pretexted declassification	pretexted well-classified

pretexted world-classifying	pretexting reclassifications	pretexts declassified
pretexting classify	pretexting reclassified	pretexts declassifies
pretexting classifiable	pretexting reclassifies	pretexts declassifying
pretexting classific	pretexting reclassifying	pretexts disclassify
pretexting classically	pretexting subclassify	pretexts misclassify
pretexting classification	pretexting subclassification	pretexts misclassification
pretexting classificational	pretexting subclassifications	pretexts misclassifications
pretexting classifications	pretexting subclassified	pretexts misclassified
pretexting classifier	pretexting subclassifies	pretexts misclassifies
pretexting classificatory	pretexting subclassifying	pretexts misclassifying
pretexting classified	pretexting superclassified	pretexts nonclassifiable
pretexting classifier	pretexting unclassify	pretexts nonclassification
pretexting classifiers	pretexting unclassifiable	pretexts nonclassified
pretexting classifies	pretexting unclassifiableness	pretexts preclassify
pretexting classifying	pretexting unclassifiably	pretexts preclassification
pretexting counterclassification	pretexting unclassification	pretexts preclassified
pretexting counterclassifications	pretexting unclassified	pretexts preclassifying
pretexting declassify	pretexting unclassifying	pretexts reclassify
pretexting declassification	pretexting well-classified	pretexts reclassification
pretexting declassifications	pretexting world-classifying	pretexts reclassifications
pretexting declassified	pretexts classify	pretexts reclassified
pretexting declassifies	pretexts classifiable	pretexts reclassifies
pretexting declassifying	pretexts classific	pretexts reclassifying
pretexting disclassify	pretexts classifically	pretexts subclassify
pretexting misclassify	pretexts classification	pretexts subclassification
pretexting misclassification	pretexts classificational	pretexts subclassifications
pretexting misclassifications	pretexts classifications	pretexts subclassified
pretexting misclassified	pretexts classifier	pretexts subclassifies
pretexting misclassifies	pretexts classificatory	pretexts subclassifying
pretexting misclassifying	pretexts classified	pretexts superclassified
pretexting nonclassifiable	pretexts classifier	pretexts unclassify
pretexting nonclassification	pretexts classifiers	pretexts unclassifiable
pretexting nonclassified	pretexts classifies	pretexts unclassifiableness
pretexting preclassify	pretexts classifying	pretexts unclassifiably
pretexting preclassification	pretexts counterclassification	pretexts unclassification
pretexting preclassified	pretexts counterclassifications	pretexts unclassified
pretexting preclassifying	pretexts declassify	pretexts unclassifying
pretexting reclassify	pretexts declassification	pretexts well-classified
pretexting reclassification	pretexts declassifications	pretexts world-classifying

pretext's classify	pretext's reclassified	pretextuous declassifies
pretext's classifiable	pretext's reclassifies	pretextuous declassifying
pretext's classic	pretext's reclassifying	pretextuous disclassify
pretext's classically	pretext's subclassify	pretextuous misclassify
pretext's classification	pretext's subclassification	pretextuous misclassification
pretext's classificational	pretext's subclassifications	pretextuous misclassifications
pretext's classifications	pretext's subclassified	pretextuous misclassified
pretext's classifier	pretext's subclassifies	pretextuous misclassifies
pretext's classificatory	pretext's subclassifying	pretextuous misclassifying
pretext's classified	pretext's superclassified	pretextuous nonclassifiable
pretext's classifier	pretext's unclassify	pretextuous nonclassification
pretext's classifiers	pretext's unclassifiable	pretextuous nonclassified
pretext's classifies	pretext's unclassifiability	pretextuous preclassify
pretext's classifying	pretext's unclassification	pretextuous preclassification
pretext's counterclassification	pretext's unclassified	pretextuous preclassified
pretext's counterclassifications	pretext's unclassifying	pretextuous preclassifying
pretext's declassify	pretext's well-classified	pretextuous reclassify
pretext's declassification	pretext's world-classifying	pretextuous reclassification
pretext's declassifications	pretextuous classify	pretextuous reclassified
pretext's declassified	pretextuous classifiable	pretextuous reclassifies
pretext's declassifies	pretextuous classific	pretextuous reclassifying
pretext's declassifying	pretextuous classifically	pretextuous subclassify
pretext's misclassify	pretextuous classification	pretextuous subclassification
pretext's misclassification	pretextuous classificational	pretextuous subclassifications
pretext's misclassifications	pretextuous classifications	pretextuous subclassified
pretext's misclassified	pretextuous classifier	pretextuous subclassifies
pretext's misclassifies	pretextuous classificatory	pretextuous subclassifying
pretext's misclassifying	pretextuous classified	pretextuous superclassified
pretext's nonclassifiable	pretextuous classifier	pretextuous unclassify
pretext's nonclassification	pretextuous classifiers	pretextuous unclassifiable
pretext's nonclassified	pretextuous classifies	pretextuous unclassifiability
pretext's preclassify	pretextuous classifying	pretextuous unclassifiably
pretext's preclassification	pretextuous counterclassification	pretextuous unclassification
pretext's preclassified	pretextuous counterclassifications	pretextuous unclassified
pretext's preclassifying	pretextuous declassify	pretextuous unclassifying
pretext's reclassify	pretextuous declassification	pretextuous well-classified
pretext's reclassification	pretextuous declassifications	pretextuous world-classifying
pretext's reclassifications	pretextuous declassified	pretext classify

protext classifiable	protext reclassifies	retexture declassifying
protext classic	protext reclassifying	retexture disclassify
protext classically	protext subclassify	retexture misclassify
protext classification	protext subclassification	retexture misclassification
protext classificational	protext subclassifications	retexture misclassifications
protext classifications	protext subclassified	retexture misclassified
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protext classificatory	protext subclassifying	retexture misclassifying
protext classified	protext superclassified	retexture nonclassifiable
protext classifier	protext unclassify	retexture nonclassification
protext classifiers	protext unclassifiable	retexture nonclassified
protext classifies	protext unclassifiableness	retexture preclassify
protext classifying	protext unclassifiably	retexture preclassification
protext counterclassification	protext unclassification	retexture preclassified
protext counterclassifications	protext unclassified	retexture preclassifying
protext declassify	protext unclassifying	retexture reclassify
protext declassification	protext well-classified	retexture reclassification
protext declassifications	protext world-classifying	retexture reclassifications
protext declassified	retexture classify	retexture reclassified
protext declassifies	retexture classifiable	retexture reclassifies
protext declassifying	retexture classific	retexture reclassifying
protext declassify	retexture classifically	retexture subclassify
protext misclassify	retexture classification	retexture subclassification
protext misclassification	retexture classificational	retexture subclassifications
protext misclassifications	retexture classifications	retexture subclassified
protext misclassified	retexture classifier	retexture subclassifies
protext misclassifies	retexture classificatory	retexture subclassifying
protext misclassifying	retexture classified	retexture superclassified
protext nonclassifiable	retexture classifier	retexture unclassify
protext nonclassification	retexture classifiers	retexture unclassifiable
protext nonclassified	retexture classifies	retexture unclassifiableness
protext preclassify	retexture classifying	retexture unclassifiably
protext preclassification	retexture counterclassification	retexture unclassification
protext preclassified	retexture counterclassifications	retexture unclassified
protext preclassifying	retexture declassify	retexture unclassifying
protext reclassify	retexture declassification	retexture well-classified
protext reclassification	retexture declassifications	retexture world-classifying
protext reclassifications	retexture declassified	rough-textured classify
protext reclassified	retexture declassifies	rough-textured classifiable

rough-textured classific	rough-textured reclassifies	semitextural declassifying
rough-textured classically	rough-textured reclassifying	semitextural classify
rough-textured classification	rough-textured subclassify	semitextural misclassify
rough-textured classificational	rough-textured subclassification	semitextural misclassification
rough-textured classifications	rough-textured subclassifications	semitextural misclassifications
rough-textured classifier	rough-textured subclassified	semitextural misclassified
rough-textured classificatory	rough-textured subclassifies	semitextural misclassifies
rough-textured classified	rough-textured subclassifying	semitextural misclassifying
rough-textured classifier	rough-textured superclassified	semitextural nonclassifiable
rough-textured classifiers	rough-textured unclassify	semitextural nonclassification
rough-textured classifies	rough-textured unclassifiable	semitextural nonclassified
rough-textured classifying	rough-textured unclassifiability	semitextural preclassify
rough-textured counterclassification	rough-textured unclassifiably	semitextural preclassification
rough-textured counterclassifications	rough-textured unclassification	semitextural preclassified
	rough-textured unclassified	semitextural preclassifying
rough-textured declassify	rough-textured unclassifying	semitextural reclassify
rough-textured declassification	rough-textured well-classified	semitextural reclassification
rough-textured declassifications	rough-textured world-classifying	semitextural reclassifications
rough-textured declassified	semitextural classify	semitextural reclassified
rough-textured declassifies	semitextural classifiable	semitextural reclassifies
rough-textured declassifying	semitextural classific	semitextural reclassifying
rough-textured classify	semitextural classificaly	semitextural subclassify
rough-textured misclassify	semitextural classification	semitextural subclassification
rough-textured misclassification	semitextural classificational	semitextural subclassifications
rough-textured misclassifications	semitextural classifications	semitextural subclassified
rough-textured misclassified	semitextural classifier	semitextural subclassifies
rough-textured misclassifies	semitextural classificatory	semitextural subclassifying
rough-textured misclassifying	semitextural classified	semitextural superclassified
rough-textured nonclassifiable	semitextural classifier	semitextural unclassify
rough-textured nonclassification	semitextural classifiers	semitextural unclassifiable
rough-textured nonclassified	semitextural classifies	semitextural unclassifiability
rough-textured preclassify	semitextural classifying	semitextural unclassifiably
rough-textured preclassification	semitextural counterclassification	semitextural unclassification
rough-textured preclassified	semitextural counterclassifications	semitextural unclassified
rough-textured preclassifying	semitextural declassify	semitextural unclassifying
rough-textured reclassify	semitextural declassification	semitextural well-classified
rough-textured reclassification	semitextural declassifications	semitextural world-classifying
rough-textured reclassifications	semitextural declassified	semitexturally classify
rough-textured reclassified	semitextural declassifies	semitexturally classifiable

semitexturally classific	semitexturally reclassifying	silky-textured disclassify
semitexturally classically	semitexturally subclassify	silky-textured misclassify
semitexturally classification	semitexturally subclassification	silky-textured misclassification
semitexturally classificational	semitexturally classifications	silky-textured misclassifications
semitexturally classifications	semitexturally classified	silky-textured misclassified
semitexturally classifier	semitexturally classifies	silky-textured misclassifies
semitexturally classificatory	semitexturally classifying	silky-textured misclassifying
semitexturally classified	semitexturally superclassified	silky-textured nonclassifiable
semitexturally classifier	semitexturally unclassify	silky-textured nonclassification
semitexturally classifiers	semitexturally unclassifiable	silky-textured nonclassified
semitexturally classifies	semitexturally unclassifiability	silky-textured preclassify
semitexturally classifying	semitexturally unclassifiably	silky-textured preclassification
semitexturally counterclassification	semitexturally unclassification	silky-textured preclassified
semitexturally counterclassifications	semitexturally unclassified	silky-textured preclassifying
semitexturally declassify	semitexturally unclassifying	silky-textured reclassify
semitexturally declassification	semitexturally well-classified	silky-textured reclassification
semitexturally declassifications	semitexturally world-classifying	silky-textured reclassifications
semitexturally declassified	silky-textured classify	silky-textured reclassified
semitexturally declassifies	silky-textured classifiable	silky-textured reclassifies
semitexturally declassifying	silky-textured classific	silky-textured reclassifying
semitexturally classifify	silky-textured classically	silky-textured subclassify
semitexturally misclassify	silky-textured classification	silky-textured subclassification
semitexturally misclassification	silky-textured classificational	silky-textured subclassifications
semitexturally misclassifications	silky-textured classifications	silky-textured subclassified
semitexturally misclassified	silky-textured classifier	silky-textured subclassifies
semitexturally misclassifies	silky-textured classificatory	silky-textured subclassifying
semitexturally misclassifying	silky-textured classified	silky-textured superclassified
semitexturally nonclassifiable	silky-textured classifier	silky-textured unclassify
semitexturally nonclassification	silky-textured classifiers	silky-textured unclassifiable
semitexturally nonclassified	silky-textured classifies	silky-textured unclassifiability
semitexturally preclassify	silky-textured classifying	silky-textured unclassifiably
semitexturally preclassification	silky-textured counterclassification	silky-textured unclassification
semitexturally preclassified	silky-textured counterclassifications	silky-textured unclassified
semitexturally preclassifying	silky-textured declassify	silky-textured unclassifying
semitexturally reclassify	silky-textured declassification	silky-textured well-classified
semitexturally reclassification	silky-textured declassifications	silky-textured world-classifying
semitexturally reclassifications	silky-textured declassified	smooth-textured classify
semitexturally reclassified	silky-textured declassifies	smooth-textured classifiable
semitexturally reclassifies	silky-textured declassifying	smooth-textured classific

smooth-textured classically	smooth-textured reclassifying	spintext disclassify
smooth-textured classification	smooth-textured subclassify	spintext misclassify
smooth-textured classificational	smooth-textured subclassification	spintext misclassification
smooth-textured classifications	smooth-textured subclassifications	spintext misclassifications
smooth-textured classifier	smooth-textured subclassified	spintext misclassified
smooth-textured classificatory	smooth-textured subclassifies	spintext misclassifies
smooth-textured classified	smooth-textured subclassifying	spintext misclassifying
smooth-textured classifier	smooth-textured superclassified	spintext nonclassifiable
smooth-textured classifiers	smooth-textured unclassify	spintext nonclassification
smooth-textured classifies	smooth-textured unclassifiable	spintext nonclassified
smooth-textured classifying	smooth-textured unclassifiability	spintext preclassify
smooth-textured counterclassification	smooth-textured unclassifiably	spintext preclassification
smooth-textured counterclassifications	smooth-textured unclassification	spintext preclassified
smooth-textured declassify	smooth-textured unclassified	spintext preclassifying
smooth-textured declassification	smooth-textured unclassifying	spintext reclassify
smooth-textured declassifications	smooth-textured well-classified	spintext reclassification
smooth-textured declassified	smooth-textured world-classifying	spintext reclassifications
smooth-textured declassifies	spintext classify	spintext reclassified
smooth-textured declassifying	spintext classifiable	spintext reclassifies
smooth-textured declassifying	spintext classific	spintext reclassifying
smooth-textured declassifying	spintext classifically	spintext subclassify
smooth-textured declassifying	spintext classification	spintext subclassification
smooth-textured misclassify	spintext classificational	spintext subclassifications
smooth-textured misclassification	spintext classifications	spintext subclassified
smooth-textured misclassifications	spintext classifier	spintext subclassifies
smooth-textured misclassified	spintext classificatory	spintext subclassifying
smooth-textured misclassifies	spintext classified	spintext superclassified
smooth-textured misclassifying	spintext classifier	spintext unclassify
smooth-textured nonclassifiable	spintext classifiers	spintext unclassifiable
smooth-textured nonclassification	spintext classifies	spintext unclassifiability
smooth-textured nonclassified	spintext classifying	spintext unclassifiability
smooth-textured preclassify	spintext counterclassification	spintext unclassification
smooth-textured preclassification	spintext counterclassifications	spintext unclassified
smooth-textured preclassified	spintext declassify	spintext unclassifying
smooth-textured preclassifying	spintext declassification	spintext well-classified
smooth-textured reclassify	spintext declassifications	spintext world-classifying
smooth-textured reclassification	spintext declassified	spin-text classify
smooth-textured reclassifications	spintext declassifies	spin-text classifiable
smooth-textured reclassified	spintext declassifying	spin-text classific
smooth-textured reclassifies		

spin-text classically	spin-text subclassify	subtext misclassify
spin-text classification	spin-text subclassification	subtext misclassification
spin-text classificational	spin-text subclassifications	subtext misclassifications
spin-text classifications	spin-text subclassified	subtext misclassified
spin-text classifier	spin-text subclassifies	subtext misclassifies
spin-text classificatory	spin-text subclassifying	subtext misclassifying
spin-text classified	spin-text superclassified	subtext nonclassifiable
spin-text classifier	spin-text unclassify	subtext nonclassification
spin-text classifiers	spin-text unclassifiable	subtext nonclassified
spin-text classifies	spin-text unclassifiableness	subtext preclassify
spin-text classifying	spin-text unclassifiably	subtext preclassification
spin-text counterclassification	spin-text unclassification	subtext preclassified
spin-text counterclassifications	spin-text unclassified	subtext preclassifying
spin-text declassify	spin-text unclassifying	subtext reclassify
spin-text declassification	spin-text well-classified	subtext reclassification
spin-text declassifications	spin-text world-classifying	subtext reclassifications
spin-text declassified	subtext classify	subtext reclassified
spin-text declassifies	subtext classifiable	subtext reclassifies
spin-text declassifying	subtext classific	subtext reclassifying
spin-text disclassify	subtext classifically	subtext subclassify
spin-text misclassify	subtext classification	subtext subclassification
spin-text misclassification	subtext classificational	subtext subclassifications
spin-text misclassifications	subtext classifications	subtext subclassified
spin-text misclassified	subtext classifier	subtext subclassifies
spin-text misclassifies	subtext classificatory	subtext subclassifying
spin-text misclassifying	subtext classified	subtext superclassified
spin-text nonclassifiable	subtext classifier	subtext unclassify
spin-text nonclassification	subtext classifiers	subtext unclassifiable
spin-text nonclassified	subtext classifies	subtext unclassifiableness
spin-text preclassify	subtext classifying	subtext unclassifiably
spin-text preclassification	subtext counterclassification	subtext unclassification
spin-text preclassified	subtext counterclassifications	subtext unclassified
spin-text preclassifying	subtext declassify	subtext unclassifying
spin-text reclassify	subtext declassification	subtext well-classified
spin-text reclassification	subtext declassifications	subtext world-classifying
spin-text reclassifications	subtext declassified	subtexts classify
spin-text reclassified	subtext declassifies	subtexts classifiable
spin-text reclassifies	subtext declassifying	subtexts classific
spin-text reclassifying	subtext disclassify	subtexts classifically

subtexts classification	subtexts subclassification	teletext misclassification
subtexts classificational	subtexts subclassifications	teletext misclassifications
subtexts classifications	subtexts subclassified	teletext misclassified
subtexts classifier	subtexts subclassifies	teletext misclassifies
subtexts classificatory	subtexts subclassifying	teletext misclassifying
subtexts classified	subtexts superclassified	teletext nonclassifiable
subtexts classifier	subtexts unclassify	teletext nonclassification
subtexts classifiers	subtexts unclassifiable	teletext nonclassified
subtexts classifies	subtexts unclassifiability	teletext preclassify
subtexts classifying	subtexts unclassifiably	teletext preclassification
subtexts counterclassification	subtexts unclassification	teletext preclassified
subtexts counterclassifications	subtexts unclassified	teletext preclassifying
subtexts declassify	subtexts unclassifying	teletext reclassify
subtexts declassification	subtexts well-classified	teletext reclassification
subtexts declassifications	subtexts world-classifying	teletext reclassifications
subtexts declassified	teletext classify	teletext reclassified
subtexts declassifies	teletext classifiable	teletext reclassifies
subtexts declassifying	teletext classific	teletext reclassifying
subtexts disclassify	teletext classifically	teletext subclassify
subtexts misclassify	teletext classification	teletext subclassification
subtexts misclassification	teletext classificational	teletext subclassifications
subtexts misclassifications	teletext classifications	teletext subclassified
subtexts misclassified	teletext classifier	teletext subclassifies
subtexts misclassifies	teletext classificatory	teletext subclassifying
subtexts misclassifying	teletext classified	teletext superclassified
subtexts nonclassifiable	teletext classifier	teletext unclassify
subtexts nonclassification	teletext classifiers	teletext unclassifiable
subtexts nonclassified	teletext classifies	teletext unclassifiability
subtexts preclassify	teletext classifying	teletext unclassifiably
subtexts preclassification	teletext counterclassification	teletext unclassification
subtexts preclassified	teletext counterclassifications	teletext unclassified
subtexts preclassifying	teletext declassify	teletext unclassifying
subtexts reclassify	teletext declassification	teletext well-classified
subtexts reclassification	teletext declassifications	teletext world-classifying
subtexts reclassifications	teletext declassified	text classify
subtexts reclassified	teletext declassifies	text classifiable
subtexts reclassifies	teletext declassifying	text classific
subtexts reclassifying	teletext disclassify	text classically
subtexts subclassify	teletext misclassify	text classification

text classificational	text subclassifications	textarian misclassifications
text classifications	text subclassified	textarian misclassified
text classifier	text subclassifies	textarian misclassifies
text classificatory	text subclassifying	textarian misclassifying
text classified	text superclassified	textarian nonclassifiable
text classifier	text unclassify	textarian nonclassification
text classifiers	text unclassifiable	textarian nonclassified
text classifies	text unclassifiability	textarian preclassify
text classifying	text unclassifiably	textarian preclassification
text counterclassification	text unclassification	textarian preclassified
text counterclassifications	text unclassified	textarian preclassifying
text declassify	text unclassifying	textarian reclassify
text declassification	text well-classified	textarian reclassification
text declassifications	text world-classifying	textarian reclassifications
text declassified	textarian classify	textarian reclassified
text declassifies	textarian classifiable	textarian reclassifies
text declassifying	textarian classific	textarian reclassifying
text disclassify	textarian classifically	textarian subclassify
text misclassify	textarian classification	textarian subclassification
text misclassification	textarian classificational	textarian subclassifications
text misclassifications	textarian classifications	textarian subclassified
text misclassified	textarian classifier	textarian subclasses
text misclassifies	textarian classificatory	textarian subclassifying
text misclassifying	textarian classified	textarian superclassified
text nonclassifiable	textarian classifier	textarian unclassify
text nonclassification	textarian classifiers	textarian unclassifiable
text nonclassified	textarian classifies	textarian unclassifiability
text preclassify	textarian classifying	textarian unclassifiably
text preclassification	textarian counterclassification	textarian unclassification
text preclassified	textarian counterclassifications	textarian unclassified
text preclassifying	textarian declassify	textarian unclassifying
text reclassify	textarian declassification	textarian well-classified
text reclassification	textarian declassifications	textarian world-classifying
text reclassifications	textarian declassified	textbook classify
text reclassified	textarian declassifies	textbook classifiable
text reclassifies	textarian declassifying	textbook classific
text reclassifying	textarian disclassify	textbook classically
text subclassify	textarian misclassify	textbook classification
text subclassification	textarian misclassification	textbook classificational

textbook classifications	textbook subclassified	text-book misclassified
textbook classifier	textbook subclassifies	text-book misclassifies
textbook classificatory	textbook subclassifying	text-book misclassifying
textbook classified	textbook superclassified	text-book nonclassifiable
textbook classifier	textbook unclassify	text-book nonclassification
textbook classifiers	textbook unclassifiable	text-book nonclassified
textbook classifies	textbook unclassifiability	text-book preclassify
textbook classifying	textbook unclassifiably	text-book preclassification
textbook counterclassification	textbook unclassification	text-book preclassified
textbook counterclassifications	textbook unclassified	text-book preclassifying
textbook declassify	textbook unclassifying	text-book reclassify
textbook declassification	textbook well-classified	text-book reclassification
textbook declassifications	textbook world-classifying	text-book reclassifications
textbook declassified	text-book classify	text-book reclassified
textbook declassifies	text-book classifiable	text-book reclassifies
textbook declassifying	text-book classific	text-book reclassifying
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textbook misclassify	text-book classification	text-book subclassification
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textbook subclassify	text-book misclassify	textbookish classification
textbook subclassification	text-book misclassification	textbookish classificational
textbook subclassifications	text-book misclassifications	textbookish classifications

textbookish classifier	textbookish subclassifies	textbookless misclassifies
textbookish classificatory	textbookish subclassifying	textbookless misclassifying
textbookish classified	textbookish superclassified	textbookless nonclassifiable
textbookish classifier	textbookish unclassify	textbookless nonclassification
textbookish classifiers	textbookish unclassifiable	textbookless nonclassified
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textbookish preclassify	textbookless classifying	textbookless unclassifiably
textbookish preclassification	textbookless counterclassification	textbookless unclassification
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textbookish preclassifying	textbookless declassify	textbookless unclassifying
textbookish reclassify	textbookless declassification	textbookless well-classified
textbookish reclassification	textbookless declassifications	textbookless world-classifying
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textbookish reclassifies	textbookless declassifying	textbooks classific
textbookish reclassifying	textbookless disclassify	textbooks classifically
textbookish subclassify	textbookless misclassify	textbooks classification
textbookish subclassification	textbookless misclassification	textbooks classificational
textbookish sub classifications	textbookless misclassifications	textbooks classifications
textbookish subclassified	textbookless misclassified	textbooks classificator

textbooks classificatory	textbooks subclassifying	textbook's misclassifying
textbooks classified	textbooks superclassified	textbook's nonclassifiable
textbooks classifier	textbooks unclassify	textbook's nonclassification
textbooks classifiers	textbooks unclassifiable	textbook's nonclassified
textbooks classifies	textbooks unclassifiableness	textbook's preclassify
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textbooks declassification	textbooks well-classified	textbook's reclassification
textbooks declassifications	textbooks world-classifying	textbook's reclassifications
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textbooks misclassifications	textbook's classifications	textbook's subclassified
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textbooks misclassifies	textbook's classificatory	textbook's subclassifying
textbooks misclassifying	textbook's classified	textbook's superclassified
textbooks nonclassifiable	textbook's classifier	textbook's unclassify
textbooks nonclassification	textbook's classifiers	textbook's unclassifiable
textbooks nonclassified	textbook's classifies	textbook's unclassifiableness
textbooks preclassify	textbook's classifying	textbook's unclassifiably
textbooks preclassification	textbook's counterclassification	textbook's unclassification
textbooks preclassified	textbook's counterclassifications	textbook's unclassified
textbooks preclassifying	textbook's declassify	textbook's unclassifying
textbooks reclassify	textbook's declassification	textbook's well-classified
textbooks reclassification	textbook's declassifications	textbook's world-classifying
textbooks reclassifications	textbook's declassified	text-hand classify
textbooks reclassified	textbook's declassifies	text-hand classifiable
textbooks reclassifies	textbook's declassifying	text-hand classific
textbooks reclassifying	textbook's disclassify	text-hand classifically
textbooks subclassify	textbook's misclassify	text-hand classification
textbooks subclassification	textbook's misclassification	text-hand classificational
textbooks subclassifications	textbook's misclassifications	text-hand classifications
textbooks subclassified	textbook's misclassified	text-hand classifier
textbooks subclassifies	textbook's misclassifies	text-hand classificatory

text-hand classified	text-hand superclassified	textiferous nonclassifiable
text-hand classifier	text-hand unclassify	textiferous nonclassification
text-hand classifiers	text-hand unclassifiable	textiferous nonclassified
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text-hand counterclassifications	text-hand unclassified	textiferous preclassifying
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text-hand declassified	textiferous classify	textiferous reclassified
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text-hand classify	textiferous classifically	textiferous subclassify
text-hand misclassify	textiferous classification	textiferous subclassification
text-hand misclassification	textiferous classificational	textiferous subclassifications
text-hand misclassifications	textiferous classifications	textiferous subclassified
text-hand misclassified	textiferous classifier	textiferous subclassifies
text-hand misclassifies	textiferous classificatory	textiferous subclassifying
text-hand misclassifying	textiferous classified	textiferous superclassified
text-hand nonclassifiable	textiferous classifier	textiferous unclassify
text-hand nonclassification	textiferous classifiers	textiferous unclassifiable
text-hand nonclassified	textiferous classifies	textiferous unclassifiableness
text-hand preclassify	textiferous classifying	textiferous unclassifiably
text-hand preclassification	textiferous counterclassification	textiferous unclassification
text-hand preclassified	textiferous counterclassifications	textiferous unclassified
text-hand preclassifying	textiferous declassify	textiferous unclassifying
text-hand reclassify	textiferous declassification	textiferous well-classified
text-hand reclassification	textiferous declassifications	textiferous world-classifying
text-hand reclassifications	textiferous declassified	textile classify
text-hand reclassified	textiferous declassifies	textile classifiable
text-hand reclassifies	textiferous declassifying	textile classific
text-hand reclassifying	textiferous disclassify	textile classifically
text-hand subclassify	textiferous misclassify	textile classification
text-hand subclassification	textiferous misclassification	textile classificational
text-hand subclassifications	textiferous misclassifications	textile classifications
text-hand subclassified	textiferous misclassified	textile classifier
text-hand subclassifies	textiferous misclassifies	textile classificatory
text-hand subclassifying	textiferous misclassifying	textile classified

textile classifier	textile unclassify	textiles nonclassification
textile classifiers	textile unclassifiable	textiles nonclassified
textile classifies	textile unclassifiableness	textiles preclassify
textile classifying	textile unclassifiably	textiles preclassification
textile counterclassification	textile unclassification	textiles preclassified
textile counterclassifications	textile unclassified	textiles preclassifying
textile declassify	textile unclassifying	textiles reclassify
textile declassification	textile well-classified	textiles reclassification
textile declassifications	textile world-classifying	textiles reclassifications
textile declassified	textiles classify	textiles reclassified
textile declassifies	textiles classifiable	textiles reclassifies
textile declassifying	textiles classic	textiles reclassifying
textile classify	textiles classifically	textiles subclassify
textile misclassify	textiles classification	textiles subclassification
textile misclassification	textiles classificational	textiles subclassifications
textile misclassifications	textiles classifications	textiles subclassified
textile misclassified	textiles classifier	textiles subclassifies
textile misclassifies	textiles classificatory	textiles subclassifying
textile misclassifying	textiles classified	textiles superclassified
textile nonclassifiable	textiles classifier	textiles unclassify
textile nonclassification	textiles classifiers	textiles unclassifiable
textile nonclassified	textiles classifies	textiles unclassifiableness
textile preclassify	textiles classifying	textiles unclassifiably
textile preclassification	textiles counterclassification	textiles unclassification
textile preclassified	textiles counterclassifications	textiles unclassified
textile preclassifying	textiles declassify	textiles unclassifying
textile reclassify	textiles declassification	textiles well-classified
textile reclassification	textiles declassifications	textiles world-classifying
textile reclassifications	textiles declassified	textile's classify
textile reclassified	textiles declassifies	textile's classifiable
textile reclassifies	textiles declassifying	textile's classific
textile reclassifying	textiles disclassify	textile's classically
textile subclassify	textiles misclassify	textile's classification
textile subclassification	textiles misclassification	textile's classificational
textile subclassifications	textiles misclassifications	textile's classifications
textile subclassified	textiles misclassified	textile's classifier
textile subclassifies	textiles misclassifies	textile's classificatory
textile subclassifying	textiles misclassifying	textile's classified
textile superclassified	textiles nonclassifiable	textile's classifier

textile's classifiers	textile's unclassifiable	textilist nonclassified
textile's classifies	textile's unclassifiability	textilist preclassify
textile's classifying	textile's unclassifiably	textilist preclassification
textile's counterclassification	textile's unclassification	textilist preclassified
textile's counterclassifications	textile's unclassified	textilist preclassifying
textile's declassify	textile's unclassifying	textilist reclassify
textile's declassification	textile's well-classified	textilist reclassification
textile's declassifications	textile's world-classifying	textilist reclassifications
textile's declassified	textilist classify	textilist reclassified
textile's declassifies	textilist classifiable	textilist reclassifies
textile's declassifying	textilist classific	textilist reclassifying
textile's disclassify	textilist classifically	textilist subclassify
textile's misclassify	textilist classification	textilist subclassification
textile's misclassification	textilist classificational	textilist subclassifications
textile's misclassifications	textilist classifications	textilist subclassified
textile's misclassified	textilist classifier	textilist subclassifies
textile's misclassifies	textilist classificatory	textilist subclassifying
textile's misclassifying	textilist classified	textilist superclassified
textile's nonclassifiable	textilist classifier	textilist unclassify
textile's nonclassification	textilist classifiers	textilist unclassifiable
textile's nonclassified	textilist classifies	textilist unclassifiability
textile's preclassify	textilist classifying	textilist unclassifiably
textile's preclassification	textilist counterclassification	textilist unclassification
textile's preclassified	textilist counterclassifications	textilist unclassified
textile's preclassifying	textilist declassify	textilist unclassifying
textile's reclassify	textilist declassification	textilist well-classified
textile's reclassification	textilist declassifications	textilist world-classifying
textile's reclassifications	textilist declassified	textless classify
textile's reclassified	textilist declassifies	textless classifiable
textile's reclassifies	textilist declassifying	textless classific
textile's reclassifying	textilist disclassify	textless classically
textile's subclassify	textilist misclassify	textless classification
textile's subclassification	textilist misclassification	textless classificational
textile's subclassifications	textilist misclassifications	textless classifications
textile's subclassified	textilist misclassified	textless classificator
textile's subclassifies	textilist misclassifies	textless classificatory
textile's subclassifying	textilist misclassifying	textless classified
textile's superclassified	textilist nonclassifiable	textless classifier
textile's unclassify	textilist nonclassification	textless classifiers

textless classifies	textless unclassifiability	textlet preclassify
textless classifying	textless unclassifiably	textlet preclassification
textless counterclassification	textless unclassification	textlet preclassified
textless counterclassifications	textless unclassified	textlet preclassifying
textless declassify	textless unclassifying	textlet reclassify
textless declassification	textless well-classified	textlet reclassification
textless declassifications	textless world-classifying	textlet reclassifications
textless declassified	textlet classify	textlet reclassified
textless declassifies	textlet classifiable	textlet reclassifies
textless declassifying	textlet classific	textlet reclassifying
textless disclassify	textlet classifically	textlet subclassify
textless misclassify	textlet classification	textlet subclassification
textless misclassification	textlet classificational	textlet classifications
textless misclassifications	textlet classifications	textlet subclassified
textless misclassified	textlet classifier	textlet subclassifies
textless misclassifies	textlet classificatory	textlet subclassifying
textless misclassifying	textlet classified	textlet superclassified
textless nonclassifiable	textlet classifier	textlet unclassify
textless nonclassification	textlet classifiers	textlet unclassifiable
textless nonclassified	textlet classifies	textlet unclassifiability
textless preclassify	textlet classifying	textlet unclassifiably
textless preclassification	textlet counterclassification	textlet unclassification
textless preclassified	textlet counterclassifications	textlet unclassified
textless preclassifying	textlet declassify	textlet unclassifying
textless reclassify	textlet declassification	textlet well-classified
textless reclassification	textlet declassifications	textlet world-classifying
textless reclassifications	textlet declassified	text-letter classify
textless reclassified	textlet declassifies	text-letter classifiable
textless reclassifies	textlet declassifying	text-letter classific
textless reclassifying	textlet classifify	text-letter classifically
textless subclassify	textlet misclassify	text-letter classification
textless subclassification	textlet misclassification	text-letter classificational
textless subclassifications	textlet misclassifications	text-letter classifications
textless subclassified	textlet misclassified	text-letter classifier
textless subclassifies	textlet misclassifies	text-letter classificatory
textless subclassifying	textlet misclassifying	text-letter classified
textless superclassified	textlet nonclassifiable	text-letter classifier
textless unclassify	textlet nonclassification	text-letter classifiers
textless unclassifiable	textlet nonclassified	text-letter classifies

text-letter classifying	text-letter unclassifiably	textman preclassification
text-letter counterclassification	text-letter unclassification	textman preclassified
text-letter counterclassifications	text-letter unclassified	textman preclassifying
text-letter declassify	text-letter unclassifying	textman reclassify
text-letter declassification	text-letter well-classified	textman reclassification
text-letter declassifications	text-letter world-classifying	textman reclassifications
text-letter declassified	textman classify	textman reclassified
text-letter declassifies	textman classifiable	textman reclassifies
text-letter declassifying	textman classific	textman reclassifying
text-letter classify	textman classically	textman subclassify
text-letter misclassify	textman classification	textman subclassification
text-letter misclassification	textman classificational	textman subclassifications
text-letter misclassifications	textman classifications	textman subclassified
text-letter misclassified	textman classifier	textman subclassifies
text-letter misclassifies	textman classificatory	textman subclassifying
text-letter misclassifying	textman classified	textman superclassified
text-letter nonclassifiable	textman classifier	textman unclassify
text-letter nonclassification	textman classifiers	textman unclassifiable
text-letter nonclassified	textman classifies	textman unclassifiability
text-letter preclassify	textman classifying	textman unclassifiably
text-letter preclassification	textman counterclassification	textman unclassification
text-letter preclassified	textman counterclassifications	textman unclassified
text-letter preclassifying	textman declassify	textman unclassifying
text-letter reclassify	textman declassification	textman well-classified
text-letter reclassification	textman declassifications	textman world-classifying
text-letter reclassifications	textman declassified	textorial classify
text-letter reclassified	textman declassifies	textorial classifiable
text-letter reclassifies	textman declassifying	textorial classific
text-letter reclassifying	textman disclassify	textorial classifically
text-letter subclassify	textman misclassify	textorial classification
text-letter subclassification	textman misclassification	textorial classificational
text-letter subclassifications	textman misclassifications	textorial classifications
text-letter subclassified	textman misclassified	textorial classifier
text-letter subclassifies	textman misclassifies	textorial classificatory
text-letter subclassifying	textman misclassifying	textorial classified
text-letter superclassified	textman nonclassifiable	textorial classifier
text-letter unclassify	textman nonclassification	textorial classifiers
text-letter unclassifiable	textman nonclassified	textorial classifies
text-letter unclassifiability	textman preclassify	textorial classifying

textorial counterclassification	textorial unclassification	textrine preclassified
textorial counterclassifications	textorial unclassified	textrine preclassifying
textorial declassify	textorial unclassifying	textrine reclassify
textorial declassification	textorial well-classified	textrine reclassification
textorial declassifications	textorial world-classifying	textrine reclassifications
textorial declassified	textrine classify	textrine reclassified
textorial declassifies	textrine classifiable	textrine reclassifies
textorial declassifying	textrine classic	textrine reclassifying
textorial disclassify	textrine classically	textrine subclassify
textorial misclassify	textrine classification	textrine subclassification
textorial misclassification	textrine classificational	textrine subclassifications
textorial misclassifications	textrine classifications	textrine subclassified
textorial misclassified	textrine classifier	textrine subclassifies
textorial misclassifies	textrine classificatory	textrine subclassifying
textorial misclassifying	textrine classified	textrine superclassified
textorial nonclassifiable	textrine classifier	textrine unclassify
textorial nonclassification	textrine classifiers	textrine unclassifiable
textorial nonclassified	textrine classifies	textrine unclassifiability
textorial preclassify	textrine classifying	textrine unclassifiably
textorial preclassification	textrine counterclassification	textrine unclassification
textorial preclassified	textrine counterclassifications	textrine unclassified
textorial preclassifying	textrine declassify	textrine unclassifying
textorial reclassify	textrine declassification	textrine well-classified
textorial reclassification	textrine declassifications	textrine world-classifying
textorial reclassifications	textrine declassified	texts classify
textorial reclassified	textrine declassifies	texts classifiable
textorial reclassifies	textrine declassifying	texts classific
textorial reclassifying	textrine disclassify	texts classically
textorial subclassify	textrine misclassify	texts classification
textorial subclassification	textrine misclassification	texts classificational
textorial subclassifications	textrine misclassifications	texts classifications
textorial subclassified	textrine misclassified	texts classifier
textorial subclassifies	textrine misclassifies	texts classificatory
textorial subclassifying	textrine misclassifying	texts classified
textorial superclassified	textrine nonclassifiable	texts classifier
textorial unclassify	textrine nonclassification	texts classifiers
textorial unclassifiable	textrine nonclassified	texts classifies
textorial unclassifiability	textrine preclassify	texts classifying
textorial unclassifiability	textrine preclassification	texts counterclassification

texts counterclassifications	texts unclassified	text's preclassifying
texts declassify	texts unclassifying	text's reclassify
texts declassification	texts well-classified	text's reclassification
texts declassifications	texts world-classifying	text's reclassifications
texts declassified	text's classify	text's reclassified
texts declassifies	text's classifiable	text's reclassifies
texts declassifying	text's classific	text's reclassifying
texts classify	text's classically	text's subclassify
texts misclassify	text's classification	text's subclassification
texts misclassification	text's classificational	text's subclassifications
texts misclassifications	text's classifications	text's subclassified
texts misclassified	text's classifier	text's subclassifies
texts misclassifies	text's classificatory	text's subclassifying
texts misclassifying	text's classified	text's superclassified
texts nonclassifiable	text's classifier	text's unclassify
texts nonclassification	text's classifiers	text's unclassifiable
texts nonclassified	text's classifies	text's unclassifiability
texts preclassify	text's classifying	text's unclassifiably
texts preclassification	text's counterclassification	text's unclassification
texts preclassified	text's counterclassifications	text's unclassified
texts preclassifying	text's declassify	text's unclassifying
texts reclassify	text's declassification	text's well-classified
texts reclassification	text's declassifications	text's world-classifying
texts reclassifications	text's declassified	textual classify
texts reclassified	text's declassifies	textual classifiable
texts reclassifies	text's declassifying	textual classific
texts reclassifying	text's disclassify	textual classifically
texts subclassify	text's misclassify	textual classification
texts subclassification	text's misclassification	textual classificational
texts subclassifications	text's misclassifications	textual classifications
texts subclassified	text's misclassified	textual classifier
texts subclassifies	text's misclassifies	textual classificatory
texts subclassifying	text's misclassifying	textual classified
texts superclassified	text's nonclassifiable	textual classifier
texts unclassify	text's nonclassification	textual classifiers
texts unclassifiable	text's nonclassified	textual classifies
texts unclassifiability	text's preclassify	textual classifying
texts unclassification	text's preclassification	textual counterclassification
	text's preclassified	textual counterclassifications

textual declassify	textual unclassifying	textualism reclassify
textual declassification	textual well-classified	textualism reclassification
textual declassifications	textual world-classifying	textualism reclassifications
textual declassified	textualism classify	textualism reclassified
textual declassifies	textualism classifiable	textualism reclassifies
textual declassifying	textualism classific	textualism reclassifying
textual classify	textualism classifically	textualism subclassify
textual misclassify	textualism classification	textualism subclassification
textual misclassification	textualism classificational	textualism subclassifications
textual misclassifications	textualism classifications	textualism subclassified
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textual preclassify	textualism classifying	textualism unclassifiably
textual preclassification	textualism counterclassification	textualism unclassification
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textual preclassifying	textualism declassify	textualism unclassifying
textual reclassify	textualism declassification	textualism well-classified
textual reclassification	textualism declassifications	textualism world-classifying
textual reclassifications	textualism declassified	textualist classify
textual reclassified	textualism declassifies	textualist classifiable
textual reclassifies	textualism declassifying	textualist classific
textual reclassifying	textualism disclassify	textualist classifically
textual subclassify	textualism misclassify	textualist classification
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textual subclassifications	textualism misclassifications	textualist classifications
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textual subclassifies	textualism misclassifies	textualist classificatory
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textual unclassify	textualism nonclassification	textualist classifiers
textual unclassifiable	textualism nonclassified	textualist classifies
textual unclassifiableness	textualism preclassify	textualist classifying
textual unclassifiably	textualism preclassification	textualist counterclassification
textual unclassification	textualism preclassified	textualist counterclassifications
textual unclassified	textualism preclassifying	textualist declassify

textualist declassification	textualist well-classified	textuality reclassification
textualist declassifications	textualist world-classifying	textuality reclassifications
textualist declassified	textuality classify	textuality reclassified
textualist declassifies	textuality classifiable	textuality reclassifies
textualist declassifying	textuality classific	textuality reclassifying
textualist disclassify	textuality classically	textuality subclassify
textualist misclassify	textuality classification	textuality subclassification
textualist misclassification	textuality classificational	textuality subclassifications
textualist misclassifications	textuality classifications	textuality subclassified
textualist misclassified	textuality classifier	textuality subclassifies
textualist misclassifies	textuality classificatory	textuality subclassifying
textualist misclassifying	textuality classified	textuality superclassified
textualist nonclassifiable	textuality classifier	textuality unclassify
textualist nonclassification	textuality classifiers	textuality unclassifiable
textualist nonclassified	textuality classifies	textuality unclassifiableness
textualist preclassify	textuality classifying	textuality unclassifiably
textualist preclassification	textuality counterclassification	textuality unclassification
textualist preclassified	textuality counterclassifications	textuality unclassified
textualist preclassifying	textuality declassify	textuality unclassifying
textualist reclassify	textuality declassification	textuality well-classified
textualist reclassification	textuality declassifications	textuality world-classifying
textualist reclassifications	textuality declassified	textually classify
textualist reclassified	textuality declassifies	textually classifiable
textualist reclassifies	textuality declassifying	textually classic
textualist reclassifying	textuality disclassify	textually classically
textualist subclassify	textuality misclassify	textually classification
textualist subclassification	textuality misclassification	textually classificational
textualist subclassifications	textuality misclassifications	textually classifications
textualist subclassified	textuality misclassified	textually classifier
textualist subclassifies	textuality misclassifies	textually classificatory
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textualist superclassified	textuality nonclassifiable	textually classifier
textualist unclassify	textuality nonclassification	textually classifiers
textualist unclassifiable	textuality nonclassified	textually classifies
textualist unclassifiableness	textuality preclassify	textually classifying
textualist unclassifiably	textuality preclassification	textually counterclassification
textualist unclassification	textuality preclassified	textually counterclassifications
textualist unclassified	textuality preclassifying	textually declassify
textualist unclassifying	textuality reclassify	textually declassification

textually declassifications	textually world-classifying	textuary reclassifications
textually declassified	textuary classify	textuary reclassified
textually declassifies	textuary classifiable	textuary reclassifies
textually declassifying	textuary classific	textuary reclassifying
textually disclassify	textuary classifically	textuary subclassify
textually misclassify	textuary classification	textuary subclassification
textually misclassification	textuary classificational	textuary subclassifications
textually misclassifications	textuary classifications	textuary subclassified
textually misclassified	textuary classifier	textuary subclassifies
textually misclassifies	textuary classificatory	textuary subclassifying
textually misclassifying	textuary classified	textuary superclassified
textually nonclassifiable	textuary classifier	textuary unclassify
textually nonclassification	textuary classifiers	textuary unclassifiable
textually nonclassified	textuary classifies	textuary unclassifiableness
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textually preclassification	textuary counterclassification	textuary unclassification
textually preclassified	textuary counterclassifications	textuary unclassified
textually preclassifying	textuary declassify	textuary unclassifying
textually reclassify	textuary declassification	textuary well-classified
textually reclassification	textuary declassifications	textuary world-classifying
textually reclassifications	textuary declassified	textuaries classify
textually reclassified	textuary declassifies	textuaries classifiable
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textually reclassifying	textuary disclassify	textuaries classifically
textually subclassify	textuary misclassify	textuaries classification
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textually subclassifications	textuary misclassifications	textuaries classifications
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textually superclassified	textuary nonclassifiable	textuaries classifier
textually unclassify	textuary nonclassification	textuaries classifiers
textually unclassifiable	textuary nonclassified	textuaries classifies
textually unclassifiableness	textuary preclassify	textuaries classifying
textually unclassifiably	textuary preclassification	textuaries counterclassification
textually unclassification	textuary preclassified	textuaries counterclassifications
textually unclassified	textuary preclassifying	textuaries declassify
textually unclassifying	textuary reclassify	textuaries declassification
textually well-classified	textuary reclassification	textuaries declassifications

textuaries declassified	textuarist classify	textuarist reclassified
textuaries declassifies	textuarist classifiable	textuarist reclassifies
textuaries declassifying	textuarist classific	textuarist reclassifying
textuaries disclassify	textuarist classifically	textuarist subclassify
textuaries misclassify	textuarist classification	textuarist subclassification
textuaries misclassification	textuarist classificational	textuarist subclassifications
textuaries misclassifications	textuarist classifications	textuarist subclassified
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textuaries misclassifies	textuarist classificatory	textuarist subclassifying
textuaries misclassifying	textuarist classified	textuarist superclassified
textuaries nonclassifiable	textuarist classifier	textuarist unclassify
textuaries nonclassification	textuarist classifiers	textuarist unclassifiable
textuaries nonclassified	textuarist classifies	textuarist unclassifiability
textuaries preclassify	textuarist classifying	textuarist unclassifiably
textuaries preclassification	textuarist counterclassification	textuarist unclassification
textuaries preclassified	textuarist counterclassifications	textuarist unclassified
textuaries preclassifying	textuarist declassify	textuarist unclassifying
textuaries reclassify	textuarist declassification	textuarist well-classified
textuaries reclassification	textuarist declassifications	textuarist world-classifying
textuaries reclassifications	textuarist declassified	textuist classify
textuaries reclassified	textuarist declassifies	textuist classifiable
textuaries reclassifies	textuarist declassifying	textuist classic
textuaries reclassifying	textuarist disclassify	textuist classically
textuaries subclassify	textuarist misclassify	textuist classification
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textuaries subclassifications	textuarist misclassifications	textuist classifications
textuaries subclassified	textuarist misclassified	textuist classifier
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textuaries unclassify	textuarist nonclassification	textuist classifiers
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textuaries unclassifiability	textuarist preclassify	textuist classifying
textuaries unclassifiably	textuarist preclassification	textuist counterclassification
textuaries unclassification	textuarist preclassified	textuist counterclassifications
textuaries unclassified	textuarist preclassifying	textuist declassify
textuaries unclassifying	textuarist reclassify	textuist declassification
textuaries well-classified	textuarist reclassification	textuist declassifications
textuaries world-classifying	textuarist reclassifications	textuist declassified

textuist declassifies	textural classifiable	textural reclassifies
textuist declassifying	textural classic	textural reclassifying
textuist disclassify	textural classically	textural subclassify
textuist misclassify	textural classification	textural subclassification
textuist misclassification	textural classificational	textural subclassifications
textuist misclassifications	textural classifications	textural subclassified
textuist misclassified	textural classifier	textural subclassifies
textuist misclassifies	textural classificatory	textural subclassifying
textuist misclassifying	textural classified	textural superclassified
textuist nonclassifiable	textural classifier	textural unclassify
textuist nonclassification	textural classifiers	textural unclassifiable
textuist nonclassified	textural classifies	textural unclassifiability
textuist preclassify	textural classifying	textural unclassifiably
textuist preclassification	textural counterclassification	textural unclassification
textuist preclassified	textural counterclassifications	textural unclassified
textuist preclassifying	textural declassify	textural unclassifying
textuist reclassify	textural declassification	textural well-classified
textuist reclassification	textural declassifications	textural world-classifying
textuist reclassifications	textural declassified	texturally classify
textuist reclassified	textural declassifies	texturally classifiable
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textuist subclassify	textural misclassify	texturally classification
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textuist unclassifiability	textural preclassify	texturally classifying
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textuist unclassifying	textural preclassifying	texturally declassify
textuist well-classified	textural reclassification	texturally declassifications
textuist world-classifying	textural reclassifications	texturally declassified
textural classify	textural reclassified	texturally declassifies

texturally declassifying	texture classic	texture reclassifying
texturally classify	texture classically	texture subclassify
texturally misclassify	texture classification	texture subclassification
texturally misclassification	texture classificational	texture classifications
texturally misclassifications	texture classifications	texture subclassified
texturally misclassified	texture classifier	texture subclassifies
texturally misclassifies	texture classificatory	texture subclassifying
texturally misclassifying	texture classified	texture superclassified
texturally nonclassifiable	texture classifier	texture unclassify
texturally nonclassification	texture classifiers	texture unclassifiable
texturally nonclassified	texture classifies	texture unclassifiability
texturally preclassify	texture classifying	texture unclassifiably
texturally preclassification	texture counterclassification	texture unclassification
texturally preclassified	texture counterclassifications	texture unclassified
texturally preclassifying	texture declassify	texture unclassifying
texturally reclassify	texture declassification	texture well-classified
texturally reclassification	texture declassifications	texture world-classifying
texturally reclassifications	texture declassified	textured classify
texturally reclassified	texture declassifies	textured classifiable
texturally reclassifies	texture declassifying	textured classic
texturally reclassifying	texture disclassify	textured classically
texturally subclassify	texture misclassify	textured classification
texturally subclassification	texture misclassification	textured classificational
texturally subclassifications	texture misclassifications	textured classifications
texturally subclassified	texture misclassified	textured classifier
texturally subclassifies	texture misclassifies	textured classificatory
texturally subclassifying	texture misclassifying	textured classified
texturally superclassified	texture nonclassifiable	textured classifier
texturally unclassify	texture nonclassification	textured classifiers
texturally unclassifiable	texture nonclassified	textured classifies
texturally unclassifiableness	texture preclassify	textured classifying
texturally unclassifiably	texture preclassification	textured counterclassification
texturally unclassification	texture preclassified	textured counterclassifications
texturally unclassified	texture preclassifying	textured declassify
texturally unclassifying	texture reclassify	textured declassification
texturally well-classified	texture reclassification	textured declassifications
texturally world-classifying	texture reclassifications	textured declassified
texture classify	texture reclassified	textured declassifies
texture classifiable	texture reclassifies	textured declassifying

textured classify	textureless classically	textureless subclassify
textured misclassify	textureless classification	textureless subclassification
textured misclassification	textureless classificational	textureless subclassifications
textured misclassifications	textureless classifications	textureless subclassified
textured misclassified	textureless classifier	textureless subclassifies
textured misclassifies	textureless classificatory	textureless subclassifying
textured misclassifying	textureless classified	textureless superclassified
textured nonclassifiable	textureless classifier	textureless unclassify
textured nonclassification	textureless classifiers	textureless unclassifiable
textured nonclassified	textureless classifies	textureless unclassifiability
textured preclassify	textureless classifying	textureless unclassifiably
textured preclassification	textureless counterclassification	textureless unclassification
textured preclassified	textureless counterclassifications	textureless unclassified
textured preclassifying	textureless declassify	textureless unclassifying
textured reclassify	textureless declassification	textureless well-classified
textured reclassification	textureless declassifications	textureless world-classifying
textured reclassifications	textureless declassified	textures classify
textured reclassified	textureless declassifies	textures classifiable
textured reclassifies	textureless declassifying	textures classic
textured reclassifying	textureless classifify	textures classically
textured subclassify	textureless misclassify	textures classification
textured subclassification	textureless misclassification	textures classificational
textured subclassifications	textureless misclassifications	textures classifications
textured subclassified	textureless misclassified	textures classifier
textured subclassifies	textureless misclassifies	textures classificatory
textured subclassifying	textureless misclassifying	textures classified
textured superclassified	textureless nonclassifiable	textures classifier
textured unclassify	textureless nonclassification	textures classifiers
textured unclassifiable	textureless nonclassified	textures classifies
textured unclassifiableness	textureless preclassify	textures classifying
textured unclassifiably	textureless preclassification	textures counterclassification
textured unclassification	textureless preclassified	textures counterclassifications
textured unclassified	textureless preclassifying	textures declassify
textured unclassifying	textureless reclassify	textures declassification
textured well-classified	textureless reclassification	textures declassifications
textured world-classifying	textureless reclassifications	textures declassified
textureless classify	textureless reclassified	textures declassifies
textureless classifiable	textureless reclassifies	textures declassifying
textureless classific	textureless reclassifying	textures disclassify

textures misclassify	texturing classification	texturing subclassification
textures misclassification	texturing classificational	texturing subclassifications
textures misclassifications	texturing classifications	texturing subclassified
textures misclassified	texturing classifier	texturing subclassifies
textures misclassifies	texturing classificatory	texturing subclassifying
textures misclassifying	texturing classified	texturing superclassified
textures nonclassifiable	texturing classifier	texturing unclassify
textures nonclassification	texturing classifiers	texturing unclassifiable
textures nonclassified	texturing classifies	texturing unclassifiableness
textures preclassify	texturing classifying	texturing unclassifiably
textures preclassification	texturing counterclassification	texturing unclassification
textures preclassified	texturing counterclassifications	texturing unclassified
textures preclassifying	texturing declassify	texturing unclassifying
textures reclassify	texturing declassification	texturing well-classified
textures reclassification	texturing declassifications	texturing world-classifying
textures reclassifications	texturing declassified	textus classify
textures reclassified	texturing declassifies	textus classifiable
textures reclassifies	texturing declassifying	textus classific
textures reclassifying	texturing disclassify	textus classically
textures subclassify	texturing misclassify	textus classification
textures subclassification	texturing misclassification	textus classificational
textures subclassifications	texturing misclassifications	textus classifications
textures subclassified	texturing misclassified	textus classifier
textures subclassifies	texturing misclassifies	textus classificatory
textures subclassifying	texturing misclassifying	textus classified
textures superclassified	texturing nonclassifiable	textus classifier
textures unclassify	texturing nonclassification	textus classifiers
textures unclassifiable	texturing nonclassified	textus classifies
textures unclassifiableness	texturing preclassify	textus classifying
textures unclassifiably	texturing preclassification	textus counterclassification
textures unclassification	texturing preclassified	textus counterclassifications
textures unclassified	texturing preclassifying	textus declassify
textures unclassifying	texturing reclassify	textus declassification
textures well-classified	texturing reclassification	textus declassifications
textures world-classifying	texturing reclassifications	textus declassified
texturing classify	texturing reclassified	textus declassifies
texturing classifiable	texturing reclassifies	textus declassifying
texturing classific	texturing reclassifying	textus disclassify
texturing classifically	texturing subclassify	textus misclassify

textus misclassification	text-writer classificational	text-writer subclassifications
textus misclassifications	text-writer classifications	text-writer subclassified
textus misclassified	text-writer classifier	text-writer subclassifies
textus misclassifies	text-writer classificatory	text-writer subclassifying
textus misclassifying	text-writer classified	text-writer superclassified
textus nonclassifiable	text-writer classifier	text-writer unclassify
textus nonclassification	text-writer classifiers	text-writer unclassifiable
textus nonclassified	text-writer classifies	text-writer unclassifiability
textus preclassify	text-writer classifying	text-writer unclassifiably
textus preclassification	text-writer counterclassification	text-writer unclassification
textus preclassified	text-writer counterclassifications	text-writer unclassified
textus preclassifying	text-writer declassify	text-writer unclassifying
textus reclassify	text-writer declassification	text-writer well-classified
textus reclassification	text-writer declassifications	text-writer world-classifying
textus reclassifications	text-writer declassified	untextual classify
textus reclassified	text-writer declassifies	untextual classifiable
textus reclassifies	text-writer declassifying	untextual classific
textus reclassifying	text-writer classify	untextual classifically
textus subclassify	text-writer misclassify	untextual classification
textus subclassification	text-writer misclassification	untextual classificational
textus subclassifications	text-writer misclassifications	untextual classifications
textus subclassified	text-writer misclassified	untextual classifier
textus subclassifies	text-writer misclassifies	untextual classificatory
textus subclassifying	text-writer misclassifying	untextual classified
textus superclassified	text-writer nonclassifiable	untextual classifier
textus unclassify	text-writer nonclassification	untextual classifiers
textus unclassifiable	text-writer nonclassified	untextual classifies
textus unclassifiability	text-writer preclassify	untextual classifying
textus unclassifiably	text-writer preclassification	untextual counterclassification
textus unclassification	text-writer preclassified	untextual counterclassifications
textus unclassified	text-writer preclassifying	untextual declassify
textus unclassifying	text-writer reclassify	untextual declassification
textus well-classified	text-writer reclassification	untextual declassifications
textus world-classifying	text-writer reclassifications	untextual declassified
text-writer classify	text-writer reclassified	untextual declassifies
text-writer classifiable	text-writer reclassifies	untextual declassifying
text-writer classific	text-writer reclassifying	untextual disclassify
text-writer classifically	text-writer subclassify	untextual misclassify
text-writer classification	text-writer subclassification	untextual misclassification

untextual misclassifications	untextually classifications	untextually subclassified
untextual misclassified	untextually classifier	untextually subclassifies
untextual misclassifies	untextually classificatory	untextually subclassifying
untextual misclassifying	untextually classified	untextually superclassified
untextual nonclassifiable	untextually classifier	untextually unclassify
untextual nonclassification	untextually classifiers	untextually unclassifiable
untextual nonclassified	untextually classifies	untextually unclassifiability
untextual preclassify	untextually classifying	untextually unclassifiably
untextual preclassification	untextually counterclassification	untextually unclassification
untextual preclassified	untextually counterclassifications	untextually unclassified
untextual preclassifying	untextually declassify	untextually unclassifying
untextual reclassify	untextually declassification	untextually well-classified
untextual reclassification	untextually declassifications	untextually world-classifying
untextual reclassifications	untextually declassified	untextural classify
untextual reclassified	untextually declassifies	untextural classifiable
untextual reclassifies	untextually declassifying	untextural classific
untextual reclassifying	untextually disclassify	untextural classically
untextual subclassify	untextually misclassify	untextural classification
untextual subclassification	untextually misclassification	untextural classificational
untextual subclassifications	untextually misclassifications	untextural classifications
untextual subclassified	untextually misclassified	untextural classifier
untextual subclassifies	untextually misclassifies	untextural classificatory
untextual subclassifying	untextually misclassifying	untextural classified
untextual superclassified	untextually nonclassifiable	untextural classifier
untextual unclassify	untextually nonclassification	untextural classifiers
untextual unclassifiable	untextually nonclassified	untextural classifies
untextual unclassifiability	untextually preclassify	untextural classifying
untextual unclassification	untextually preclassification	untextural counterclassification
untextual unclassified	untextually preclassified	untextural counterclassifications
untextual unclassifying	untextually preclassifying	untextural declassify
untextual well-classified	untextually reclassification	untextural declassifications
untextual world-classifying	untextually reclassifications	untextural declassified
untextually classify	untextually reclassified	untextural declassifies
untextually classifiable	untextually reclassifies	untextural declassifying
untextually classific	untextually reclassifying	untextural disclassify
untextually classically	untextually subclassify	untextural misclassify
untextually classification	untextually subclassification	untextural misclassification
untextually classificational	untextually subclassifications	untextural misclassifications

untextural misclassified	Urtext classifier	Urtext subclassifies
untextural misclassifies	Urtext classificatory	Urtext subclassifying
untextural misclassifying	Urtext classified	Urtext superclassified
untextural nonclassifiable	Urtext classifier	Urtext unclassify
untextural nonclassification	Urtext classifiers	Urtext unclassifiable
untextural nonclassified	Urtext classifies	Urtext unclassifiability
untextural preclassify	Urtext classifying	Urtext unclassifiably
untextural preclassification	Urtext counterclassification	Urtext unclassification
untextural preclassified	Urtext counterclassifications	Urtext unclassified
untextural preclassifying	Urtext declassify	Urtext unclassifying
untextural reclassify	Urtext declassification	Urtext well-classified
untextural reclassification	Urtext declassifications	Urtext world-classifying
untextural reclassifications	Urtext declassified	urtexts classify
untextural reclassified	Urtext declassifies	urtexts classifiable
untextural reclassifies	Urtext declassifying	urtexts classific
untextural reclassifying	Urtext classify	urtexts classifically
untextural subclassify	Urtext misclassify	urtexts classification
untextural subclassification	Urtext misclassification	urtexts classificational
untextural subclassifications	Urtext misclassifications	urtexts classifications
untextural subclassified	Urtext misclassified	urtexts classifier
untextural subclassifies	Urtext misclassifies	urtexts classificatory
untextural subclassifying	Urtext misclassifying	urtexts classified
untextural superclassified	Urtext nonclassifiable	urtexts classifier
untextural unclassify	Urtext nonclassification	urtexts classifiers
untextural unclassifiable	Urtext nonclassified	urtexts classifies
untextural unclassifiability	Urtext preclassify	urtexts classifying
untextural unclassification	Urtext preclassification	urtexts counterclassification
untextural unclassified	Urtext preclassified	urtexts counterclassifications
untextural unclassifying	Urtext preclassifying	urtexts declassify
untextural well-classified	Urtext reclassification	urtexts declassifications
untextural world-classifying	Urtext reclassifications	urtexts declassified
Urtext classify	Urtext reclassified	urtexts declassifies
Urtext classifiable	Urtext reclassifies	urtexts declassifying
Urtext classific	Urtext reclassifying	urtexts disclassify
Urtext classifically	Urtext subclassify	urtexts misclassify
Urtext classification	Urtext subclassification	urtexts misclassification
Urtext classificational	Urtext subclassifications	urtexts misclassifications
Urtext classifications	Urtext subclassified	urtexts misclassified

urtexts misclassifies	urtexts world-classifying	videotext nonclassifiable
urtexts misclassifying	videotext classify	videotext nonclassification
urtexts nonclassifiable	videotext classifiable	videotext nonclassified
urtexts nonclassification	videotext classific	videotext preclassify
urtexts nonclassified	videotext classically	videotext preclassification
urtexts preclassify	videotext classification	videotext preclassified
urtexts preclassification	videotext classificational	videotext preclassifying
urtexts preclassified	videotext classifications	videotext reclassify
urtexts preclassifying	videotext classifier	videotext reclassification
urtexts reclassify	videotext classificatory	videotext reclassifications
urtexts reclassification	videotext classified	videotext reclassified
urtexts reclassifications	videotext classifier	videotext reclassifies
urtexts reclassified	videotext classifiers	videotext reclassifying
urtexts reclassifies	videotext classifies	videotext subclassify
urtexts reclassifying	videotext classifying	videotext subclassification
urtexts subclassify	videotext counterclassification	videotext subclassifications
urtexts subclassification	videotext counterclassifications	videotext subclassified
urtexts subclassifications	videotext declassify	videotext subclassifies
urtexts subclassified	videotext declassification	videotext subclassifying
urtexts subclassifies	videotext declassifications	videotext superclassified
urtexts subclassifying	videotext declassified	videotext unclassify
urtexts superclassified	videotext declassifies	videotext unclassifiable
urtexts unclassify	videotext declassifying	videotext unclassifiableness
urtexts unclassifiable	videotext disclassify	videotext unclassifiably
urtexts unclassifiableness	videotext misclassify	videotext unclassification
urtexts unclassifiably	videotext misclassification	videotext unclassified
urtexts unclassification	videotext misclassifications	videotext unclassifying
urtexts unclassified	videotext misclassified	videotext well-classified
urtexts unclassifying	videotext misclassifies	videotext world-classifying
urtexts well-classified	videotext misclassifying	

## APPENDIX 5-D

<b>Theme</b>	<b>Plausible original theme</b>
machin_learn	machine learning
text_mine	text mining
comput_scienc	computer science
natur_languag	natural language
inform_retriev	information retrieval
inform_technolog	information technology
data_mine	data mining
stop_word	stop words
text_classif	text classification
languag_process	language processing
featur_select	feature selection
text_document	text document
sentiment_analysi	semtiment analysis
neural_network	neural network
social_media	social media
precis_recal	precision and recall
social_network	social network
document_cluster	document cluster
part_speech	parts of speech
comput_linguist	computer linguistics
arab_text	Arab text
topic_model	topic model
term_frequenc	term frequency
text_categor	text category
support_vector	support vector
vector_space	vecctor space
train_data	training data
vector_machin	vector machine
naiv_bay	naive bayesian
naiv_bay	naive bayesian
inform_system	information system
name_entiti	named entities
search_engin	search engine
similar_measur	Similarity measure

document_frequenc	document frequency
featur_extract	feature extraction
posit_neg	positive and negitive
base_approach	base approach
term_weight	term weight
text_process	text processing
text_analysi	text analysis
learn_algorithm	learning algorithm
word_remov	word removal
space_model	space model
artifici_intellig	artificial intelligence
cross_valid	cross validation
arab_languag	Arab language
featur_vector	feature vector
stem_algorithm	stem algorithm
cluster_algorithm	cluster algorithm
word_document	word document
train_test	trainint test
scienc_engin	science and engineering
number_word	number of words
word_stem	word stem
inform_extract	information extraction
decis_tree	decision tree
document_collect	document collection
semant_analysi	semantic analysis
softwar_engin	software and engineering
document_document	document of documents
latent_semant	latent semantic
invers_document	inverse document
retriev_system	retrieval system
depart_comput	department of computer
bay_classifi	baysian classification
test_data	test data
cosin_similar	cosine similarity
document_term	document term
data_process	data process
data_set	data set
data_collect	data collection
rule_base	rule based

word_list	word list
train_model	training model
keyword_extract	keyword extraction
random_forest	random forest
base_method	base method
nearest_neighbor	nearest neighbor
latent_dirichlet	latent dirichlet
stem_word	stem of the word
classif_algorithm	classification algorithm
porter_stemmer	porter stemmer
speech_tag	speech tag
mine_techniqu	mine technique
knowledg_base	knowledge based
scienc_technolog	science technology
electr_engin	electronic engineering
supervis_learn	supervis learning
semant_similar	semantic similarity
model_base	model based
base_featur	base feature
engin_comput	engineering computing
light_stem	light stem
text_file	text file
cloud_comput	cloud computing
data_analysi	data analysis
document_contain	document contains
dirichlet_alloc	dirichlet allocation
automat_text	automat text
remov_stop	removal of stop
engin_technolog	engineering technology
cluster_cluster	cluster cluster
document_classif	document classifier
word_sentenc	word sentence
model_us	model usage
word_frequenc	word frequency
languag_model	language model
classif_us	classification usage
solv_problem	solving problem
system_us	system usage
recal_precis	recall precision

learn_approach	learning approach
document_summar	document summary
frequenc_word	frequency word
inform_scienc	information science
word_text	word text
frequenc_term	frequency term
frequenc_invers	frequency inverse
improv_perform	improved performance
relev_document	relevant document
inform_process	information process
comput_applic	computer application
document_word	document word
extract_featur	extraction feature
compar_studi	compar study
method_base	method based
select_method	selection method
recal_measur	recall measure
classif_accuraci	classification accuracy
number_time	number of times
topic_topic	topic topic
learn_model	learning model
document_repres	document represents
languag_text	language text
learn_techniqu	learning technique
cluster_method	cluster method
similar_document	similar document
multi_document	multiple documents
base_model	base model
number_featur	number feature
document_us	document usage
knowledg_discoveri	knowledge discovery
word_appear	word appearance
word_featur	word feature
document_vector	document vector
mean_word	mean word
extract_text	extractionion text
textual_data	textual data
form_word	form word
model_inform	model information

repres_document	represent document
model_model	model model
process_step	process step
extract_inform	extractionion information
base_similar	base similarity
languag_technolog	language technology
word_base	word based
comput_engin	computer engineering
scienc_inform	science information
right_reserv	right reserved
opinion_mine	opinion mine
process_text	process text
evalu_metric	evaluation metric
manag_system	managing system
classif_task	classification task
document_number	document number
stem_process	stem process
test_dataset	test dataset
document_represent	document representent
noun_verb	noun verb
weight_term	weight term
us_word	usage of word
amount_data	amount of data
word_model	word model
document_matrix	document matrix
number_topic	number topic
fold_cross	fold cross
similar_word	similar word
word_vector	word vector
sentenc_document	sentence document
featur_space	feature space
averag_precis	average precision
term_base	term based
mean_cluster	mean cluster
logist_regress	logistic regression
term_extract	term extraction
collect_document	collect document
recal_score	recall score
us_data	usage of data

khoja_stemmer	khoja stemmer
text_content	text content
stock_market	stock market
number_cluster	number cluster
morpholog_analysi	morphology analysis
pattern_recognit	pattern recognition
us_inform	usage of information
data_data	data data
contain_word	contain word
classif_model	classification model
base_text	base text
step_step	step by step
user_queri	user query
model_train	model training
train_document	training document
featur_featur	feature feature
index_term	index term
select_featur	selection feature
unstructur_data	unstructured data
arab_document	arab document
us_machin	usage of machine
time_consum	time consume
algorithm_base	algorithm based
analysi_retriev	analysis retireval
knowledg_manag	knowledge manag
cluster_base	cluster based
cluster_document	cluster document
learn_method	learning method
improv_accuraci	improved accuracy
word_mean	word mean
textual_content	textual content
cluster_us	cluster usage
human_languag	human language
predict_model	prediction model
weight_scheme	weight scheme
base_system	base system
intellig_system	intelligent system
collect_data	collection of data
comput_inform	computer information

mobil_devic	mobile device
word_occurr	word occurrence
document_text	document text
classifi_classifi	classification classifiers
cluster_techniqu	cluster technique
term_occur	term occurrence
gold_standard	gold standard
queri_term	query term
mean_algorithm	mean algorithm
world_wide	world wide
text_preprocess	text preprocess
system_develop	system develop
term_term	term term
develop_inform	develop information
point_view	point view
word_root	word root
recommend_system	recommended system
maximum_entropi	maximum entropy
stem_stem	stem stem
error_rate	error rate
plai_role	play role
singl_word	single word
prefix_suffix	prefix suffix
imag_process	image process
root_word	root word
document_retriev	document retireval
retriev_document	retireval document
spam_filter	spam filter
occur_document	occurrence document
increas_number	increase number
system_base	system based
classif_method	classification method
comput_system	computer system
inform_gain	information gain
data_train	data training
document_similar	document similarity
us_text	usage of text
docu_ment	document mention
sourc_text	source text

full_text	full text
latent_topic	latent topic
model_text	model text
advanc_comput	advanced computing
genet_algorithm	genet algorithm
knowledg_data	knowledge data
search_queri	search query
frequent_word	frequent word
inform_text	information text
term_appear	term appearance
class_label	class label
train_dataset	training dataset
number_term	number term
probabl_distribut	probability distribution
preprocess_step	preprocess step
porter_stem	porter stem
issn_onlin	issn online
linguist_featur	linguistic feature
similar_score	similar score
text_retriev	text retireval
evalu_us	evaluation usage
word_occur	word occurrence
condit_probabl	condition probability
data_engin	data engineering
test_document	test document
process_manag	process manage
exampl_word	example word
languag_resourc	language resource
reduc_number	reduced number
base_term	base term
approach_base	approach based
base_classifi	base classifiers
process_techniqu	process technique
fals_posit	false positive
frequent_pattern	frequent pattern
comput_commun	computer commun
extract_keyword	extraction keyword
deep_learn	deep learning
method_us	method usage

phrase_base	phrase based
document_corpu	document corpus
inform_knowledg	information knowledg
classifi_text	classification text
word_extract	word extraction
word_count	word count
retriev_inform	retireval information
list_word	list word
structur_data	structured data
input_data	input data
appear_document	appearance document
train_classifi	training classifiers
sentenc_sentenc	sentence sentence
classifi_us	classification usage
text_us	text usage
combin_featur	combined feature
classifi_train	classification training
approach_us	approach usage
document_queri	document query
classif_problem	classification problem
object_function	object function
text_corpu	text corpus
process_inform	process information
document_base	document based
infor_mation	infor mation
level_featur	level feature
system_perform	system performance
program_languag	program language
system_applic	system application
queri_expans	query expansion
word_order	word order
algorithm_algorithm	algorithm algorithm
text_base	text based
pattern_mine	pattern mine
issn_volum	issn volume
remov_stem	removal of stem
evalu_measur	evaluation measure
artifici_neural	artificial neural
document_featur	document feature

view_project	view project
model_evalu	model evaluation
media_text	media text
euclidean_distanc	euclidean distanc
contain_term	contain term
algorithm_perform	algorithm performance
extract_us	extraction usage
colleg_engin	college of engineering
build_model	build model
linguist_analysi	linguistic analysis
engin_scienc	engineering science
contain_document	contain document
singl_document	single document
data_structur	data structure
system_design	system design
soft_comput	software computing
volum_number	volume number
relev_inform	relevant information
process_document	process document
text_featur	text feature
cluster_process	cluster process
word_us	word usage
classif_process	classification process
word_term	word term
perform_test	perform test
input_output	input output
user_request	user request
word_embed	word embed
random_field	random field
featur_base	feature based
public_http	public http
word_topic	word topic
number_iter	number iteration
unigram_bigram	unigram bigram
allow_user	allow user
design_implement	design implement
content_base	content based
semant_index	semantic index
cluster_text	cluster text

mathemat_model	mathemat model
document_process	document process
algorithm_us	algorithm usage
period_time	period time
word_sens	word sense
content_page	content page
wide_rang	wide range
comput_time	computing time
autom_text	automating text
document_topic	document topic
syntact_semant	syntactic semantic
method_text	method text
unsupervis_learn	unsupervised learning
discoveri_data	discovery data
informa_tion	information
data_text	data text
topic_document	topic document
emot_recognit	emotion recognition
perform_us	perform usage
base_word	base word
vector_represent	vector represent
us_featur	usage of feature
measur_similar	measure similarity
corpu_base	corpus based
text_word	text word
graph_base	graph based
semant_featur	semantic feature
confus_matrix	confusional matrix
emot_classif	emotion classifier
network_analysi	network analysis
unstructur_text	unstructured text
origin_document	origin document
proc_conf	proceeding conference
sentenc_word	sentence word
distanc_measur	distance measure
berlin_heidelberg	berlin heidelberg
measur_precis	measure precision
similar_sentenc	similar sentence
represent_document	represent document

train_corpus	training corpus
unique_word	unique word
data_model	data model
hierarch_cluster	hierarch cluster
probabilist_model	probabilistic model
evalu_perform	evaluation performance
model_perform	model performance
word_level	word level
pattern_base	pattern based
classif_technique	classification technique
calcul_us	calculate usage
data_sourc	data source
occurr_word	occurrence word
commun_technolog	commun technology
stem_arab	stem arab
inform_commun	information commun
taken_account	taken account
fals_neg	false negitive
tweet_contain	tweet contains
occurr_term	occurrence term
base_cluster	base cluster
reduc_dimension	reduced dimension
system_evalu	system evaluation
word_given	word given
mine_text	mine text
dataset_dataset	dataset dataset
process_time	process time
time_period	time period
automat_extract	automat extraction
dataset_consist	dataset consist
file_contain	file contains
test_perform	test performance
share_task	share task
document_train	document training
word_cluster	word cluster
user_gener	user generator
base_semant	base semantic
statist_analysi	statistic analysis
transact_knowledg	transact knowledge

model_built	model built
twitter_user	twitter user
model_document	model document
retriev_relev	retireval relevant
gram_gram	gram gram
speech_recognit	speech recognition
linear_regress	linear regression
data_point	data point
common_word	common word
signal_process	signal process
calcul_similar	calculate similarity
system_system	system system
model_data	model data
standard_arab	standard arab
perform_system	perform system
valu_calcul	value calculate
cluster_similar	cluster similarity
classif_text	classification text
frequenc_document	frequency document
perform_evalu	perform evaluation
precis_measur	precision measure
algorithm_appli	algorithm application
text_classifi	text classifiers
model_predict	model prediction
analysi_method	analysis method
algo_rithm	algo rithm
distribut_topic	distribution topic
classifi_document	classification document
text_collect	text collection
extract_term	extraction term
repres_vector	represent vector
word_categori	word category
accuraci_precis	accuracy precision
punctuat_mark	punctuat mark
test_set	test set
data_extract	data extraction
comput_technolog	computer technology
wordRepresent	word represent
tabl_perform	table performance

neg_exampl	negative example
featur_word	feature word
rule_mine	rule mine
test_test	test test
us_porter	usage of porter
content_document	content document
word_gener	word generator
document_model	document model
gener_word	gener word
featur_valu	feature value
highest_accuraci	highest accuracy
mine_method	mine method
develop_model	develop model
lexic_databas	lexicon database
regress_model	regression model
tweet_user	tweet user
class_class	class class
classif_cluster	classification cluster
featur_text	feature text
stem_stop	stem stop
process_system	process system
process_extract	process extraction
develop_system	develop system
implement_us	implement usage
request_enhanc	request enhance
dataset_contain	dataset contains
extract_word	extraction word
model_featur	model feature
comput_vision	computer vision
us_classifi	usage of classifiers
train_exampl	training example
evalu_system	evaluation system
word_contain	word contains
method_appli	method application
extract_method	extraction method
token_token	token token
repres_text	represent text
retriev_text	retireval text
discuss_stat	discuss stat

enhanc_download	enhance download
public_stat	public stat
view_public	view public
word_dictionari	word dictionary
cluster_number	cluster number
word_repres	word represent
correl_coeffici	correlation coefficient
statist_machin	statistic machine
porter_algorithm	porter algorithm
twitter_data	twitter data
mine_algorithm	mine algorithm
extract_document	extraction document
sentenc_text	sentence text
semant_relationship	semantic relationship
techniqu_text	technique text
make_process	make process
human_resourc	human resource
qualiti_cluster	quality cluster
relev_featur	relevant feature
manual_label	manual label
represent_model	represent model
word_consider	word consideration
publiccli_avail	publicly available
automat_index	automat index
springer_verlag	springer verlag
distribut_word	distribution word
keyword_text	keyword text
word_similar	word similarity
root_stem	root stem
measur_accuraci	measure accuracy
cluster_approach	cluster approach
classif_approach	classification approach
interest_includ	interest include
inform_document	information document
mine_inform	mine information
document_index	document index
featur_document	feature document
model_repres	model represent
neg_word	negitive word

sequenc_word	sequence word
perform_model	perform model
sens_disambigu	sense disambigous
data_base	data based
model_select	model selection
search_space	search space
tweet_tweet	tweet tweet
predict_stock	prediction stock
classifi_base	classification based
select_text	selection text
bay_algorithm	baysian algorithm
represent_text	represent text
resourc_evalu	resourcee evaluation
dimension_space	dimension space
main_idea	main idea
tree_structur	tree structure
algorithm_cluster	algorithm cluster
word_stop	word stop
measur_measur	measure measure
extract_sentenc	extraction sentence
problem_solv	problem solve
word_corpu	word corpus
word_found	word found
base_search	base search
data_store	data store
neg_neutral	negitive neutral
issu_march	issu march
search_algorithm	search algorithm
recal_valu	recall value
techniqu_base	technique based
data_preprocess	data preprocess
method_perform	method performance
obtain_us	obtain usage
statist_model	statistic model
accuraci_rate	accuracy rate
textual_inform	textual information
cluster_data	cluster data
test_collect	test collection
semant_inform	semantic information

assist_professor	assist professor
weight_word	weight word
bayesian_classifi	bayesian classifiers
given_text	given text
word_filter	word filter
content_word	content word
execut_time	execute time
highest_score	highest score
repres_number	represent number
analyz_data	analyse data
model_gener	model generator
repres_word	represent word
languag_word	language word
topic_word	topic word
represent_word	represent word
tweet_us	tweet usage
base_algorithm	base algorithm
model_paramet	model paramet
document_sentenc	document sentence
content_text	content text
method_automat	method automat
user_user	user user
further_process	further process
system_implement	system implement
process_perform	process performance
springer_berlin	springer berlin
accuraci_us	accuracy usage
technolog_comput	technolog computing
volum_page	volume page
featur_gener	feature generator
perform_measur	perform measure
base_analysi	base analysis
amount_inform	amount of information
document_level	document level
input_document	input document
sentenc_base	sentence based
mine_applic	mine applicationcation
valu_term	value term
word_cloud	word cloud

root_form	root form
improv_qualiti	improved quality
societi_inform	society information
us_algorithm	usage of algorithm
model_develop	model develop
previou_studi	previou study
posit_word	positive word
text_contain	text contains
detect_system	detect system
charact_recognit	character recognition
model_test	model test
frequent_itemset	frequent itemset
measur_perform	measure performance
document_calcul	document calculation
gibb_sampl	gibb sample
solut_problem	solution to the problem
avail_onlin	available online
weight_assign	weight assign
model_topic	model topic
measur_text	measure text
help_user	help user
cluster_perform	cluster performance
rank_document	rank document
train_sampl	training sampl
perform_experi	perform experiment
previou_step	previous step
step_process	step process
time_complex	time complex
number_text	number text
us_techniqu	usage of technique
find_similar	find similarity
correctli_classifi	correctly classified
word_process	word process
languag_arab	language arab
type_data	type of data
data_avail	data available
mine_data	mine data
number_user	number user
extract_system	extraction system

dimension_vector	dimension vector
learn_text	learning text
techniqu_appli	technique application
semant_mean	semantic mean
similar_valu	similar value
charact_word	charact word
cluster_centroid	cluster centroid
function_word	function word
user_search	user search
word_number	word number
order_reduc	order reduced
degre_comput	degre computing
dimension_data	dimension data
exist_method	exist method
extract_data	extraction data
vector_word	vector word
knowledg_engin	knowledge engineering
scienc_depart	science department
string_match	string match
main_problem	main problem
model_classifi	model classifiers
measur_us	measure usage
origin_text	origin text
statist_inform	statistic information
measur_evalu	measure evaluation
find_relev	find relevant
arab_corpu	arab corpus
system_architectur	system architecture
assign_weight	assign weight
mean_text	mean text
addit_featur	additionalt feature
topic_base	topic based
weight_averag	weight average
word_token	word token
group_group	group group
process_model	process model
score_score	score score
preprocess_text	preprocess text
algorithm_document	algorithm document

classifi_perform	classification performance
word_semant	word semantic
analysi_document	analysis document
us_term	usage of term
combin_word	combined word
network_base	network based
time_term	time term
gener_topic	gener topic
improv_effici	improved efficiency
data_contain	data contains
free_text	free text
linear_combin	linear combined
system_extract	system extraction
classifi_test	classification test
tech_niqu	tech niqu
us_train	usage of training
word_common	word common
count_number	count number
evalu_model	evaluation model
experi_perform	experiment performance
classif_base	classification based
featur_train	feature training
mine_us	mine usage
term_text	term text
model_method	model method
provid_inform	provide information
start_point	start point
process_method	process method
textual_document	textual document
applic_text	applic text
corpu_document	corpus document
gener_model	gener model
group_similar	group similarity
lexicon_base	lexiconon based
valu_document	valu document
data_test	data test
word_select	word selection
base_topic	base topic
human_factor	human factor

predefin_categori	predefin category
classifi_categori	classification category
document_total	document total
sentenc_length	sentence length
word_approach	word approach
cluster_qualiti	cluster quality
collect_text	collection of text
maximum_likelihood	maximum likelihood
measur_valu	measurable value
us_support	usage of support
word_includ	word include
document_consid	document consideration
empir_studi	empirical study
system_test	system test
comput_similar	computer similarity
corpu_text	corpus text
morgan_kaufmann	morgan kaufmann
stem_us	stem usage
averag_number	average number
frequenc_count	frequency count
includ_text	included text
techniqu_extract	technique extraction
develop_method	develop method
given_word	given word
process_reduc	process reduced
train_us	training usage
us_simpl	usage of simple
word_context	word context
wordnet_lexic	wordnet lexicon
emot_categori	emotion category
represent_us	represent usage
time_word	time word
word_exampl	word example
issu_issn	issue issn
posit_fals	positive false
user_tweet	user tweet
weight_approach	weight approach
index_document	index document
perform_classifi	perform classifiers

address_problem	address problem
document_rank	document rank
pattern_analysi	pattern analysis
us_vector	usage of vector
princip_compon	principle component
term_number	term number
mine_task	mine task
perform_cluster	perform cluster
take_advantag	take advantage
algorithm_stem	algorithm stem
white_space	white space
featur_us	feature usage
graph_node	graph node
weight_calcul	weight calculate
spam_detect	spam detect
store_databas	store database
mixtur_model	mixture model
method_evalu	method evaluation
inform_avail	information available
precis_valu	precision value
suffix_strip	suffix strip
sourc_inform	source information
featur_repres	feature represent
classifi_featur	classification feature
process_word	process word
algorithm_develop	algorithm develop
main_reason	main reason
base_stem	base stem
comput_approach	computer approach
given_queri	given query
perform_algorithm	perform algorithm
stopword_remov	stopword removal
inform_word	information word
model_word	model word
optic_charact	optical characteristic
scienc_applic	science application
learn_object	learning object
automat_evalu	automatic evaluation
vector_featur	vector feature

model_compar	model compare
term_select	term selection
us_gram	usage of gram
user_defin	user define
base_user	base user
index_process	index process
similar_mean	similar mean
gram_base	gram based
sourc_data	source data
text_messag	text messag
technolog_volum	technolog volume
analysi_social	analysis social
base_techniqu	base technique
dataset_train	dataset training
select_algorithm	selection algorithm
token_stop	token stop
us_wordnet	usage of wordnet
valu_pair	value pair
base_represent	base represent
facebook_twitter	facebook twitter
us_wikipedia	usage of wikipedia
class_number	class number
dimension_featur	dimension feature
extract_techniqu	extraction technique
model_automat	model automatic
european_languag	european language
text_repres	text represent
comput_network	computer network
method_combin	method combined
word_match	word match
algorithm_find	algorithm find
data_consist	data consist
featur_includ	feature include
form_stem	form stem
token_process	token process
weight_vector	weight vector
consist_document	consist of document
sentenc_structur	sentence structure
system_consist	system consist

test_model	test model
analysi_machin	analysis machine
frequenc_weight	frequency weight
measur_calcul	measure calculation
workshop_comput	workshop computing
text_dataset	text dataset
us_equat	usage of equation
collect_corpu	collection of corpus
lexic_featur	lexicon feature
mean_valu	mean value
model_extract	model extraction
perform_analysi	perform analysis
corpu_word	corpus word
model_system	model system
us_rule	usage of rule
concept_document	concept document
categori_categori	category category
length_document	length document
north_chapter	north chapter
overal_perform	overall performance
document_length	document length
cluster_accuraci	cluster accuracy
good_perform	good performance
list_stop	list stop
index_html	index html
algorithm_implement	algorithm implement
convert_text	convert text
word_elimin	word elimination
improv_text	improved text
collect_tweet	collection of tweet
count_word	count word
extract_knowledg	extraction knowledge
statist_signific	statistic significant
emot_text	emotion text
knowledg_extract	knowledge extraction
term_queri	term query
semant_evalu	semantic evaluation
method_extract	method extraction
overal_accuraci	overall accuracy

repres_term	represent term
approach_automat	approach automatic
automat_classifi	automatic classifiers
method_describ	method describe
languag_specif	language specification
node_repres	node represent
topic_text	topic text
difficult_task	difficult task
access_inform	access information
depart_inform	department of information
naïv_bayesian	naïve bayesian
queri_word	query word
caus_effect	causage of effect
comput_base	computer based
fine_grain	fine grain
measur_defin	measure define
text_written	text written
distribut_document	distribution document
lower_case	lower case
recognit_system	recognition system
semi_automat	semi automatic
consist_word	consist word
context_base	context based
dataset_us	dataset usage
process_phase	process phase
us_corpu	usage of corpus
word_distribut	word distribution
term_occurr	term occurrence
method_cluster	method cluster
token_text	token text
compon_analysi	component analysis
gener_term	gener term
semant_structur	semantic structure
stem_reduc	stem reduced
term_accuraci	term accuracy
cluster_word	cluster word
document_given	document given
system_text	system text
text_understand	text understand

us_mean	usage of mean
document_extract	document extraction
frequenc_calcul	frequency calculate
document_group	document group
domain_knowledg	domain knowledge
gener_content	gener content
learn_data	learning data
retriev_base	retireval based
algorithm_mean	algorithm mean
approach_perform	approach performance
model_approach	model approach
network_us	network usage
gram_word	gram word
model_combin	model combined
stemmer_algorithm	stemmer algorithm
valu_paramet	valu paramet
valu_word	valu word
accuraci_tabl	accuracy table
assign_word	assign word
base_measur	base measure
process_approach	process approach
us_latent	usage of latent
gener_algorithm	general algorithm
preprocess_techniqu	preprocess technique
rule_rule	rule rule
level_text	level text
process_base	process based
relev_queri	relevant query
document_test	document test
document_accord	document accord
order_evalu	order evaluation
base_learn	base learning
algorithm_suffix	algorithm suffix
approach_featur	approach feature
time_process	time process
equal_number	equal number
improv_cluster	improved cluster
classif_document	classification document
gener_process	general process

jordan_latent	jordan latent
label_train	label training
model_describ	model describe
us_topic	usage of topic
base_machin	base machine
frequenc_number	frequency number
process_includ	process include
word_assign	word assign
automat_classif	automatic classifier
calcul_term	calculate term
signific_improv	significant improve
stage_process	stage process
valu_indic	valu indication
analysi_tool	analysis tool
gener_method	general method
vector_us	vector usage
origin_data	origin data
comput_secur	computer security
engin_depart	engineering department of ment
frequent_item	frequent item
http_github	http github
increas_perform	increase performance
occurr_document	occurrence document
similar_cluster	similar cluster
studi_featur	study feature
token_stem	token stem
us_weight	usage of weight
word_reduc	word reduced
base_number	base number
data_includ	data include
dataset_collect	dataset collection
find_word	find word
learn_train	learning training
reduc_time	reduced time
weight_document	weight document
word_collect	word collection
corpu_train	corpus training
learn_system	learning system
accuraci_classif	accuracy classifier

algorithm_compar	algorithm comparison
base_form	base form
contain_text	contain text
dataset_experi	dataset experiment
pair_word	pair word
approach_combin	approach combined
includ_word	includ word
problem_text	problem text
reduct_techniqu	reducedt technique
remov_punctuat	removal of punctuation
score_system	score system
select_document	selection document
type_featur	type feature
us_model	usage of model
mobil_phone	mobile phone
select_relev	selection relevant
system_data	system data
gener_us	general usage
order_extract	order extraction
perfor_manc	performance
recal_recal	recall recall
rule_extract	rule extraction
structur_text	structured text
word_train	word training
combin_model	combined model
data_classif	data classifier
time_featur	time feature
gener_categor	general category
model_term	model term
probabilist_latent	probabilistic latent
search_word	search word
order_word	order word
predict_class	prediction class
base_applic	base application
bay_classif	baysian classifier
binari_classif	binary classifier
learn_inform	learning information
note_comput	note computing
number_class	number class

perform_inform	perform information
techniqu_find	technique find
main_step	main step
make_difficult	make difficult
servic_servic	service service
method_classif	method classifier
model_latent	model latent
model_process	model process
statist_measur	statistic measure
stem_method	stem method
topic_gener	topic generator
tradit_approach	tradit approach
data_format	data format
featur_term	feature term
posit_class	positive class
score_function	score function
term_precis	term precision
total_word	total word
divid_number	divide number
present_model	present model
word_group	word group
approach_develop	approach develop
compar_word	compare word
find_optim	find optimal
further_improv	further improve
probabl_word	probability word
proce_ing	processing
data_form	data form
neg_sentiment	negative sentiment
servic_orient	service orient
cluster_gener	cluster generator
train_phase	training phase
cluster_mean	cluster mean
document_set	document set
file_file	file file
inform_sourc	information source
neighbor_algorithm	neighbor algorithm
preprocess_document	preprocess document
structur_inform	structured information

us_approach	usage of approach
dataset_evalu	dataset evaluation
mine_pattern	mine pattern
model_user	model user
model_vector	model vector
size_data	size data
struc_ture	structure
calcul_number	calculate number
number_charact	number characteristic
system_support	system support
us_combin	usage of combined
user_interact	user interaction
data_represent	data represent
experi_evalu	experiment evaluation
gener_purpos	general purpose
linguist_human	linguistic human
tech_nologi	tech nologi
word_frequent	word frequent
automat_process	automatic process
remov_prefix	removal of prefix
select_word	selection word
us_naïv	usage of naïv
correct_word	correct word
perform_poorli	perform poorly
type_type	type type
retriev_perform	retireval performance
effect_featur	effect feature
data_gather	data gather
inform_filter	information filter
overcom_problem	overcome problem
method_arab	method arab
reduc_size	reduced size
stem_techniqu	stem technique
us_document	usage of document
import_word	import word
perform_featur	perform feature
approach_classifi	approach classifiers
perform_document	perform document
algorithm_data	algorithm data

cluster_group	cluster group
estim_probabl	estim probability
given_topic	given topic
model_implement	model implement
order_achiev	order achievement
vector_model	vector model
inform_data	information data
total_document	total document
document_comput	document computing
algorithm_test	algorithm test
fuzzi_set	fuzzy set
system_process	system process
term_semant	term semantic
token_part	token part
train_train	training training
tree_algorithm	tree algorithm
detect_us	detect usage
help_identifi	help identification
input_word	input word
contain_number	contain number
group_document	group document
approach_analyz	approach analyse
method_consid	method consideration
document_user	document user
languag_base	language based
commun_engin	communication engineering
corpu_number	corpus number
perform_term	perform term
collect_word	collection of word
detail_descript	detail descript
inform_us	information usage
tree_classifi	tree classifiers
word_exist	word exist
analysyi_opinion	analysis opinion
effect_us	effect usage
method_measur	method measure
paramet_valu	paramet value
supervis_unsupervis	supervised unsupervised
text_consid	text consideration

averag_valu	average value
bay_theorem	baysian theorem
evalu_classifi	evaluation classifiers
pattern_gener	pattern generator
perform_improv	perform improve
preprocess_data	preprocess data
test_system	test system
word_search	word search
faculti_scienc	faculti science
form_us	form usage
linguist_resourc	linguistic resource
semant_network	semantic network
variou_featur	various feature
written_text	written text
categori_word	category word
context_awar	context awar
extract_tweet	extraction tweet
order_logic	order logic
select_term	selection term
simpl_word	simple word
appear_frequent	appearance frequent
method_select	method selection
modern_inform	modern information
term_gener	term generator
evalu_evalu	evaluation evaluation
method_improv	method improve
model_defin	model define
multinomi_distribut	multinomi distribution
size_train	size training
specif_topic	specification topic
approach_cluster	approach cluster
describ_detail	describe detail
document_thu	document thu
gram_model	gram model
train_time	training time
convert_word	convert word
divid_total	divide total
improv_precis	improved precision
document_order	document order

gram_featur	gram feature
main_featur	main feature
mine_machin	mine machine
repr_sent	represent
test_evalu	test evaluation
websit_http	website http
calcul_frequenc	calculate frequency
comput_semant	computer semantic
subset_featur	subset feature
system_arab	system arab
algorithm_predict	algorithm prediction
gener_data	general data
mine_natur	mine nature
multi_label	multiple label
node_graph	node graph
word_test	word test
design_model	design model
further_develop	further develop
model_construct	model construct
sampl_data	sampl data
salton_bucklei	salton bucklei
applic_develop	applic develop
automat_document	automatic document
document_avail	document available
model_consid	model consideration
stem_step	stem step
arxiv_preprint	arxiv preprint
classifi_classif	classification classifier
classifi_support	classification support
mean_document	mean document
method_comput	method computing
technolog_issn	technology issn
appear_time	appearance time
auto_matic	auto matic
captur_semant	capture semantic
linguist_structur	linguistic structure
perform_base	perform based
word_refer	word reference
data_obtain	data obtain

describ_system	describe system
direct_graph	direct graph
help_improv	help improve
linear_model	linear model
model_provid	model provide
multipl_word	multiple word
probabl_document	probability document
topic_interest	topic interest
word_total	word total
accuraci_obtain	accuracy obtain
class_classifi	class classifiers
current_state	current state
experi_experi	experiment experiment
mathemat_comput	mathematics computing
measur_cosin	measure cosin
messag_servic	message service
similar_text	similar text
achiev_good	achievement good
algorithm_term	algorithm term
method_model	method model
metric_evalu	metric evaluation
stemmer_arab	stemmer arab
system_consid	system consideration
system_requir	system required
tweet_collect	tweet collection
word_user	word user
appli_cluster	appli cluster
learn_task	learning task
document_organ	document organisation
measur_comput	measure computing
term_given	term given
user_find	user find
bay_model	baysian model
consid_term	consid term
mcgraw_hill	mcgraw hill
method_document	method document
model_cluster	model cluster
retriev_data	retireval data
search_inform	search information

basic_idea	basic idea
blog_post	blog post
comput_survei	computer survey
deriv_word	deriv word
main_contribut	main contribut
estim_paramet	estimation parameters
form_cluster	form cluster
method_name	method name
model_techniqu	model technique
neural_inform	neural information
binari_classifi	binary classifiers
charact_token	characteristic token
latent_variabl	latent variable
system_comput	system computing
task_automat	task automatic
text_includ	text include
us_neural	usage of neural
algorithm_describ	algorithm describe
algorithm_method	algorithm method
algorithm_requir	algorithm required
applic_us	application usage
calcul_score	calculate score
featur_number	feature number
inform_base	information based
method_achiev	method achievement
studi_focus	study focus
comput_program	computer program
dataset_test	dataset test
identifi_emot	identification emotion
replac_word	replac word
statist_data	statistic data
automat_detect	automatic detect
calcul_word	calculate word
commun_system	communication system
develop_tool	develop tool
featur_classif	feature classifier
graphic_model	graphic model
process_term	process term
semant_resourc	semantic resource

text_analyt	text analytics
word_weight	word weight
match_match	match match
valu_obtain	value obtain
defin_term	define term
us_maximum	usage of maximum
cluster_comput	cluster computing
space_word	space word
token_document	token document
model_dataset	model dataset
novel_approach	novel approach
vocabulari_word	vocabulary word
frequenc_measur	frequency measure
ground_truth	ground truth
level_represent	level represent
process_select	process selection
algorithm_automat	algorithm automatic
index_word	index word
proc_sigir	proceeding sigir
algorithm_achiev	algorithm achievement
appli_algorithm	applied algorithm
averag_length	average length
evalu_base	evaluation based
form_term	form term
machin_intellig	machine intelligence
mine_base	mine based
professor_comput	professor computing
techniqu_reduc	technique reduced
us_tool	usage of tool
vector_term	vector term
evalu_dataset	evaluation dataset
extract_semant	extraction semantic
process_machin	process machine
adject_noun	adjective noun
collect_process	collection of process
gradient_descent	gradient descent
inform_structur	information structure
languag_world	language world
learn_us	learning usage

model_make	model make
text_form	text form
analysi_natur	analysis nature
complex_system	complex system
levenshtein_distanc	levenshtein distance
million_peopl	million people
model_structur	model structure
remain_word	remain word
search_data	search data
approach_solv	approach solve
document_convert	document convert
extern_knowledg	external knowledge
appli_document	applied document
assign_categor	assign category
distribut_data	distribution data
network_commun	network communication
tree_base	tree based
larger_number	larger number
novel_method	novel method
preprint_arxiv	preprint arxiv
represent_vector	represent vector
us_keyword	usage of keyword
data_classifi	data classifiers
distribut_term	distribution term
group_base	group based
relev_user	relevant user
summar_task	summar task
type_word	type word
vector_weight	vector weight
weight_weight	weight weight
approach_method	approach method
column_repres	column represent
dept_comput	dept computing
keyword_search	keyword search
measur_word	measure word
model_analysi	model analysis
perform_comparison	perform comparisonison
user_input	user input
approach_gener	approach generator

base_keyword	base keyword
base_multi	base multiple
base_score	base score
base_valu	base value
data_size	data size
data_social	data social
perform_variou	perform various
reduc_comput	reduced computing
studi_us	study usage
us_measur	usage of measure
word_input	word input
workshop_text	workshop text
accuraci_score	accuracy score
approach_identifi	approach identification
base_queri	base query
determin_word	determin word
maximum_valu	maximum value
model_creat	model creation
take_time	take time
us_number	usage of number
user_us	user usage
averag_time	average time
classifi_predict	classification prediction
knowledg_inform	knowledge information
perform_stem	perform stem
valu_given	value given
word_replac	word replaced
document_appear	document appearance
kullback_leibler	kullback leibler
number_distinct	number distinction
learn_autom	learning autom
requir_number	required number
becom_popular	become popular
process_call	process call
similar_featur	similar feature
singl_term	single term
term_calcul	term calculate
term_topic	term topic
type_document	type document

appli_mathemat	applied mathematics
creat_word	creation word
decreas_number	decreas number
master_degre	master degree
test_train	test training
text_evalu	text evaluation
cosin_angl	cosine angle
evalu_cluster	evaluation cluster
evalu_lrec	evaluation lrec
given_user	given user
includ_step	included step
likelihood_estim	likelihood estimation
mine_icdm	mine icdm
model_experi	model experiment
optim_number	optimal number
process_order	process order
queri_queri	query query
recent_studi	recent study
similar_concept	similar concept
strip_program	strip program
classifi_emot	classification emotion
consid_word	considered word
inform_featur	information feature
measur_combin	measure combined
model_number	model number
refer_word	reference word
techniqu_stem	technique stem
word_letter	word letter
approach_present	approach present
integr_data	integration of data
method_data	method data
model_present	model present
multi_dimension	multiplee dimension
select_select	selection selection
system_abl	system able
text_exampl	text example
base_function	base function
develop_base	develop based
emot_analysi	emotion analysis

mine_introduct	mine introduction
morpholog_syntact	morphology syntactic
score_evalu	score evaluation
servic_name	service name
precis_rate	precision rate
order_compar	order comparison
similar_function	similar function
step_algorithm	step algorithm
neg_emot	negative emotion
particular_categor	particular category
advanc_neural	advanced neural
cluster_form	cluster form
html_http	html http
particular_document	particular document
reduc_dimens	reduced dimension
stem_approach	stem approach
twitter_social	twitter social
accuraci_text	accuracy text
learn_theori	learning theory
select_appropri	selection appropriate
task_document	task document
term_index	term index
text_model	text model
time_frame	time frame
analysi_determin	analysis determine
classifi_class	classification class
creativ_common	creative common
lower_valu	lower value
match_algorithm	match algorithm
problem_data	problem data
techniqu_term	technique term
word_algorithm	word algorithm
class_cluster	class cluster
evalu_topic	evaluation topic
process_describ	process describe
system_inform	system information
tion_retriev	tion retrieval
total_score	total score
user_select	user selection

word_defin	word define
word_find	word find
collect_us	collection of usage
data_perform	data performance
dice_similar	dice similarity
formal_defin	formal define
respons_time	response time
techniqu_order	technique order
distribut_similar	distribution similarity
probabl_term	probability term
document_assign	document assign
leibler_diverg	leibler divergence
bucklei_term	bucklei term
categor_comput	category computing
collect_dataset	collection of dataset
introduc_modern	introduction modern
keyword_arab	keyword arab
search_us	search usage
size_document	size document
system_page	system page
time_document	time document
charact_number	characteristic number
document_select	document selection
effect_method	effect method
languag_complex	language complex
method_take	method take
signific_amount	significant amount
analysi_classif	analysis classifier
appli_comput	applied computing
document_obtain	document obtain
main_focu	main focus
model_outperform	model outperform
probabl_class	probability class
represent_method	represent method
term_mean	term mean
word_singl	word single
algorithm_present	algorithm present
approach_comput	approach computing
corpu_includ	corpus include

data_analyz	data analyse
data_experi	data experiment
depend_word	depend word
describ_method	describe method
distribu_tion	distribu tion
frequenc_featur	frequency feature
good_accuraci	good accuracy
human_behavior	human behavior
lucen_apach	lucene apache
main_advantag	main advantage
saudi_arabia	saudi arabia
tag_tag	tag tag
us_automat	usage of automatic
word_inform	word information
analysi_identifi	analysis identification
common_attribut	common attribute
exampl_tweet	example tweet
model_find	model find
normal_term	normal term
polar_text	polar text
preci_sion	preci sion
system_includ	system include
text_therefor	text therefore
theori_applic	theory application
us_linguist	usage of linguistics
word_correspond	word correspond
neg_train	negitive training
cluster_hierarch	cluster hierarchy
document_reduc	document reduced
index_databas	index database
stage_text	stage text
class_repres	class represent
cluster_evalu	cluster evaluation
document_includ	document include
experiment_studi	experimentment study
identifi_topic	identification topic
social_interact	social interact
user_label	user label
vector_similar	vector similarity

word_normal	word normal
descend_order	descend order
form_verb	form verb
semant_represent	semantic represent
stem_gener	stem generator
stem_porter	stem porter
term_contain	term contains
text_obtain	text obtain
us_languag	usage of language
us_queri	usage of query
document_content	document content
document_increas	document increase
evalu_qualiti	evaluation quality
filter_us	filter usage
huge_number	huge number
match_user	match user
remov_letter	removal of letter
step_preprocess	step preprocess
weight_score	weight score
word_vocabulari	word vocabulari
avail_abl	available able
document_distribut	document distribution
extract_task	extraction task
imag_analysi	image analysis
languag_make	language make
obtain_cluster	obtain cluster
process_identifi	process identification
significantli_reduc	significantly reduced
step_extract	step extraction
step_identifi	step identification
system_term	system term
us_graph	usage of graph
us_knowledg	usage of knowledge
approach_machin	approach machine
independ_assumpt	independant assumptions
method_mean	method mean
number_sampl	number sample
origin_dataset	origin dataset
problem_automat	problem automatic

twitter_stream	twitter stream
user_system	user system
data_distribut	data distribution
document_call	document call
avail_document	available document
calcul_distanc	calculate distance
input_train	input training
base_emot	base emotion
develop_evalu	develop evaluation
featur_evalu	feature evaluation
linear_function	linear function
particular_domain	particular domain
randomli_chosen	randomli chosen
valu_measur	value measure
algorithm_mine	algorithm mine
analyz_tweet	analyse tweet
imag_video	image video
measur_find	measure find
number_retriev	number retireval
process_automat	process automatic
process_take	process take
requir_user	required user
rule_combin	rule combined
signific_word	significant word
appli_stem	applied stem
applic_servic	application service
base_structur	base structure
calcu_late	calcu late
correspond_sentenc	correspond sentence
experi_text	experiment text
featur_calcul	feature calculate
interact_user	interactive user
map_word	map word
order_understand	order understand
search_retriev	search retireval
token_remov	token removal
us_gener	usage of generator
vector_train	vector training
weight_obtain	weight obtain

class_posit	class positive
commun_comput	communication computing
consist_phase	consist of phases
correctli_identifi	correctly identification
document_form	document form
experi_dataset	experiment dataset
knowledg_resourc	knowledge resource
languag_social	language social
system_measur	system measure
text_method	text method
word_chang	word change
engin_issu	engineering issue
identifi_us	identification usage
determin_number	determin number
normal_word	normal word
text_identifi	text identification
world_congress	world congress
comparison_method	comparison method
document_improv	document improve
precis_calcul	precision calculate
stem_document	stem document
centroid_cluster	centroid cluster
data_approach	data approach
indic_word	indication word
interest_user	interest user
punctuat_remov	punctuation remov
set_featur	set feature
twitter_facebook	twitter facebook
variou_techniqu	various technique
word_ad	word ad
accu_raci	accuracies
algorithm_accuraci	algorithm accuracy
algorithm_consist	algorithm consist
algorithm_naiv	algorithm naive
collect_collect	collection of collection
compar_us	compare usage
comparison_document	comparison document
comparison_precis	comparison precision
describ_process	describe process

develop_develop	develop develop
equal_length	equal length
featur_perform	feature performance
frequenc_corpu	frequency corpus
http_lucen	http lucene
keyword_queri	keyword query
measur_estim	measure estimation
model_take	model take
obtain_word	obtain word
probabilist_classifi	probabilistic classifiers
process_activ	process activity
score_comput	score computing
step_select	step selection
system_learn	system learning
term_relev	term relevant
word_structur	word structure
word_type	word type
algorithm_classif	algorithm classifier
base_mean	base mean
clean_data	clean data
document_creat	document creation
document_remov	document removal
extract_name	extraction name
func_tion	function
issn_issn	issn issn
matrix_term	matrix term
meaning_inform	meaning information
method_detect	method detection
output_process	output process
system_avail	system available
system_detect	system detect
text_sourc	text source
time_base	time based
remov_step	removal of step
parent_node	parent node
perform_obtain	perform obtain
word_lead	word lead
appear_text	appearance text
cluster_repres	cluster represent

inform_servic	information service
predefin_class	predefined class
applic_inform	application information
becom_increasingli	become increaseinglei
classif_data	classification data
inform_social	information social
lower_number	lower number
techniqu_featur	technique feature
affix_word	affix word
classif_arab	classification arab
dataset_avail	dataset available
dataset_creat	dataset creation
featur_semant	feature semantic
function_similar	function similarity
perform_step	perform step
repres_singl	represent single
step_gener	step generator
time_number	time number
token_us	token usage
vector_number	vector number
approach_pattern	approach pattern
contain_topic	contain topic
content_type	content type
degre_similar	degree of similarity
form_inform	form information
improv_us	improved usage
inform_form	information form
interest_pattern	interest pattern
model_produc	model produce
present_text	present text
score_precis	score precision
stem_exampl	stem example
text_appli	text application
valu_chosen	value chosen
automat_emot	automatic emotion
base_perform	base performance
cluster_topic	cluster topic
contain_specif	contain specification
data_describ	data describe

data_estim	data estimation
data_user	data user
electron_commun	electron communication
exist_techniqu	existing technique
frequenc_text	frequency text
languag_stem	language stem
method_topic	method topic
model_increas	model increase
object_base	object based
produc_cluster	produce cluster
rela_tionship	relationship
signific_number	significant number
similar_semant	similar semantic
system_creat	system creation
time_accuraci	time accuracy
topic_us	topic usage
train_word	training word
word_valu	word value
semant_concept	semantic concept
languag_form	language form
stemmer_compar	stemmer comparison
distribut_class	distribution class
binari_valu	binary value
consid_number	consid number
document_therefor	document therefore
gener_train	general training
higher_weight	higher weight
method_present	method present
word_preposit	word preposition
approach_select	approach selection
assign_cluster	assign cluster
cluster_compar	cluster comparison
form_form	form form
grow_rapidli	grow rapidly
matrix_contain	matrix contains
method_semant	method semantic
term_identifi	term identification
text_present	text present
topic_similar	topic similarity

vector_input	vector input
analysi_comput	analysis computing
analysi_problem	analysis problem
approach_compar	approach comparison
emerg_technolog	emerging technology
exist_algorithm	exist algorithm
graph_model	graph model
luhn_automat	luhn automatic
method_construct	method construction
order_measur	order measure
perform_fold	perform fold
remov_nois	removal of noisy
similar_approach	similar approach
system_refer	system reference
tool_provid	tool provide
transact_pattern	transaction pattern
analysi_knowledg	analysis knowledge
base_appli	base application
base_rank	base rank
classifi_term	classification term
crucial_role	crucial role
featur_learn	feature learning
field_data	field data
function_defin	function define
gener_architectur	general architecture
good_featur	good feature
lemmat_word	lemmation word
mathemat_scienc	mathematics science
media_content	media content
model_machin	model machine
morpho_syntact	morphology syntactic
number_attribut	number attribute
number_concept	number concept
perform_dataset	perform dataset
similar_group	similar group
simpl_probabilist	simple probabilist
solv_issu	solving issue
split_text	split text
step_find	step find

stochast_gradient	stochastic gradient
text_step	text step
third_type	third type
type_system	type system
cluster_correspond	cluster correspond
compar_origin	compare origin
sequenc_model	sequence model
rule_defin	rule define
correspond_featur	correspond feature
process_search	process search
therefor_develop	therefore develop
word_indic	word indication
catégori_us	category usage
classif_new	classification new
correspond_topic	correspond topic
dictionari_dictionari	dictionary dictionary
document_normal	document normal
engin_retriev	engineering retrieval
inquiri_word	inquiry word
remov_arab	removal of arab
requir_addit	required additionality
step_token	step token
us_normal	usage of normal
alphabet_charact	alphabet characteristic
base_implement	base implement
base_pattern	base pattern
base_probabl	base probability
case_text	case text
charact_punctuat	characteristic punctuation
engin_inform	engineering information
extract_phrase	extraction phrase
initi_step	initial step
measur_qualiti	measure quality
method_effect	method effect
model_calcul	model calculate
particular_case	particular case
rapid_develop	rapid develop
string_number	string number
system_make	system make

toulous_franc	toulousage of france
us_resourc	usage of resource
valu_model	value model
vector_length	vector length
word_porter	word porter
approach_found	approach found
call_term	call term
classifi_decis	classification decision
content_tweet	content tweet
database_commun	database communication
document_specif	document specification
human_social	human social
inform_analysi	information analysis
linguist_volum	linguistic volume
method_case	method case
model_thu	model thu
page_contain	page contains
partial_support	partial support
plai_crucial	play crucial
problem_includ	problem include
scienc_softwar	science software
step_approach	step approach
step_featur	step feature
studi_comput	study computing
system_capabl	system capable
system_project	system project
techniqu_help	technique help
techniqu_perform	technique performance
text_twitter	text twitter
time_exampl	time example
tool_gener	tool generator
us_preprocess	usage of preprocess
vector_contain	vector contains
document_phrase	document phrase
text_vector	text vector
algorithm_given	algorithm given
method_word	method word
problem_word	problem word
spend_time	spend time

state_model	state model
combin_term	combined term
effici_search	efficiency search
enorm_amount	enormous amount
further_increas	further increase
model_addit	model additionalty
model_requir	model required
select_topic	selection topic
term_search	term search
test_compar	test comparison
addit_word	additional word
analysi_applic	analysis application
approach_reli	approach rely
databas_search	database search
elimin_stem	elimination stem
eval_uation	evaluation
identifi_similar	identification similarity
knowledg_document	knowledge document
network_machin	network machine
split_data	split data
steinbach_karypi	steinbach karipi
store_file	store file
topic_exampl	topic example
user_data	user data
valu_posit	value positive
accord_word	accord word
algorithm_determin	algorithm determine
anger_fear	anger fear
approach_consist	approach consist
approach_outperform	approach outperform
candid_gener	candidate generator
choos_number	choose number
collect_period	collection of period
compar_number	compare number
construct_graph	construct graph
count_time	count time
descrip_tion	description
design_algorithm	design algorithm
document_view	document view

extract_textual	extraction textual
featur_preprocess	feature preprocess
filter_step	filter step
help_classifi	help classifiers
independ_given	independant given
knowledg_sourc	knowledge source
label_class	label class
method_produc	method produce
overal_score	overall score
process_human	process human
step_construct	step construct
strength_weak	strength weak
test_purpos	test purpose
us_extern	usage of extern
word_divid	word divide
word_system	word system
topic_categor	topic category
consid_time	considerable time
data_partit	data partition
exist_document	exist document
featur_name	feature name
iter_step	iteration step
label_base	label based
media_platform	media platform
method_keyword	method keyword
base_frequent	base frequent
cate_gori	category
comparison_baselin	comparison basedlin
comput_perform	computer performance
consid_case	consider case
dataset_method	dataset method
distribut_represent	distribution represent
introduc_concept	introduce concept
level_document	level document
metric_text	metric text
queri_gener	query generator
support_grant	support grant
user_perform	user performance
variou_approach	various approach

accuraci_number	accuracy number
affect_user	affect user
analysi_emot	analysis emotion
analysi_featur	analysis feature
analysi_order	analysis order
averag_sentenc	average sentence
categori_tweet	category tweet
contain_singl	contain single
discoveri_databas	discovery database
distanc_calcul	distance calculate
experi_featur	experiment feature
graph_structur	graph structure
increas_precis	increase precision
keyword_cluster	keyword cluster
level_system	level system
main_sourc	main source
neg_affect	negative affect
network_data	network data
order_base	order based
process_construct	process construct
sampl_test	sampl test
step_build	step build
us_exampl	usage of example
user_give	user give
vector_calcul	vector calculate
word_retriev	word retireval
written_java	written java
ad_word	ad word
extern_sourc	extern source
featur_posit	feature positive
overal_system	overal system
stem_languag	stem language
algorithm_consid	algorithm consideration
automat_creation	automatic creationion
cluster_unsupervis	cluster unsupervised
dataset_compar	dataset comparison
describ_algorithm	describe algorithm
effici_cluster	efficiency cluster
full_word	full word

model_human	model human
punctuat_stop	punctuation stop
rang_valu	range value
remov_frequent	removal of frequent
sampl_word	sample word
time_text	time text
word_affect	word affect
algorithm_obtain	algorithm obtain
approach_provid	approach provide
calcul_step	calculate step
difficult_languag	difficult language
document_arab	document arab
equat_calcul	equation calculate
extract_variou	extraction various
famili_member	family member
index_base	index based
indic_cluster	indication cluster
inform_becom	information become
manual_extract	manual extraction
metric_base	metric based
miller_wordnet	miller wordnet
perform_supervis	perform supervised
process_design	process design
process_part	process part
score_method	score method
stream_text	stream text
system_conclus	system conclusion
test_split	test split
topic_cover	topic cover
uniqu_featur	unique feature
user_send	user send
predict_categor	prediction category
annual_symposium	annual symposium
model_respect	model respect
analysi_time	analysis time
approach_deal	approach deal
base_natur	base nature
collect_user	collection of user
creation_literatur	creationion literature

data_group	data group
document_pars	document parse
exampl_queri	example query
normal_us	normal usage
topic_refer	topic reference
complet_text	complet text
context_process	context process
correl_topic	correlation topic
data_chang	data change
help_peopl	help people
inform_thu	information thu
limit_word	limit word
method_exampl	method example
mine_word	mine word
model_prove	model prove
model_singl	model single
nois_data	noisy data
perform_find	perform find
term_process	term process
time_make	time make
us_collect	usage of collection
us_determin	usage of determine
user_accord	user according
valu_text	value text
word_correl	word correlation
mean_approach	mean approach
current_version	current version
martin_porter	martin porter
obtain_relev	obtain relevant
refer_mean	reference mean
term_obtain	term obtain
approach_discov	approach discovery
approach_estim	approach estimation
catégori_classif	category classifier
classifi_built	classification built
classifi_simpl	classification simple
data_initi	data initilisation
featur_input	feature input
function_determin	function determin

improv_document	improved document
measur_emot	measure emotion
preprocess_token	preprocess token
problem_lack	problem lack
process_complet	process complete
provid_signific	provide significant
select_group	selection group
system_stem	system stem
thousand_document	thousand document
train_remain	training remain
contain_user	contain user
email_address	email address
account_order	account order
accuraci_significantli	accuracy significantly
base_lexic	base lexicon
base_theori	base theory
becom_time	become time
featur_task	feature task
limit_term	limit term
process_break	process break
public_date	public date
retriev_semant	retireval semantic
space_number	space number
studi_analysi	study analysis
symposium_document	symposium document
tree_approach	tree approach
apach_core	apache core

## APPENDIX 5-E

This appendix contains the document occurrence results.

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
machin_learn	40	40	40	39	37	15	196	9.95
text_mine	53	50	52	45	40	12	240	15.48
natur_languag	46	49	51	40	35	10	221	15.16
inform_retriev	49	48	42	38	33	8	210	15.13
data_mine	38	38	41	32	31	7	180	12.45
stop_word	40	45	39	39	32	14	195	11.02
navi_bay	25	28	24	20	33	5	130	9.61
text_classif	28	34	18	16	29	4	125	10.99
languag_process	37	43	46	41	33	8	200	13.84
featur_select	20	20	20	15	23	3	98	7.25
text_document	33	36	34	27	23	9	153	10.06
sentiment_analysi	13	16	14	14	18	3	75	5.22
neural_network	16	15	17	12	20	5	80	5.19
social_media	9	14	9	14	19	5	65	4.97
precis_recal	26	25	19	22	16	7	108	7.03
social_network	14	17	15	14	13	3	73	4.93
document_cluster	17	17	18	10	8	4	70	5.82
part_speech	14	21	22	17	16	2	90	7.2
comput_linguist	25	22	24	22	20	8	113	6.21
arab_text	9	9	9	8	7	2	42	2.73
topic_model	8	7	7	11	6	4	39	2.32
term_frequenc	21	33	28	25	22	8	129	8.47
text_categor	23	23	21	16	12	4	95	7.5
support_vector	24	23	15	20	26	6	108	7.43
vector_space	23	21	19	17	9	9	89	6.02
train_data	19	24	17	22	25	6	107	6.97
vector_machin	22	22	14	22	25	6	105	7.15
name_entiti	12	9	12	7	7	3	47	3.44
search_engin	17	19	24	20	9	3	89	7.81
similar_measur	16	23	21	17	9	5	86	6.94
document_frequenc	24	31	25	21	21	7	122	7.99
featur_extract	16	17	15	12	17	5	77	4.63
posit_neg	15	17	15	12	12	6	71	3.87

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
base_approach	18	21	25	21	10	5	95	7.61
term_weight	21	23	12	9	9	2	74	7.97
text_process	21	19	23	23	21	2	107	8.06
text_analysi	19	22	25	22	18	8	106	5.93
learn_algorithm	17	23	14	19	24	4	97	7.31
word_remov	28	28	28	31	20	10	135	7.86
space_model	22	18	15	15	10	5	80	5.98
artifici_intellig	23	25	23	21	19	5	111	7.31
cross_valid	8	10	8	11	17	5	54	4.07
arab_languag	9	10	11	7	5	3	42	3.08
featur_vector	18	12	13	6	13	3	62	5.42
stem_algorithm	18	22	21	15	13	7	89	5.59
cluster_algorithm	13	14	7	10	10	1	54	4.71
word_document	21	29	21	22	16	10	109	6.37
train_test	16	16	9	8	12	9	61	3.61
scienc_engin	16	20	13	17	13	3	79	5.85
number_word	21	22	17	25	15	7	100	6.4
word_stem	24	28	29	26	22	4	129	9.26
inform_extract	18	17	21	14	9	3	79	6.62
decis_tree	15	18	11	10	17	1	71	6.26
document_collect	19	28	19	19	9	5	94	8.24
semant_analysi	17	14	13	16	11	5	71	4.32
softwar_engin	5	15	9	9	7	2	45	4.4
document_document	32	21	13	18	14	3	98	9.62
latent_semant	16	14	8	14	9	5	61	4.29
invers_document	17	25	17	19	20	7	98	5.92
retriev_system	21	14	11	16	7	3	69	6.45
depart_comput	26	19	19	23	18	4	105	7.57
bay_classifi	10	12	13	11	15	1	61	4.89
test_data	10	17	7	14	15	3	63	5.33
cosin_similar	15	15	12	9	6	5	57	4.37
document_term	21	19	21	15	14	2	90	7.17
data_process	10	9	16	12	14	1	61	5.24
data_set	18	14	12	15	18	3	77	5.57
data_collect	13	24	14	10	13	3	74	6.79
rule_base	9	14	14	17	13	2	67	5.32
word_list	20	10	8	17	7	3	62	6.43
train_model	9	6	8	8	6	6	37	1.33

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
keyword_extract	5	7	7	10	5	1	34	2.99
random_forest	2	5	2	4	12	2	25	3.89
base_method	14	17	12	13	13	4	69	4.36
nearest_neighbor	12	16	5	8	14	1	55	5.72
latent_dirichlet	11	9	4	11	4	3	39	3.74
stem_word	13	18	16	19	14	4	80	5.4
classif_algorithm	12	15	10	9	18	2	64	5.51
porter_stemmer	8	9	8	7	9	9	41	0.82
speech_tag	12	11	14	8	8	1	53	4.56
mine_techniqu	6	11	17	10	8	5	52	4.32
knowledg_base	9	15	17	15	9	4	65	4.97
scienc_technolog	14	21	16	11	10	4	72	5.79
electr_engin	4	6	3	5	6	3	24	1.38
supervis_learn	11	17	11	11	16	1	66	5.67
semant_similar	4	14	7	11	4	5	40	4.14
model_base	21	10	10	10	12	1	63	6.38
base_featur	11	12	5	10	9	4	47	3.27
engin_comput	4	9	4	6	10	4	33	2.71
light_stem	7	7	5	6	4	1	29	2.28
text_file	12	10	10	14	13	4	59	3.56
cloud_comput	2	3	6	2	9	1	22	3.06
data_analysi	10	12	11	11	15	4	59	3.62
document_contain	22	22	18	11	13	7	86	6.16
dirichlet_alloc	11	8	4	11	4	3	38	3.66
automat_text	17	16	12	11	10	2	66	5.35
remov_stop	16	26	19	19	16	6	96	6.51
engin_technolog	4	9	9	14	9	5	45	3.56
cluster_cluster	11	11	6	11	7	2	46	3.69
document_classif	18	9	11	8	12	4	58	4.68
word_sentenc	9	20	10	12	13	1	64	6.18
model_us	7	12	8	8	15	6	50	3.44
word_frequenc	12	12	7	14	12	4	57	3.82
languag_model	11	7	4	8	8	1	38	3.51
classif_us	14	17	12	9	15	4	67	4.71
solv_problem	16	15	12	11	7	1	61	5.57
system_us	12	15	15	9	14	4	65	4.32
recal_precis	12	11	13	13	7	4	56	3.69
learn_approach	10	12	10	13	14	3	59	3.93

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
document_summar	6	7	7	7	4	1	31	2.42
frequenc_word	12	15	12	14	11	5	64	3.51
inform_scienc	20	23	16	17	12	3	88	7.03
word_text	18	21	19	9	16	4	83	6.6
frequenc_term	21	15	14	12	11	2	73	6.22
frequenc_invers	15	21	12	15	17	6	80	5.05
improv_perform	19	13	11	10	15	5	68	4.75
relev_document	19	8	7	18	7	3	59	6.56
inform_process	17	20	20	14	13	4	84	5.99
comput_applic	12	13	8	7	9	4	49	3.31
document_word	17	17	16	20	10	3	80	6.24
extract_featur	16	11	9	9	14	6	59	3.66
compar_studi	16	13	15	11	12	1	67	5.39
method_base	14	13	14	11	12	3	64	4.17
select_method	11	13	5	4	12	2	45	4.71
recal_measur	11	13	10	10	10	3	54	3.39
classif_accuraci	14	10	13	6	14	2	57	4.92
number_time	14	17	17	14	11	2	73	5.61
topic_topic	9	7	8	10	6	3	40	2.48
learn_model	6	8	2	9	10	4	35	3.08
document_repres	23	15	7	9	12	4	66	6.74
languag_text	14	15	13	13	9	2	64	4.86
learn_techniqu	11	15	14	13	15	3	68	4.58
cluster_method	13	12	7	6	5	2	43	4.23
similar_document	14	15	14	11	7	2	61	5.09
multi_document	3	6	3	6	3	1	21	1.97
base_model	10	13	8	10	11	2	52	3.79
number_featur	13	11	10	4	7	3	45	4
document_us	21	21	14	14	10	3	80	6.85
knowledg_discoveri	16	18	22	12	9	3	77	6.8
word_appear	14	14	14	14	12	4	68	4
word_featur	9	6	8	7	8	4	38	1.79
document_vector	12	9	8	7	7	4	43	2.64
mean_word	10	20	11	13	7	5	61	5.25
extract_text	10	23	13	15	11	4	72	6.28
textual_data	11	15	12	14	14	2	66	4.8
form_word	8	7	15	13	13	1	56	5.21
model_inform	5	8	4	3	6	3	26	1.94

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
repres_document	19	15	12	14	8	2	68	5.96
model_model	9	6	6	6	8	5	35	1.51
process_step	15	11	10	17	18	2	71	5.91
extract_inform	8	17	11	12	8	1	56	5.32
base_similar	11	11	11	10	4	6	47	3.06
languag_technolog	9	8	11	13	10	2	51	3.76
word_base	8	16	10	13	5	3	52	4.88
comput_engin	5	11	10	12	13	1	51	4.68
scienc_inform	6	6	6	12	10	1	40	3.82
right_reserv	5	9	5	3	3	1	25	2.73
opinion_mine	5	8	5	7	9	4	34	1.97
process_text	14	17	17	15	13	3	76	5.23
evalu_metric	5	7	6	5	4	5	27	1.03
manag_system	4	4	4	5	8	2	25	1.97
classif_task	13	16	9	6	10	1	54	5.27
document_number	14	12	11	8	10	5	55	3.16
stem_process	13	13	14	14	13	5	67	3.46
test_dataset	4	5	6	8	14	3	37	3.98
document_represent	9	9	9	8	8	1	43	3.14
noun_verb	7	15	13	9	8	1	52	4.92
weight_term	16	17	9	6	10	1	58	6.05
us_word	12	17	12	13	13	5	67	3.9
amount_data	5	8	11	12	9	2	45	3.76
word_model	10	8	7	10	5	5	40	2.26
document_matrix	9	7	3	10	10	1	39	3.83
number_topic	4	4	1	7	4	3	20	1.94
fold_cross	6	6	7	8	11	4	38	2.37
similar_word	7	10	7	12	5	5	41	2.8
word_vector	2	7	4	4	2	5	19	1.9
sentenc_document	10	11	6	8	5	1	40	3.66
featur_space	15	8	3	7	14	1	47	5.66
averag_precis	11	5	6	7	1	2	30	3.61
term_base	8	8	12	9	4	2	41	3.6
mean_cluster	9	6	7	9	7	2	38	2.58
logist_regress	1	3	4	6	7	3	21	2.19
term_extract	10	8	6	6	5	2	35	2.71
collect_document	20	16	13	8	10	4	67	5.74
recal_score	3	7	5	5	3	1	23	2.1

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
us_data	5	7	12	6	16	3	46	4.88
khoja_stemmer	1	4	4	2	3	1	14	1.38
text_content	3	12	8	10	6	1	39	4.18
stock_market	1	2	3	1	5	1	12	1.6
number_cluster	11	11	7	7	4	3	40	3.37
morpholog_analysi	10	8	6	8	5	1	37	3.14
pattern_recognit	13	13	10	7	11	3	54	3.89
us_inform	8	15	13	13	7	3	56	4.58
data_data	8	11	10	9	9	2	47	3.19
contain_word	13	13	8	16	12	3	62	4.62
classif_model	11	8	3	6	11	3	39	3.63
base_text	7	13	16	11	15	3	62	5
step_step	9	5	10	7	6	1	37	3.2
user_queri	5	9	12	13	5	2	44	4.37
model_train	8	6	6	8	8	6	36	1.1
train_document	12	11	6	4	7	1	40	4.17
featur_featur	15	8	7	5	8	4	43	3.87
index_term	14	13	12	10	9	3	58	3.97
select_featur	7	10	6	6	10	2	39	2.99
unstructur_data	11	14	8	6	7	1	46	4.45
arab_document	7	7	6	6	4	1	30	2.32
us_machin	7	13	5	12	12	1	49	4.8
time_consum	16	17	7	5	13	5	58	5.5
algorithm_base	8	6	10	15	17	4	56	5.1
analysi_retriev	5	1	4	5	1	3	16	1.83
knowledg_manag	12	9	7	12	9	1	49	4.08
cluster_base	12	9	13	5	6	2	45	4.26
cluster_document	11	11	7	7	5	1	41	3.79
learn_method	15	17	9	12	11	4	64	4.59
improv_accuraci	13	13	13	9	11	4	59	3.56
word_mean	7	12	15	14	7	5	55	4.2
textual_content	2	8	5	3	2	1	20	2.59
cluster_us	12	7	13	6	9	3	47	3.78
human_languag	8	12	15	12	10	2	57	4.49
predict_model	5	5	3	7	9	3	29	2.34
weight_scheme	12	7	13	6	6	3	44	3.87
base_system	11	8	10	6	11	1	46	3.87
intellig_system	8	14	5	11	9	6	47	3.31

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
collect_data	4	15	8	7	11	2	45	4.71
comput_inform	14	12	10	8	5	3	49	4.18
mobil_devic	4	5	2	4	4	1	19	1.51
word_occurr	5	10	6	8	5	1	34	3.06
document_text	16	15	10	12	10	2	63	5
classifi_classifi	8	6	7	5	10	2	36	2.73
cluster_techniqu	10	7	12	5	4	3	38	3.54
term_occur	13	11	11	8	7	4	50	3.29
gold_standard	5	4	2	8	5	1	24	2.48
queri_term	2	4	3	6	5	2	20	1.63
mean_algorithm	9	5	9	6	7	1	36	2.99
world_wide	12	9	12	16	4	2	53	5.31
text_preprocess	11	10	13	8	9	1	51	4.13
system_develop	4	9	6	6	9	2	34	2.76
term_term	14	11	12	9	4	1	50	5.01
develop_inform	13	18	10	9	9	3	59	4.97
point_view	5	6	9	6	5	1	31	2.58
word_root	8	16	11	11	8	1	54	4.96
recommend_system	2	5	5	2	5	1	19	1.86
maximum_entropi	9	7	8	4	6	1	34	2.93
stem_stem	10	13	13	8	9	1	53	4.43
error_rate	6	11	1	7	6	1	31	3.83
plai_role	9	8	10	7	8	1	42	3.19
singl_word	6	12	9	13	10	1	50	4.42
prefix_suffix	7	6	9	11	7	1	40	3.37
imag_process	3	5	4	7	6	1	25	2.16
root_word	5	10	9	9	10	4	43	2.64
document_retriev	17	8	8	9	3	2	45	5.34
retriev_document	14	9	7	15	6	2	51	4.96
spam_filter	7	4	2	3	3	3	19	1.75
occur_document	15	13	8	12	5	3	53	4.76
increas_number	12	11	8	10	10	3	51	3.22
system_base	10	13	5	7	8	2	43	3.83
classif_method	7	17	4	9	12	1	49	5.72
comput_system	2	11	7	5	8	3	33	3.35
inform_gain	8	11	9	3	7	2	38	3.5
data_train	6	12	7	13	13	4	51	3.97
document_similar	9	8	7	10	7	2	41	2.79

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
us_text	9	14	11	15	9	1	58	5
docu_ment	4	6	8	7	5	3	30	1.87
sourc_text	2	5	6	4	6	2	23	1.83
full_text	4	5	7	8	5	2	29	2.14
latent_topic	4	3	3	6	2	1	18	1.72
model_text	11	10	11	11	8	3	51	3.16
advanc_comput	4	5	6	5	8	1	28	2.32
genet_algorithm	3	1	3	5	8	1	20	2.66
knowledg_data	4	17	11	7	8	1	47	5.59
search_queri	2	6	4	7	2	2	21	2.23
frequent_word	9	12	6	8	10	4	45	2.86
inform_text	11	12	12	10	9	3	54	3.39
term_appear	14	11	10	6	4	1	45	4.84
class_label	10	10	6	3	6	6	35	2.71
train_dataset	3	6	4	7	9	2	29	2.64
number_term	12	7	10	7	8	2	44	3.39
probabl_distribut	8	7	1	10	6	3	32	3.31
preprocess_step	12	9	10	7	8	3	46	3.06
porter_stem	8	9	10	6	6	1	39	3.2
issn_onlin	2	4	5	8	3	1	22	2.48
linguist_featur	4	5	3	6	3	2	21	1.47
similar_score	5	6	7	8	6	4	32	1.41
text_retriev	11	13	7	12	4	2	47	4.54
evalu_us	7	4	8	9	6	2	34	2.61
word_occur	10	8	8	13	6	2	45	3.71
condit_probabl	7	5	7	6	6	1	31	2.25
data_engin	3	14	13	6	8	1	44	5.24
test_document	12	5	4	4	5	1	30	3.66
process_manag	10	9	7	8	8	2	42	2.8
exampl_word	10	10	12	7	9	3	48	3.15
languag_resourc	13	8	9	7	8	1	45	3.88
reduc_number	13	15	12	8	6	1	54	5.19
base_term	9	9	3	7	5	1	33	3.27
approach_base	7	8	14	8	11	4	48	3.44
base_classifi	8	4	6	2	11	1	31	3.78
process_techniqu	8	9	15	6	13	1	51	5.01
fals_posit	5	10	5	7	6	4	33	2.14
frequent_pattern	1	4	5	1	3	1	14	1.76

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
comput_commun	6	4	8	2	7	2	27	2.56
extract_keyword	4	8	5	5	2	2	24	2.25
deep_learn	1	2	2	3	9	3	17	2.88
method_us	10	7	10	10	9	5	46	2.07
phrase_base	4	4	8	3	1	1	20	2.59
document_corpu	13	6	6	10	6	3	41	3.56
inform_knowledg	12	15	5	10	8	1	50	5.01
classifi_text	11	10	7	11	12	2	51	3.76
word_extract	8	13	7	5	9	4	42	3.2
word_count	6	7	6	11	9	4	39	2.48
retriev_inform	17	16	9	9	3	1	54	6.52
list_word	11	8	4	12	6	1	41	4.2
structur_data	7	10	10	2	7	1	36	3.87
input_data	9	7	6	9	9	1	40	3.13
appear_document	10	11	6	10	6	2	43	3.45
train_classifi	8	10	6	7	9	4	40	2.16
sentenc_sentenc	6	10	6	5	6	1	33	2.88
classifi_us	8	10	6	6	10	3	40	2.71
text_us	7	14	10	14	11	3	56	4.26
combin_featur	3	8	1	5	7	2	24	2.8
classifi_train	8	9	4	4	7	1	32	3.02
approach_us	11	16	7	15	8	4	57	4.71
document_queri	5	7	2	6	6	2	26	2.16
classif_problem	13	11	3	6	12	2	45	4.79
object_function	4	2	2	3	5	1	16	1.47
text_corpu	6	9	3	10	8	1	36	3.54
process_inform	4	15	21	11	7	2	58	7.16
document_base	12	10	10	9	7	4	48	2.8
infor_mation	5	5	5	4	5	1	24	1.6
level_featur	3	2	1	4	3	1	13	1.21
system_perform	7	7	4	10	8	5	36	2.14
program_languag	8	5	2	12	7	1	34	4.07
system_applic	7	6	6	5	14	1	38	4.23
queri_expans	3	5	1	4	2	1	15	1.63
word_order	8	12	11	9	7	3	47	3.2
algorithm_algorithm	9	9	12	11	9	4	50	2.76
text_base	8	12	4	10	10	3	44	3.6
pattern_mine	5	5	3	3	3	1	19	1.51

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
issn_volum	3	4	7	2	1	2	17	2.14
remov_stem	9	18	13	10	10	4	60	4.63
evalu_measur	9	8	5	5	4	2	31	2.59
artifizi_neural	3	3	5	3	9	1	23	2.76
document_featur	13	5	6	6	3	2	33	3.87
view_project	6	12	8	9	8	1	43	3.67
model_evalu	5	3	3	8	7	4	26	2.1
media_text	1	5	1	3	5	2	15	1.83
euclidean_distanc	9	6	9	5	6	2	35	2.64
contain_term	12	13	8	8	5	4	46	3.61
algorithm_perform	8	8	8	11	8	1	43	3.33
extract_us	6	7	11	13	8	3	45	3.58
colleg_engin	3	11	6	7	6	1	33	3.44
build_model	3	4	3	4	9	1	23	2.68
linguist_analysi	2	6	3	4	3	2	18	1.51
engin_scienc	1	2	5	4	8	1	20	2.74
contain_document	11	7	8	8	7	2	41	2.93
singl_document	6	9	4	11	5	1	35	3.58
data_structur	10	6	7	9	7	2	39	2.79
system_design	8	10	12	8	9	1	47	3.74
soft_comput	6	5	4	6	5	1	26	1.87
volum_number	1	6	7	3	3	1	20	2.51
relev_inform	13	9	17	7	4	1	50	5.86
process_document	13	10	9	11	7	2	50	3.83
text_featur	6	7	8	5	5	2	31	2.07
cluster_process	7	8	4	4	6	1	29	2.53
word_us	11	11	5	12	7	2	46	4
classif_process	9	11	4	4	8	3	36	3.27
word_term	5	6	14	17	11	1	53	6.03
perform_test	2	1	3	8	2	1	16	2.64
input_output	6	8	6	3	5	1	28	2.48
user_request	11	18	14	13	7	2	63	5.64
word_embed	1	1	1	2	2	3	7	0.82
random_field	4	3	2	8	3	2	20	2.25
featur_base	7	6	5	7	8	1	33	2.5
public_http	9	17	11	13	8	1	58	5.38
word_topic	4	3	5	7	2	3	21	1.79
number_iter	5	3	1	3	5	3	17	1.51

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
unigram_bigram	3	8	5	3	5	2	24	2.16
allow_user	9	4	10	12	11	2	46	4.05
design_implement	8	3	10	6	6	2	33	2.99
content_base	6	11	4	3	3	1	27	3.5
semant_index	10	9	5	7	4	1	35	3.35
cluster_text	6	12	5	6	4	1	33	3.61
mathemat_model	3	2	3	2	4	1	14	1.05
document_process	15	10	5	8	7	1	45	4.72
algorithm_us	10	11	5	13	8	3	47	3.78
period_time	6	2	8	3	7	1	26	2.88
word_sens	10	4	8	8	6	3	36	2.66
content_page	10	21	11	11	9	1	62	6.38
wide_rang	6	9	9	8	10	1	42	3.31
comput_time	6	7	5	6	7	3	31	1.51
autom_text	10	10	8	9	5	1	42	3.54
document_topic	6	5	2	10	5	5	28	2.59
syntact_semant	4	7	4	2	5	1	22	2.14
method_text	9	12	11	6	9	1	47	4
unsupervis_learn	6	9	11	7	5	3	38	2.86
discoveri_data	10	9	15	7	5	3	46	4.22
informa_tion	6	4	2	6	3	4	21	1.6
data_text	9	8	12	10	11	3	50	3.19
topic_document	5	3	4	8	3	4	23	1.87
emot_recognit	2	1	1	2	1	2	7	0.55
perform_us	6	12	8	9	11	3	46	3.31
base_word	13	10	7	11	2	2	43	4.68
vector_represent	6	6	1	4	4	4	21	1.83
us_featur	9	9	10	10	10	1	48	3.54
measur_similar	9	16	11	7	5	2	48	4.89
corpu_base	4	3	9	7	4	3	27	2.45
text_word	6	14	8	9	8	1	45	4.23
graph_base	5	6	5	5	5	1	26	1.76
semant_featur	3	5	5	5	5	3	23	1.03
confus_matrix	2	6	4	5	5	2	22	1.67
emot_classif	1	1	1	2	3	1	8	0.84
network_analysi	7	6	6	3	3	1	25	2.34
unstructur_text	5	8	7	5	8	2	33	2.32
origin_document	8	3	7	7	6	2	31	2.43

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
proc_conf	8	5	7	3	5	1	28	2.56
sentenc_word	7	13	5	6	8	2	39	3.66
distanc_measur	4	6	12	5	6	2	33	3.37
berlin_heidelberg	4	8	5	8	9	3	34	2.48
measur_precis	3	5	4	6	5	1	23	1.79
similar_sentenc	2	7	7	4	2	2	22	2.45
represent_document	8	7	9	9	4	1	37	3.2
train_corpu	3	5	4	4	5	1	21	1.51
uniqu_word	6	5	4	10	3	3	28	2.64
data_model	2	3	7	7	6	1	25	2.66
hierarch_cluster	9	7	6	3	5	2	30	2.58
probabilist_model	7	8	8	7	5	1	35	2.68
evalu_perform	9	10	9	11	8	4	47	2.43
model_perform	6	4	3	8	7	5	28	1.87
word_level	3	4	4	3	4	1	18	1.17
pattern_base	3	7	5	4	3	1	22	2.04
classif_techniqu	6	5	3	4	12	1	30	3.76
calcul_us	5	8	6	7	11	2	37	3.02
data_sourc	5	6	4	4	10	1	29	2.97
occurr_word	6	13	6	9	7	1	41	3.95
commun_technolog	7	4	3	5	6	1	25	2.16
stem_arab	5	6	6	5	3	1	25	1.97
inform_commun	6	8	4	5	5	1	28	2.32
taken_account	5	6	4	6	11	1	32	3.27
fals_neg	3	8	5	6	5	3	27	1.9
tweet_contain	1	4	3	5	5	1	18	1.83
occurr_term	10	14	7	4	3	1	38	4.85
base_cluster	7	7	7	5	6	1	32	2.35
reduc_dimension	7	6	10	5	6	1	34	2.93
system_evalu	9	2	10	10	7	2	38	3.78
word_given	11	7	2	11	5	2	36	4.08
mine_text	9	10	13	4	8	2	44	4.03
dataset_dataset	7	5	7	7	5	3	31	1.63
process_time	6	8	2	6	5	1	27	2.66
time_period	4	6	4	4	3	1	21	1.63
automat_extract	5	9	11	4	8	1	37	3.67
dataset_consist	6	9	6	6	5	4	32	1.67
file_contain	4	8	5	7	6	1	30	2.48

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
test_perform	3	6	3	4	7	1	23	2.19
share_task	1	2	3	5	5	2	16	1.67
document_train	8	6	6	5	5	1	30	2.32
word_cluster	6	10	4	6	1	1	27	3.44
user_gener	4	6	4	5	4	2	23	1.33
base_semant	6	5	6	9	6	4	32	1.67
statist_analysi	3	9	6	5	13	1	36	4.31
transact_knowledg	3	12	9	5	4	1	33	4.08
model_built	2	3	4	5	8	1	22	2.48
twitter_user	1	1	3	6	5	2	16	2.1
model_document	13	5	9	7	4	1	38	4.18
retriev_relev	9	8	5	9	2	3	33	3.1
gram_gram	6	4	5	1	6	2	22	2.1
speech_recognit	5	4	3	4	4	1	20	1.38
linear_regress	1	2	1	5	5	3	14	1.83
data_point	5	4	7	3	5	2	24	1.75
common_word	11	9	5	10	7	1	42	3.71
signal_process	7	8	3	4	4	1	26	2.59
calcul_similar	7	11	5	5	6	3	34	2.71
system_system	7	8	9	7	6	2	37	2.43
model_data	6	5	4	8	9	1	32	2.88
standard_arab	4	5	1	5	4	1	19	1.86
perform_system	2	5	6	9	7	1	29	3.03
valu_calcul	1	10	8	9	9	1	37	4.18
cluster_similar	10	8	11	6	2	1	37	4.13
classif_text	10	9	6	6	12	1	43	3.88
frequenc_document	10	15	7	5	3	3	40	4.67
perform_evalu	10	11	5	8	4	3	38	3.31
precis_measur	3	5	5	6	6	3	25	1.37
algorithm_appli	10	9	11	8	8	1	46	3.54
text_classifi	8	9	6	4	6	1	33	2.88
model_predict	3	1	4	7	7	3	22	2.4
analysi_method	5	6	3	4	7	4	25	1.47
algo_rithm	2	5	7	8	3	2	25	2.59
distribut_topic	1	4	2	8	2	2	17	2.56
classifi_document	11	7	14	6	4	1	42	4.71
text_collect	8	5	8	6	2	1	29	2.97
extract_term	7	6	4	5	3	2	25	1.87

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
repres_vector	10	7	5	5	8	2	35	2.79
word_categori	7	2	5	5	2	1	21	2.34
accuraci_precis	5	2	5	6	3	1	21	1.97
punctuat_mark	7	7	11	7	5	1	37	3.27
test_set	6	3	2	3	7	4	21	1.94
data_extract	8	10	5	5	5	2	33	2.79
comput_technolog	6	6	4	5	7	1	28	2.14
word_represent	3	3	7	6	3	2	22	2
tabl_perform	4	5	2	7	7	4	25	1.94
neg_exampl	2	5	2	4	4	1	17	1.55
featur_word	2	8	7	8	6	1	31	3.08
rule_mine	2	4	7	2	6	1	21	2.42
test_test	2	3	2	6	4	3	17	1.51
us_porter	5	4	4	3	4	5	20	0.75
content_document	13	11	11	5	3	1	43	4.97
word_gener	8	9	9	7	5	1	38	3.08
document_model	6	3	1	8	3	2	21	2.64
gener_word	3	6	6	9	7	2	31	2.59
featur_valu	4	8	2	6	3	1	23	2.61
highest_accuraci	2	9	2	2	5	1	20	3.02
mine_method	3	8	7	6	4	2	28	2.37
develop_model	3	6	5	4	4	4	22	1.03
lexic_databas	4	9	5	7	4	1	29	2.76
regress_model	3	4	3	4	4	2	18	0.82
tweet_user	1	2	1	4	5	1	13	1.75
class_class	6	8	5	6	6	3	31	1.63
classif_cluster	12	10	6	8	3	1	39	4.18
featur_text	6	6	10	4	8	4	34	2.34
stem_stop	10	8	4	7	6	1	35	3.16
process_system	6	7	8	7	6	2	34	2.1
process_extract	8	11	10	4	8	3	41	3.2
develop_system	5	6	5	5	6	3	27	1.1
implement_us	7	6	4	8	12	2	37	3.45
request_enhanc	9	17	11	11	7	1	55	5.28
dataset_contain	6	6	9	7	10	2	38	2.8
extract_word	8	10	4	6	11	1	39	3.78
model_featur	5	6	2	6	8	1	27	2.66
comput_vision	3	4	1	9	5	2	22	2.83

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
us_classifi	2	6	2	4	11	1	25	3.72
train_exampl	12	6	3	5	5	1	31	3.72
evalu_system	11	3	3	4	6	2	27	3.31
word_contain	9	5	3	9	6	2	32	2.94
method_appli	13	9	1	10	7	1	40	4.92
extract_method	6	3	8	6	6	1	29	2.53
token_token	5	8	5	6	7	3	31	1.75
repres_text	7	13	2	4	7	2	33	4.17
retriev_text	10	11	13	10	3	1	47	4.82
discuss_stat	9	17	11	11	7	1	55	5.28
enhanc_download	9	17	11	11	7	1	55	5.28
public_stat	9	17	11	11	7	1	55	5.28
view_public	9	17	11	11	7	1	55	5.28
word_dictionari	5	7	2	6	4	3	24	1.87
cluster_number	5	5	3	4	4	1	21	1.51
word_repres	3	15	11	7	4	5	40	4.64
correl_coeffici	2	4	2	5	4	1	17	1.55
statist_machin	2	6	7	3	3	1	21	2.34
porter_algorithm	8	9	7	6	5	2	35	2.48
twitter_data	1	5	3	3	9	2	21	2.86
mine_algorithm	8	5	6	3	5	1	27	2.42
extract_document	8	11	6	6	4	2	35	3.13
sentenc_text	6	8	4	6	9	2	33	2.56
semant_relationship	6	8	2	5	2	2	23	2.56
techniqu_text	7	6	11	5	6	2	35	2.93
make_process	5	2	7	5	7	1	26	2.51
human_resourc	1	1	2	2	4	2	10	1.1
qualiti_cluster	5	3	5	3	2	2	18	1.37
relev_featur	9	3	4	6	7	2	29	2.64
manual_label	2	5	4	7	1	1	19	2.42
represent_model	5	3	7	2	5	2	22	2
word_consid	11	7	4	9	4	2	35	3.43
publicli_avail	4	5	3	8	5	1	25	2.34
automat_index	9	5	3	3	1	1	21	3.01
springer_verlag	8	10	6	1	8	3	33	3.41
distribut_word	6	5	4	6	5	4	26	0.89
keyword_text	6	11	10	11	5	1	43	4.03
word_similar	7	8	5	8	2	2	30	2.8

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
root_stem	7	6	7	3	2	1	25	2.66
measur_accuraci	5	7	3	6	4	2	25	1.87
cluster_approach	9	5	2	5	4	2	25	2.59
classif_approach	7	4	6	6	6	1	29	2.19
interest_includ	10	9	3	5	2	1	29	3.74
inform_document	9	11	9	7	3	2	39	3.6
mine_inform	11	8	10	7	5	2	41	3.31
document_index	9	8	4	6	4	2	31	2.66
featur_document	7	8	6	4	8	1	33	2.73
model_repres	8	9	5	6	6	1	34	2.79
neg_word	2	4	4	6	2	1	18	1.83
sequenc_word	7	7	9	5	14	2	42	4.03
perform_model	4	4	2	7	7	1	24	2.48
sens_disambigu	5	3	10	7	6	2	31	2.88
data_base	4	7	8	7	10	2	36	2.88
model_select	2	4	2	6	4	2	18	1.63
search_space	3	7	5	4	5	1	24	2.04
tweet_tweet	2	4	3	4	3	1	16	1.17
predict_stock	1	1	2	1	3	1	8	0.84
classifi_base	12	7	4	5	11	1	39	4.23
select_text	11	8	7	4	8	1	38	3.51
bay_algorithm	9	4	5	3	7	1	28	2.86
represent_text	8	6	11	6	4	1	35	3.41
resourc_evalu	9	7	5	4	6	1	31	2.73
dimension_space	9	7	6	7	5	1	34	2.71
main_idea	5	7	6	7	9	2	34	2.37
tree_structur	7	5	4	2	3	1	21	2.16
algorithm_cluster	6	9	11	4	4	2	34	3.41
word_stop	9	9	5	8	4	3	35	2.66
measur_measur	6	6	9	6	4	1	31	2.66
extract_sentenc	5	6	4	5	3	2	23	1.47
problem_solv	6	5	6	4	4	1	25	1.86
word_corpu	5	8	2	11	3	1	29	3.85
word_found	4	11	10	11	5	1	41	4.24
base_search	3	3	5	1	3	1	15	1.51
data_store	2	11	5	7	5	1	30	3.6
neg_neutral	1	6	3	1	6	1	17	2.45
issu_march	1	1	3	2	4	2	11	1.17

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
search_algorithm	1	7	3	4	3	1	18	2.23
recal_valu	4	6	1	7	3	2	21	2.32
techniqu_base	8	4	8	5	5	2	30	2.34
data_preprocess	3	3	7	5	9	1	27	2.94
method_perform	6	7	7	5	8	1	33	2.5
obtain_us	6	5	3	5	10	1	29	3.03
statist_model	6	10	3	5	7	2	31	2.88
accuraci_rate	2	3	1	1	5	1	12	1.6
textual_inform	2	8	4	4	6	1	24	2.56
cluster_data	6	8	6	7	4	2	31	2.17
test_collect	10	1	2	3	2	2	18	3.33
semant_inform	7	10	6	4	3	2	30	2.94
assist_professor	8	11	5	6	4	2	34	3.16
weight_word	6	7	4	10	4	2	31	2.81
bayesian_classifi	5	7	4	1	7	2	24	2.5
given_text	4	10	4	8	2	1	28	3.49
word_filter	4	3	4	6	5	1	22	1.72
content_word	5	7	6	4	2	2	24	2.07
execut_time	3	2	1	3	4	1	13	1.21
highest_score	8	6	2	5	6	2	27	2.4
repres_number	5	8	5	6	5	1	29	2.28
analyz_data	7	4	4	1	4	1	20	2.26
model_gener	5	8	3	10	7	2	33	3.06
repres_word	4	11	6	8	4	5	33	2.73
languag_word	4	6	5	8	6	3	29	1.75
topic_word	2	3	4	6	5	3	20	1.47
represent_word	1	7	6	7	2	4	23	2.59
tweet_us	1	5	3	4	5	1	18	1.83
base_algorithm	6	6	5	7	7	1	31	2.25
model_paramet	6	5	2	6	3	1	22	2.14
document_sentenc	5	7	3	5	1	2	21	2.23
content_text	6	8	8	4	10	2	36	2.94
method_automat	5	7	6	4	8	4	30	1.63
user_user	6	3	3	7	4	1	23	2.19
further_process	5	8	7	8	6	1	34	2.64
system_implement	6	7	7	5	3	1	28	2.4
process_perform	4	7	5	7	6	1	29	2.28
springer_berlin	3	6	4	7	5	2	25	1.87

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
accuraci_us	3	6	6	3	8	1	26	2.59
technolog_comput	3	5	5	3	2	1	18	1.6
volum_page	1	2	5	6	4	2	18	1.97
featur_gener	5	3	1	6	4	2	19	1.87
perform_measur	9	5	3	8	2	3	27	2.9
base_analysi	9	5	4	6	5	2	29	2.32
amount_inform	8	7	5	3	4	2	27	2.32
document_level	5	4	4	5	4	2	22	1.1
input_document	8	10	5	5	3	1	31	3.27
sentenc_base	3	7	5	5	3	2	23	1.83
mine_applic	9	6	10	6	5	2	36	2.88
valu_term	6	3	4	5	6	1	24	1.94
word_cloud	4	2	2	1	4	1	13	1.37
root_form	8	11	4	10	2	4	35	3.67
improv_qualiti	4	6	2	2	8	2	22	2.53
societi_inform	8	11	9	11	4	2	43	3.73
us_algorithm	5	8	7	8	9	1	37	2.94
model_develop	7	4	2	5	6	3	24	1.87
previou_studi	3	6	3	6	5	1	23	2
posit_word	2	5	10	7	4	1	28	3.31
text_contain	3	4	1	8	9	2	25	3.27
detect_system	2	3	3	3	7	3	18	1.76
charact_recognit	3	1	1	2	3	2	10	0.89
model_test	1	3	6	5	6	2	21	2.14
frequent_itemset	1	1	2	1	1	4	6	1.21
measur_perform	6	8	1	8	4	1	27	3.2
document_calcul	7	7	9	8	2	1	33	3.33
gibb_sampl	3	4	2	6	2	2	17	1.6
solut_problem	4	5	6	6	4	2	25	1.52
avail_onlin	5	4	4	5	6	1	24	1.72
weight_assign	4	4	3	3	5	1	19	1.37
model_topic	3	3	5	5	3	4	19	0.98
measur_text	2	6	8	7	5	3	28	2.32
help_user	10	8	4	5	5	2	32	2.88
cluster_perform	8	4	4	6	5	3	27	1.79
rank_document	4	3	4	7	1	1	19	2.25
train_sampl	4	3	2	4	5	2	18	1.21
perform_experi	7	5	4	2	8	4	26	2.19

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
previou_step	7	3	4	4	6	1	24	2.14
step_process	8	10	7	4	10	1	39	3.56
time_complex	6	5	4	3	3	1	21	1.75
number_text	5	7	3	2	4	1	21	2.16
us_techniqu	6	4	7	3	5	3	25	1.63
find_similar	5	6	6	10	1	2	28	3.22
correctli_classifi	4	6	4	5	5	3	24	1.05
word_process	4	5	7	8	8	1	32	2.74
languag_arab	2	7	2	5	6	2	22	2.28
type_data	3	5	4	4	5	1	21	1.51
data_avail	2	4	7	5	6	1	24	2.32
mine_data	2	7	6	5	9	2	29	2.79
number_user	1	2	1	5	2	2	11	1.47
extract_system	4	5	4	6	3	1	22	1.72
dimension_vector	6	7	3	4	1	2	21	2.32
learn_text	9	9	4	5	6	1	33	3.08
techniqu_appli	8	4	6	5	6	1	29	2.37
semant_mean	4	9	3	1	4	3	21	2.68
similar_valu	5	8	2	8	5	2	28	2.68
charact_word	5	5	3	8	3	1	24	2.4
cluster_centroid	5	2	1	1	5	1	14	1.97
function_word	6	4	4	5	4	2	23	1.33
user_search	4	6	4	3	4	1	21	1.63
word_number	6	10	6	7	11	2	40	3.22
order_reduc	6	9	8	6	4	2	33	2.56
degre_comput	3	7	3	2	5	2	20	1.97
dimension_data	4	7	9	3	4	1	27	2.88
exist_method	4	6	4	3	4	4	21	0.98
extract_data	4	7	7	7	6	1	31	2.42
vector_word	4	3	4	3	2	5	16	1.05
knowledg_engin	4	6	7	9	6	1	32	2.74
scienc_depart	4	6	5	3	3	1	21	1.75
string_match	3	2	4	3	2	1	14	1.05
main_problem	3	9	6	3	2	2	23	2.79
model_classifi	3	4	2	5	7	2	21	1.94
measur_us	2	6	2	8	7	2	25	2.81
origin_text	2	7	6	6	4	2	25	2.17
statist_inform	4	2	3	4	3	1	16	1.17

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
measur_evalu	6	2	7	6	3	4	24	1.97
find_relev	5	8	7	6	2	1	28	2.79
arab_corpu	3	4	5	3	3	1	18	1.33
system_architectur	3	4	7	5	5	3	24	1.52
assign_weight	4	3	7	7	8	1	29	2.76
mean_text	4	9	4	3	8	2	28	2.83
addit_featur	2	2	1	4	7	2	16	2.19
topic_base	3	7	2	2	3	2	17	1.94
weight_averag	3	6	5	3	4	1	21	1.75
word_token	3	4	6	11	2	3	26	3.31
group_group	2	7	2	6	4	1	21	2.42
process_model	1	4	2	2	3	1	12	1.17
score_score	1	2	3	5	5	3	16	1.6
preprocess_text	5	3	3	4	8	3	23	1.97
algorithm_document	7	5	8	5	4	1	29	2.45
classifi_perform	9	5	4	5	5	2	28	2.28
word_semant	9	7	5	4	1	1	26	3.21
analysi_document	6	3	7	7	2	1	25	2.66
us_term	7	9	6	5	6	1	33	2.66
combin_word	8	8	5	6	3	1	30	2.79
network_base	7	6	4	4	2	1	23	2.28
time_term	5	8	11	5	2	2	31	3.51
gener_topic	4	4	1	7	3	2	19	2.07
improv_effici	4	7	8	6	7	1	32	2.59
data_contain	3	10	4	7	8	1	32	3.39
free_text	3	5	3	6	2	2	19	1.64
linear_combin	1	5	2	4	3	1	15	1.63
system_extract	3	5	5	3	6	2	22	1.55
classifi_test	6	5	1	3	8	1	23	2.83
tech_niqu	5	4	1	7	4	2	21	2.14
us_train	10	4	4	7	9	2	34	3.16
word_common	9	5	5	9	8	1	36	3.13
count_number	6	9	6	3	7	2	31	2.59
evalu_model	3	3	1	4	4	2	15	1.17
experi_perform	4	4	6	3	7	2	24	1.86
classif_base	5	7	4	5	8	3	29	1.86
featur_train	5	5	6	4	5	2	25	1.38
mine_us	5	6	8	4	3	2	26	2.16

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
term_text	7	5	8	4	5	2	29	2.14
model_method	7	5	2	7	8	2	29	2.64
provid_inform	5	3	7	4	6	1	25	2.16
start_point	4	8	5	2	4	1	23	2.45
process_method	2	6	4	4	11	1	27	3.56
textual_document	4	5	4	4	1	2	18	1.51
applic_text	4	8	5	9	5	2	31	2.59
corpu_document	5	6	4	10	3	2	28	2.83
gener_model	5	5	1	9	3	2	23	2.86
group_similar	5	10	5	4	6	2	30	2.66
lexicon_base	2	3	3	2	6	1	16	1.72
valu_document	5	5	3	6	5	2	24	1.51
data_test	3	4	4	8	7	1	26	2.59
word_select	3	7	6	6	6	2	28	2
base_topic	1	3	3	7	4	2	18	2.07
human_factor	1	3	3	1	3	2	11	0.98
predefin_categori	8	5	1	2	4	1	20	2.74
classifi_categori	5	6	4	3	7	2	25	1.87
document_total	12	5	5	1	8	1	31	4.23
sentenc_length	3	6	3	3	6	1	21	1.97
word_approach	11	2	7	3	3	2	26	3.61
cluster_qualiti	5	3	5	2	3	1	18	1.6
collect_text	7	4	8	5	7	1	31	2.58
maximum_likelihood	7	4	3	6	3	2	23	1.94
measur_valu	5	4	1	6	5	1	21	2.16
us_support	6	9	3	3	8	3	29	2.73
word_includ	9	8	3	6	3	1	29	3.16
document_consid	8	9	8	4	2	2	31	3.21
empir_studi	7	5	4	6	6	1	28	2.14
system_test	5	7	2	7	4	1	25	2.5
comput_similar	5	5	6	2	1	2	19	2.07
corpu_text	5	4	3	5	7	1	24	2.04
morgan_kaufmann	6	9	6	8	5	1	34	2.79
stem_us	6	9	7	6	3	2	31	2.59
averag_number	3	5	1	5	4	1	18	1.83
frequenc_count	4	4	4	7	2	1	21	2.07
includ_text	4	8	6	6	7	1	31	2.5
techniqu_extract	2	5	6	7	3	1	23	2.37

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
develop_method	3	6	5	5	6	1	25	1.97
given_word	3	7	8	7	5	2	30	2.42
process_reduc	4	10	6	4	9	2	33	3.13
train_us	4	5	1	8	5	2	23	2.48
us_simpl	4	4	4	5	6	1	23	1.67
word_context	3	6	3	7	4	1	23	2.19
wordnet_lexic	2	6	4	6	3	1	21	2.07
emot_categor	1	1	2	1	4	2	9	1.17
represent_us	2	4	4	3	3	2	16	0.89
time_word	3	8	6	8	2	1	27	3.08
word_exampl	3	7	4	9	7	2	30	2.73
issu_issn	2	4	2	3	2	1	13	1.03
posit_fals	1	8	3	4	3	3	19	2.34
user_tweet	1	1	1	1	6	2	10	2
weight_approach	8	4	6	3	4	1	25	2.42
index_document	8	7	3	7	1	1	26	3.21
perform_classifi	8	7	2	5	5	1	27	2.73
address_problem	7	5	2	3	5	2	22	2
document_rank	7	4	2	6	1	1	20	2.59
pattern_analysi	6	4	6	3	7	1	26	2.26
us_vector	7	3	3	8	4	2	25	2.43
princip_compon	3	4	2	1	3	1	13	1.21
term_number	8	6	5	4	4	1	27	2.34
mine_task	7	7	7	4	4	1	29	2.45
perform_cluster	5	4	3	4	6	1	22	1.72
take_advantag	5	6	3	6	7	4	27	1.47
algorithm_stem	6	5	4	5	6	3	26	1.17
white_space	5	3	7	4	5	2	24	1.75
featur_us	4	2	5	5	5	3	21	1.26
graph_node	3	1	4	3	2	1	13	1.21
weight_calcul	4	4	1	5	2	1	16	1.72
spam_detect	1	2	1	2	1	1	7	0.52
store_databas	2	5	5	6	7	1	25	2.34
mixtur_model	3	4	2	2	1	1	12	1.17
method_evalu	8	2	3	7	3	2	23	2.64
inform_avail	8	6	5	4	1	1	24	2.79
precis_valu	4	2	1	5	2	1	14	1.64
suffix_strip	8	7	4	4	4	2	27	2.23

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
sourc_inform	4	7	2	6	5	2	24	2.07
featur_repres	8	5	2	4	6	4	25	2.04
classifi_featur	5	4	5	3	6	1	23	1.79
process_word	4	8	6	4	4	2	26	2.07
algorithm_develop	6	4	4	9	7	2	30	2.5
main_reason	5	2	4	6	5	1	22	1.94
base_stem	1	3	7	7	3	1	21	2.73
comput_approach	5	7	3	5	3	1	23	2.1
given_queri	5	5	2	4	2	1	18	1.72
perform_algorithm	2	5	4	7	3	1	21	2.16
stopword_remov	2	7	8	6	3	1	26	2.88
inform_word	4	4	5	7	2	2	22	1.9
model_word	3	6	3	6	1	2	19	2.07
optic_charact	2	1	1	2	3	2	9	0.75
scienc_applic	1	3	2	4	4	2	14	1.21
learn_object	2	1	2	2	3	1	10	0.75
automat_evalu	2	1	1	5	4	2	13	1.64
vector_featur	8	5	5	4	2	1	24	2.48
model_compar	6	2	1	5	6	3	20	2.14
term_select	5	2	3	5	6	1	21	1.97
us_gram	4	2	4	3	6	3	19	1.37
user_defin	6	3	7	5	3	2	24	1.97
base_user	6	8	4	6	4	1	28	2.4
index_process	3	2	2	4	1	1	12	1.17
similar_mean	5	2	5	10	4	1	26	3.15
gram_base	2	3	2	5	4	2	16	1.26
sourc_data	5	3	2	4	4	2	18	1.21
text_messag	3	4	2	3	2	2	14	0.82
technolog_volum	4	4	5	6	2	1	21	1.86
analysi_social	3	4	5	7	5	1	24	2.04
base_techniqu	3	9	5	4	7	1	28	2.86
dataset_train	4	4	2	7	7	3	24	2.07
select_algorithm	3	2	3	2	3	1	13	0.82
token_stop	2	7	4	8	5	4	26	2.19
us_wordnet	3	6	4	6	1	1	20	2.26
valu_pair	2	5	4	2	5	1	18	1.72
base_represent	2	6	6	2	5	1	21	2.25
facebook_twitter	1	5	3	5	3	1	17	1.79

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
us_wikipedia	2	5	3	5	2	1	17	1.67
class_number	1	4	4	7	6	1	22	2.48
dimension_featur	8	1	3	1	7	1	20	3.21
extract_techniqu	6	3	4	4	1	1	18	1.94
model_automat	10	2	4	4	5	4	25	2.71
european_languag	5	4	5	2	3	1	19	1.63
text_repres	7	9	2	4	4	1	26	3.02
comput_network	3	2	3	3	6	1	17	1.67
method_combin	4	6	3	5	9	1	27	2.73
word_match	6	7	2	5	1	2	21	2.48
algorithm_find	5	8	2	6	7	1	28	2.79
data_consist	6	7	3	7	6	1	29	2.45
featur_includ	4	5	3	7	4	3	23	1.51
form_stem	6	6	3	4	5	3	24	1.38
token_process	5	7	3	2	7	4	24	2.07
weight_vector	5	2	1	4	3	2	15	1.47
consist_document	4	5	1	6	5	1	21	2.16
sentenc_structur	4	5	4	2	6	2	21	1.6
system_consist	6	7	3	4	4	3	24	1.64
test_model	3	4	4	4	3	2	18	0.82
analysi_machin	5	2	6	5	10	2	28	2.97
frequenc_weight	4	4	8	1	7	1	24	2.93
measur_calcul	5	5	2	6	6	3	24	1.64
workshop_comput	5	8	2	6	5	1	26	2.59
text_dataset	3	2	2	4	5	1	16	1.47
us_equat	4	6	3	2	3	1	18	1.72
collect_corpu	2	9	1	4	6	5	22	2.88
lexic_featur	2	5	4	4	3	1	18	1.47
mean_valu	3	5	1	4	4	1	17	1.67
model_extract	3	6	2	5	4	1	20	1.87
perform_analysi	3	5	7	5	3	1	23	2.1
corpu_word	2	4	3	8	6	1	23	2.61
model_system	2	3	2	2	3	1	12	0.75
us_rule	1	6	3	3	2	2	15	1.72
concept_document	3	6	3	2	1	1	15	1.86
catégori_catégori	6	4	6	4	1	1	21	2.25
length_document	7	6	7	2	1	1	23	2.97
north_chapter	5	6	2	6	2	1	21	2.25

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
overal_perform	3	6	2	4	3	2	18	1.51
document_length	6	3	5	5	2	1	21	1.97
cluster_accuraci	4	3	2	3	3	1	15	1.03
good_perform	7	3	3	3	7	4	23	1.97
list_stop	7	3	5	3	5	1	23	2.1
index_html	4	3	3	6	5	2	21	1.47
algorithm_implement	5	7	4	7	6	1	29	2.28
convert_text	5	10	2	6	3	4	26	2.83
word_elimin	5	8	4	7	2	1	26	2.74
improv_text	3	7	5	6	5	1	26	2.17
collect_tweet	1	5	1	3	5	1	15	1.97
count_word	3	5	4	6	6	3	24	1.38
extract_knowledg	3	4	4	6	7	1	24	2.14
statist_signific	3	4	3	7	6	2	23	1.94
emot_text	1	1	3	2	3	1	10	0.98
knowledg_extract	2	5	3	9	8	1	27	3.27
term_queri	2	6	2	3	2	1	15	1.75
semant_evalu	1	4	4	2	5	1	16	1.72
method_extract	8	7	3	5	4	1	27	2.58
overal_accuraci	4	2	1	4	2	1	13	1.37
repres_term	8	5	5	2	1	2	21	2.64
approach_automat	7	9	7	2	4	1	29	3.16
automat_classifi	6	3	5	5	5	1	24	1.83
method_describ	7	4	2	7	4	1	24	2.48
languag_specif	5	5	4	3	4	1	21	1.51
node_repres	4	4	2	3	3	2	16	0.89
topic_text	4	2	5	3	2	1	16	1.47
difficult_task	4	4	3	7	4	1	22	1.94
access_inform	4	2	6	6	4	1	22	2.04
depart_inform	4	3	6	3	6	2	22	1.67
naiv_bayesian	2	4	3	3	4	1	16	1.17
queri_word	3	2	3	4	3	1	15	1.03
caus_effect	1	2	2	1	3	1	9	0.82
comput_base	4	2	6	4	7	3	23	1.86
fine_grain	4	5	6	1	5	1	21	2.16
measur_defin	3	4	7	7	4	1	25	2.34
text_written	4	6	4	4	6	1	24	1.83
distribut_document	3	5	4	4	5	1	21	1.51

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
lower_case	2	3	4	4	9	1	22	2.79
recognit_system	2	5	3	2	3	1	15	1.37
semi_automat	2	8	4	3	3	1	20	2.43
consist_word	2	7	3	5	3	1	20	2.17
context_base	2	6	3	4	4	1	19	1.75
dataset_us	2	3	5	7	6	2	23	2.14
process_phase	2	9	2	3	4	2	20	2.73
us_corpu	1	3	2	2	4	1	12	1.17
word_distribut	1	2	5	4	2	3	14	1.47
term_occurr	4	4	2	1	6	1	17	2
method_cluster	6	5	4	3	4	1	22	1.72
token_text	9	2	6	3	4	2	24	2.73
compon_analysi	4	5	2	1	4	1	16	1.72
gener_term	8	11	2	4	3	2	28	3.69
semant_structur	5	9	2	3	4	1	23	2.83
stem_reduc	10	8	2	6	5	1	31	3.44
term_accuraci	6	4	5	3	4	1	22	1.72
cluster_word	4	5	4	3	2	2	18	1.21
document_given	9	7	4	5	2	1	27	3.01
system_text	7	6	6	4	2	2	25	2.17
text_understand	3	3	2	5	2	1	15	1.37
us_mean	8	4	3	6	3	1	24	2.48
document_extract	6	4	4	4	4	1	22	1.6
frequenc_calcul	4	8	4	3	4	1	23	2.28
document_group	5	4	4	5	3	2	21	1.17
domain_knowledg	4	4	7	4	2	1	21	2.07
gener_content	2	4	2	3	4	1	15	1.21
learn_data	4	6	5	2	6	3	23	1.63
retriev_base	3	3	3	5	4	1	18	1.33
algorithm_mean	3	3	2	5	5	1	18	1.6
approach_perform	5	5	5	5	3	2	23	1.33
model_approach	4	2	3	5	7	2	21	1.94
network_us	3	2	2	4	6	1	17	1.79
gram_word	3	1	3	1	3	1	11	1.1
model_combin	4	5	2	5	6	4	22	1.37
stemmer_algorithm	4	3	7	3	4	3	21	1.55
valu_paramet	4	4	3	3	5	1	19	1.37
valu_word	4	5	7	2	10	1	28	3.31

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
accuraci_tabl	2	4	2	5	6	1	19	1.97
assign_word	3	5	2	5	4	2	19	1.38
base_measur	3	3	6	6	2	2	20	1.86
process_approach	3	3	3	3	4	1	16	0.98
us_latent	3	5	1	4	2	2	15	1.47
gener_algorithm	2	3	2	1	2	1	10	0.75
preprocess_techniqu	2	5	3	2	7	3	19	1.97
rule_rule	1	2	4	4	4	1	15	1.51
level_text	1	3	5	3	2	1	14	1.52
process_base	1	6	3	5	5	2	20	1.97
relev_queri	7	3	1	5	2	1	18	2.4
document_test	8	4	2	4	5	2	23	2.23
document_accord	8	8	3	3	4	1	26	2.88
order_evalu	9	4	3	2	4	2	22	2.61
base_learn	9	4	1	3	5	3	22	2.71
algorithm_suffix	5	6	5	5	3	1	24	1.83
approach_featur	5	1	2	2	3	1	13	1.51
time_process	6	3	2	4	5	1	20	1.87
equal_number	7	4	7	5	3	1	26	2.35
improv_cluster	6	4	4	2	3	1	19	1.75
classif_document	6	5	4	5	4	1	24	1.72
gener_process	3	2	3	5	5	1	18	1.6
jordan_latent	6	6	4	9	4	1	29	2.68
label_train	6	4	2	4	2	2	18	1.63
model_describ	6	5	3	4	4	3	22	1.17
us_topic	4	2	1	7	2	3	16	2.14
base_machin	5	1	4	4	11	2	25	3.51
frequenc_number	4	5	5	7	5	2	26	1.63
process_includ	4	6	4	4	5	1	23	1.67
word_assign	4	4	6	6	2	3	22	1.6
automat_classif	4	5	1	3	10	1	23	3.35
calcul_term	3	5	2	7	7	4	24	2.07
signific_improv	4	6	3	2	5	3	20	1.47
stage_process	4	3	4	3	4	1	18	1.17
valu_indic	4	3	5	5	3	1	20	1.52
analysi_tool	3	4	4	8	4	3	23	1.86
gener_method	3	4	2	1	3	3	13	1.03
vector_us	3	6	1	3	3	2	16	1.67

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
origin_data	2	4	4	3	4	2	17	0.98
comput_secur	1	1	2	3	3	1	10	0.98
engin_depart	1	4	4	3	5	1	17	1.67
frequent_item	1	2	4	1	1	1	9	1.21
http_github	1	3	1	7	7	2	19	2.81
increas_perform	1	3	3	5	6	2	18	1.86
occurr_document	6	6	5	2	4	1	23	2.1
similar_cluster	5	2	3	4	4	1	18	1.47
studi_featur	7	5	2	4	6	1	24	2.32
token_stem	5	5	1	8	1	1	20	2.95
us_weight	5	1	4	5	7	2	22	2.19
word_reduc	8	6	3	7	4	2	28	2.37
base_number	6	3	4	4	6	1	23	1.9
data_includ	3	5	4	3	5	2	20	1.21
dataset_collect	4	3	3	7	2	1	19	2.07
find_word	5	8	4	6	4	1	27	2.34
learn_train	2	7	6	4	1	3	20	2.32
reduc_time	6	4	3	3	6	1	22	1.94
weight_document	5	5	5	5	2	1	22	1.83
word_collect	6	4	6	4	5	2	25	1.52
corpu_train	4	1	2	6	4	1	17	2
learn_system	5	3	2	3	6	1	19	1.86
accuraci_classif	4	7	4	2	4	1	21	2.07
algorithm_compar	4	4	5	7	2	1	22	2.14
base_form	5	6	4	7	2	2	24	2.07
contain_text	5	6	5	6	4	1	26	1.87
dataset_experi	3	7	4	3	7	2	24	2.16
pair_word	5	5	1	7	1	2	19	2.51
approach_combin	3	3	1	5	2	2	14	1.37
includ_word	4	6	3	5	5	1	23	1.79
problem_text	4	4	11	7	3	1	29	3.52
reduct_techniqu	2	5	9	2	4	1	22	2.93
remov_punctuat	4	2	7	3	6	1	22	2.32
score_system	2	2	2	4	2	2	12	0.82
select_document	4	7	3	5	2	1	21	2.16
type_featur	3	7	2	3	3	1	18	2.04
us_model	4	2	2	4	6	2	18	1.63
mobil_phone	3	1	1	5	4	3	14	1.6

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
select_relev	3	4	4	2	2	2	15	0.98
system_data	3	8	1	4	5	1	21	2.66
gener_us	1	4	8	4	6	1	23	2.76
order_extract	2	8	3	5	5	1	23	2.53
perfor_manc	2	3	4	4	4	2	17	0.98
recal_recal	2	5	4	1	1	1	13	1.75
rule_extract	2	1	9	2	1	1	15	3.14
structur_text	2	4	4	5	6	3	21	1.41
word_train	1	2	6	4	5	2	18	1.97
combin_model	1	4	1	2	3	2	11	1.17
data_classif	1	3	3	6	7	1	20	2.51
time_featur	6	3	1	2	4	1	16	1.94
gener_categori	3	2	1	2	2	1	10	0.75
model_term	6	6	3	2	3	1	20	2.07
probabilist_latent	5	1	2	1	2	2	11	1.47
search_word	5	1	4	5	4	1	19	1.86
order_word	7	3	3	6	4	1	23	2.19
predict_class	5	4	3	2	6	2	20	1.63
base_applic	5	5	1	1	4	1	16	2.04
bay_classif	5	1	2	3	4	2	15	1.47
binari_classif	4	3	1	5	2	1	15	1.63
learn_inform	6	5	2	3	3	1	19	1.86
note_comput	6	3	3	3	5	1	20	1.76
number_class	6	4	4	3	3	2	20	1.37
perform_inform	6	2	5	6	3	2	22	1.9
techniqu_find	7	8	5	3	2	1	25	2.8
main_step	4	7	4	1	2	1	18	2.32
make_difficult	6	5	4	9	4	1	28	2.64
servic_servic	3	1	2	1	4	1	11	1.26
method_classif	4	3	2	4	5	3	18	1.05
model_latent	4	5	1	7	2	3	19	2.16
model_process	5	6	2	3	5	1	21	1.97
statist_measur	4	3	2	4	2	1	15	1.21
stem_method	3	5	4	3	3	1	18	1.33
topic_gener	3	3	2	5	2	1	15	1.37
tradit_approach	4	3	2	3	5	1	17	1.41
data_format	3	6	4	3	4	1	20	1.64
featur_term	4	3	5	5	3	2	20	1.21

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
posit_class	2	3	1	4	2	1	12	1.17
score_function	4	2	1	6	2	4	15	1.83
term_precis	4	4	2	5	3	2	18	1.21
total_word	3	3	4	1	4	1	15	1.37
divid_number	3	1	3	6	5	2	18	1.86
present_model	3	1	2	1	5	2	12	1.51
word_group	3	2	7	5	1	1	18	2.4
approach_develop	1	3	6	5	4	1	19	2.07
compar_word	2	7	3	2	2	3	16	1.94
find_optim	2	4	1	7	4	1	18	2.32
further_improv	2	4	4	8	1	2	19	2.51
probabl_word	2	3	5	6	2	1	18	1.94
proce_ing	2	2	3	6	3	1	16	1.72
data_form	1	4	3	3	5	1	16	1.6
neg_sentiment	1	2	2	3	6	2	14	1.75
servic_orient	1	1	1	1	4	1	8	1.22
cluster_gener	9	5	5	4	1	1	24	2.99
train_phase	8	2	1	6	6	3	23	2.73
cluster_mean	5	4	4	5	2	1	20	1.64
document_set	4	1	2	3	2	3	12	1.05
file_file	4	3	1	5	5	2	18	1.63
inform_sourc	3	4	3	4	2	1	16	1.17
neighbor_algorithm	5	3	2	5	4	1	19	1.63
preprocess_document	6	6	3	5	3	3	23	1.51
structur_inform	6	5	3	3	3	2	20	1.51
us_approach	4	4	4	5	5	1	22	1.47
dataset_evalu	4	5	1	3	4	1	17	1.67
mine_pattern	3	3	5	2	3	1	16	1.33
model_user	4	1	4	1	5	4	15	1.72
model_vector	4	3	3	2	3	3	15	0.63
size_data	3	4	2	2	7	2	18	1.97
struc_ture	4	4	2	3	1	2	14	1.21
calcul_number	3	8	3	3	4	1	21	2.34
number_charact	3	6	1	5	4	1	19	2.07
system_support	4	7	3	1	4	1	19	2.25
us_combin	3	5	3	4	7	1	22	2.04
user_interact	3	3	4	1	5	1	16	1.6
dataRepresent	2	5	5	2	4	1	18	1.72

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
experi_evalu	2	2	2	5	7	5	18	2.14
gener_purpos	3	2	2	7	3	1	17	2.1
linguist_human	3	4	3	5	3	1	18	1.33
tech_nologi	2	2	3	3	3	1	13	0.82
word_frequent	3	5	3	7	4	2	22	1.79
automat_process	2	8	4	2	3	2	19	2.35
remov_prefix	1	3	4	6	4	1	18	1.94
select_word	2	6	3	5	6	1	22	2.14
us_naïv	2	1	2	1	3	1	9	0.82
correct_word	1	1	1	4	2	1	9	1.21
perform_poorli	1	1	2	5	3	3	12	1.52
type_type	1	3	2	3	2	1	11	0.89
retriev_perform	6	2	1	1	2	2	12	1.86
effect_featur	7	5	2	2	2	1	18	2.32
data_gather	3	3	3	1	3	1	13	1.03
inform_filter	8	5	2	4	2	1	21	2.58
overcom_problem	6	3	3	2	8	1	22	2.64
method_arab	5	1	5	4	3	1	18	1.83
reduc_size	7	3	3	4	6	2	23	1.94
stem_techniqu	5	4	4	3	3	1	19	1.37
us_document	8	5	2	2	5	3	22	2.32
import_word	5	3	1	6	3	5	18	1.83
perform_featur	6	3	5	3	5	1	22	1.83
approach_classifi	4	5	2	4	3	1	18	1.47
perform_document	4	1	3	9	3	1	20	2.95
algorithm_data	3	3	5	4	7	1	22	2.04
cluster_group	5	2	4	4	7	1	22	2.14
estim_probabl	3	2	3	4	4	1	16	1.17
given_topic	3	3	2	4	2	1	14	1.05
model_implement	4	3	1	5	5	1	18	1.83
order_achiev	4	4	3	5	5	1	21	1.51
vector_model	5	3	5	1	3	2	17	1.6
inform_data	4	4	5	7	4	1	24	1.94
total_document	4	4	3	3	4	1	18	1.17
document_comput	3	9	4	3	2	2	21	2.64
algorithm_test	2	5	2	5	4	1	18	1.72
fuzzi_set	1	2	1	1	1	2	6	0.52
system_process	2	8	4	3	4	1	21	2.42

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
term_semant	2	6	4	1	4	2	17	1.83
token_part	2	3	3	3	4	1	15	1.03
train_train	2	3	3	5	5	1	18	1.6
tree_algorithm	2	4	6	3	3	1	18	1.72
detect_us	1	5	2	3	7	3	18	2.17
help_identifi	1	5	2	4	8	1	20	2.74
input_word	1	5	3	6	2	2	17	1.94
contain_number	9	3	2	5	1	1	20	3.08
group_document	3	2	6	2	2	1	15	1.75
approach_analyz	8	4	5	7	1	1	25	2.94
method_consid	7	1	4	2	7	1	21	2.8
document_user	4	5	2	7	1	3	19	2.16
languag_base	5	5	3	6	3	1	22	1.83
commun_engin	2	3	3	4	6	1	18	1.72
corpu_number	5	7	4	3	3	3	22	1.6
perform_term	5	7	5	3	1	2	21	2.23
collect_word	4	7	4	3	4	2	22	1.67
detail_descript	4	5	2	5	3	1	19	1.63
inform_us	3	8	1	5	6	1	23	2.83
tree_classifi	3	3	3	3	3	1	15	0.82
word_exist	4	2	6	5	4	2	21	1.6
analysi_opinion	3	4	3	1	3	2	14	1.03
effect_us	3	3	6	3	5	1	20	1.76
method_measur	4	2	3	7	1	1	17	2.28
paramet_valu	3	4	1	4	4	2	16	1.26
supervis_unsupervis	3	5	1	6	7	1	22	2.56
text_consid	3	7	2	2	4	1	18	2.14
averag_valu	3	2	4	3	2	1	14	1.05
bay_theorem	3	2	2	5	8	2	20	2.42
evalu_classifi	3	2	2	4	3	1	14	1.05
pattern_gener	1	9	2	2	3	1	17	3.03
perform_improv	3	5	1	5	4	1	18	1.83
preprocess_data	3	2	3	5	3	2	16	1.1
test_system	2	1	3	2	5	1	13	1.51
word_search	3	6	2	5	2	2	18	1.75
faculti_scienc	2	3	4	1	2	2	12	1.03
form_us	2	3	7	5	3	1	20	2.17
linguist_resourc	2	3	4	3	1	1	13	1.21

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
semant_network	2	3	4	3	2	2	14	0.82
variou_featur	2	4	4	3	5	1	18	1.47
written_text	2	2	4	5	4	1	17	1.55
categori_word	1	8	6	1	3	1	19	3.01
context_awar	1	4	1	4	4	1	14	1.64
extract_tweet	1	2	3	4	3	1	13	1.21
order_logic	1	1	2	2	2	1	8	0.55
select_term	1	8	4	2	3	1	18	2.64
simpl_word	1	4	1	4	1	2	11	1.47
appear_frequent	6	2	3	4	4	1	19	1.75
method_select	6	2	3	4	6	1	21	2.07
modern_inform	7	6	1	4	2	1	20	2.59
term_gener	5	2	4	4	1	2	16	1.55
evalu_evalu	5	2	3	4	4	1	18	1.47
method_improv	6	4	1	4	7	1	22	2.48
model_defin	4	1	1	3	3	1	12	1.33
multinomi_distribut	4	3	3	1	1	3	12	1.22
size_train	3	4	1	2	5	1	15	1.63
specif_topic	7	3	3	3	2	3	18	1.76
approach_cluster	6	3	4	1	3	1	17	1.9
describ_detail	3	3	5	5	2	1	18	1.6
document_thu	5	7	2	5	3	1	22	2.23
gram_model	3	2	5	1	2	1	13	1.51
train_time	2	1	2	5	4	1	14	1.64
convert_word	5	4	1	6	1	2	17	2.14
divid_total	4	2	6	4	3	3	19	1.37
improv_precis	5	2	2	4	3	1	16	1.47
document_order	4	3	6	5	2	1	20	1.87
gram_featur	1	6	4	2	1	2	14	1.97
main_featur	2	1	4	3	2	1	12	1.17
mine_machin	3	6	2	4	4	1	19	1.75
repr_sent	3	2	3	3	1	1	12	0.98
test_evalu	1	3	2	3	4	3	13	1.03
websit_http	4	2	1	5	4	1	16	1.72
calcul_frequenc	2	4	3	3	7	1	19	2.07
comput_semant	2	5	3	2	2	3	14	1.17
subset_featur	3	2	4	2	3	1	14	1.05
system_arab	2	3	3	2	4	1	14	1.05

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
algorithm_predict	1	2	2	5	6	2	16	2
gener_data	2	4	5	4	3	1	18	1.47
mine_natur	2	3	5	3	8	2	21	2.32
multi_label	2	6	3	3	5	2	19	1.64
node_graph	2	3	5	1	2	1	13	1.51
word_test	2	3	1	4	2	2	12	1.03
design_model	1	2	1	1	6	1	11	2
further_develop	1	4	3	2	1	1	11	1.26
model_construct	1	4	3	2	5	2	15	1.47
sampl_data	1	2	2	1	7	3	13	2.25
salton_bucklei	8	3	4	2	2	1	19	2.5
applic_develop	1	1	3	1	4	1	10	1.33
automat_document	6	3	4	3	1	1	17	1.9
document_avail	6	2	7	6	1	1	22	2.79
model_consid	6	3	3	3	3	2	18	1.37
stem_step	3	4	2	1	4	4	14	1.26
arxiv_preprint	1	2	2	1	3	2	9	0.75
classifi_classif	6	5	3	1	6	1	21	2.34
classifi_support	3	2	2	3	5	1	15	1.37
mean_document	5	4	3	4	4	1	20	1.38
method_comput	5	2	1	4	1	3	13	1.63
technolog_issn	2	2	2	4	4	1	14	1.22
appear_time	3	2	5	7	1	1	18	2.4
auto_matic	4	4	3	3	4	1	18	1.17
captur_semant	4	4	1	4	1	1	14	1.64
linguist_structur	3	3	2	2	2	1	12	0.75
perform_base	3	5	1	2	5	3	16	1.6
word_refer	4	3	3	8	3	1	21	2.34
data_obtain	2	5	3	1	6	1	17	2.1
describ_system	3	3	4	5	2	2	17	1.17
direct_graph	3	1	5	4	3	2	16	1.41
help_improv	2	3	3	7	5	1	20	2.17
linear_model	2	2	3	6	2	1	15	1.75
model_provid	3	6	2	4	4	2	19	1.52
multipl_word	3	4	4	4	1	1	16	1.47
probabl_document	2	1	5	2	2	2	12	1.37
topic_interest	3	1	2	3	1	2	10	0.89
word_total	2	4	4	4	4	1	18	1.33

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
accuraci_obtain	1	5	2	2	2	1	12	1.47
class_classifi	2	1	1	3	6	1	13	1.97
current_state	2	3	1	4	4	1	14	1.38
experi_experi	2	1	2	4	6	1	15	1.97
mathemat_comput	2	3	5	2	4	1	16	1.47
measur_cosin	2	8	4	2	3	2	19	2.35
messag_servic	1	2	1	2	3	1	9	0.82
similar_text	1	4	2	5	3	1	15	1.63
achiev_good	1	5	5	4	5	1	20	1.97
algorithm_term	1	4	5	4	5	1	19	1.86
method_model	1	1	3	6	5	2	16	2.1
metric_evalu	1	4	1	1	6	1	13	2.16
stemmer_arab	1	4	2	4	1	1	12	1.47
system_consid	1	5	3	2	5	2	16	1.67
system_requir	1	3	3	4	4	1	15	1.37
tweet_collect	1	5	1	1	1	1	9	1.63
word_user	1	3	5	3	2	2	14	1.37
appli_cluster	9	2	1	2	4	1	18	3.06
learn_task	6	3	2	2	3	1	16	1.72
document_organ	9	1	3	3	3	1	19	2.94
measur_comput	3	3	3	2	3	2	14	0.52
term_given	7	2	6	4	1	1	20	2.59
user_find	5	3	3	4	2	1	17	1.41
bay_model	2	5	1	4	1	1	13	1.75
consid_term	7	5	5	2	2	1	21	2.34
mcgraw_hill	6	5	1	2	4	2	18	1.97
method_document	6	5	2	5	1	2	19	2.07
model_cluster	3	2	3	2	2	1	12	0.75
retriev_data	6	4	4	2	4	1	20	1.76
search_inform	7	4	3	1	1	2	16	2.28
basic_idea	6	2	4	4	4	2	20	1.51
blog_post	3	3	5	3	1	1	15	1.51
comput_survei	6	6	3	2	4	1	21	2.07
deriv_word	5	3	3	4	2	2	17	1.17
main_contribut	3	4	4	2	4	1	17	1.26
estim_paramet	3	2	1	3	3	1	12	0.98
form_cluster	2	4	3	4	4	1	17	1.26
method_name	3	1	1	5	3	3	13	1.51

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
model_techniqu	5	2	3	3	5	2	18	1.37
neural_inform	2	3	3	3	5	1	16	1.33
binari_classifi	3	2	1	3	3	2	12	0.82
charact_token	4	2	3	3	2	1	14	1.05
latent_variabl	3	1	1	1	1	1	7	0.82
system_comput	4	3	2	3	3	1	15	1.03
task_automat	4	6	4	3	2	2	19	1.52
text_includ	4	8	2	3	4	1	21	2.42
us_neural	2	1	2	4	5	3	14	1.47
algorithm_describ	3	6	2	4	2	1	17	1.79
algorithm_method	3	8	1	5	4	1	21	2.66
algorithm_requir	2	2	4	4	6	2	18	1.63
applic_us	3	1	1	2	5	3	12	1.52
calcul_score	2	2	4	7	2	2	17	2.04
featur_number	1	4	2	3	4	1	14	1.38
inform_base	2	3	4	3	4	1	16	1.17
method_achiev	3	3	1	2	6	1	15	1.86
studi_focus	2	3	2	2	4	1	13	1.03
comput_program	2	5	1	3	4	2	15	1.47
dataset_test	2	4	4	3	5	1	18	1.47
identifi_emot	1	1	2	3	3	1	10	0.98
replac_word	2	2	4	7	1	1	16	2.32
statist_data	2	1	2	2	5	1	12	1.47
automat_detect	1	5	2	2	5	1	15	1.86
calcul_word	1	5	2	6	4	2	18	1.97
commun_system	1	1	1	4	4	2	11	1.47
develop_tool	1	1	3	5	6	1	16	2.23
featur_classif	1	4	2	4	4	2	15	1.33
graphic_model	1	3	2	4	1	3	11	1.21
process_term	1	6	1	6	3	1	17	2.45
semant_resourc	1	2	3	3	2	1	11	0.89
text_analyt	1	5	3	1	4	1	14	1.76
word_weight	1	3	7	4	4	1	19	2.25
match_match	4	1	1	1	2	1	9	1.21
valu_obtain	4	2	1	2	4	1	13	1.37
defin_term	8	2	2	5	1	1	18	2.79
us_maximum	6	4	2	3	2	1	17	1.79
cluster_comput	6	2	4	1	4	1	17	2

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
space_word	6	1	2	3	4	1	16	1.94
token_document	3	4	3	1	2	1	13	1.21
model_dataset	4	3	2	3	3	3	15	0.63
novel_approach	4	3	4	5	1	1	17	1.67
vocabulari_word	4	3	1	4	2	2	14	1.21
frequenc_measur	5	2	5	4	3	2	19	1.38
ground_truth	3	2	3	2	1	3	11	0.82
levelRepresent	2	2	1	1	1	1	7	0.52
process_select	4	4	3	4	5	1	20	1.38
algorithm_automat	3	2	3	1	4	1	13	1.21
index_word	2	1	2	5	1	1	11	1.55
proc_sigir	3	5	2	2	1	1	13	1.51
algorithm_achiev	3	1	2	6	3	1	15	1.86
appli_algorithm	3	5	1	4	5	1	18	1.83
averag_length	3	4	3	4	2	1	16	1.17
evalu_base	4	2	1	5	4	2	16	1.55
form_term	4	4	4	2	3	1	17	1.26
machin_intellig	4	2	4	4	7	1	21	2.07
mine_base	4	3	6	3	3	1	19	1.63
professor_comput	4	6	4	1	1	1	16	2.14
techniqu_reduc	4	4	2	2	8	2	20	2.34
us_tool	4	4	2	3	4	2	17	0.98
vector_term	4	2	3	2	4	1	15	1.21
evalu_dataset	3	4	1	4	4	2	16	1.26
extract_semant	3	6	1	4	2	3	16	1.72
process_machin	3	4	2	3	5	1	17	1.41
adject_noun	2	1	5	5	4	1	17	1.9
collect_process	1	5	3	2	4	1	15	1.63
gradient_descent	2	4	1	3	2	1	12	1.17
inform_structur	2	5	6	2	3	1	18	1.94
languag_world	2	3	4	3	4	2	16	0.89
learn_us	2	2	2	5	4	1	15	1.51
model_make	2	2	2	6	4	1	16	1.83
text_form	2	1	5	6	5	1	19	2.25
analysi_natur	1	3	5	3	3	2	15	1.33
complex_system	1	2	3	2	5	1	13	1.51
levenshtein_distanc	1	2	2	3	3	2	11	0.75
million_peopl	1	2	5	3	4	2	15	1.47

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
model_structur	1	2	2	3	3	2	11	0.75
remain_word	1	4	4	7	1	1	17	2.45
search_data	4	3	2	3	2	1	14	1.05
approach_solv	2	3	2	5	1	1	13	1.51
document_convert	6	4	1	3	3	2	17	1.72
extern_knowledg	5	2	3	2	1	3	13	1.37
appli_document	5	2	3	3	3	1	16	1.33
assign_categor	6	2	5	4	3	1	20	1.87
distribut_data	3	3	6	1	3	1	16	1.83
network_commun	2	2	1	2	3	1	10	0.75
tree_base	3	2	1	2	5	1	13	1.51
larger_number	5	2	2	3	3	1	15	1.37
novel_method	5	4	3	3	1	2	16	1.41
preprint_arxiv	1	2	2	1	2	2	8	0.52
represent_vector	6	3	1	3	2	1	15	1.86
us_keyword	6	5	3	4	1	1	19	2.07
data_classifi	4	5	3	1	3	2	16	1.41
distribut_term	4	4	4	2	3	1	17	1.26
group_base	4	3	3	2	3	2	15	0.75
relev_user	2	2	3	4	1	1	12	1.17
summar_task	2	3	2	3	1	1	11	0.89
type_word	3	1	1	6	6	1	17	2.45
vector_weight	5	6	1	4	3	1	19	2.07
weight_weight	4	5	4	2	3	1	18	1.47
approach_method	2	2	2	1	3	2	10	0.63
column_repres	2	3	1	5	4	1	15	1.63
dept_comput	4	4	4	2	1	2	15	1.33
keyword_search	4	4	3	2	1	1	14	1.38
measur_word	4	5	1	3	4	2	17	1.47
model_analysi	2	1	2	2	3	1	10	0.75
perform_comparison	4	5	1	5	3	2	18	1.63
user_input	3	2	3	3	4	1	15	1.03
approach_gener	3	1	4	4	5	2	17	1.47
base_keyword	3	1	5	3	1	1	13	1.63
base_multi	3	2	2	3	3	1	13	0.82
base_score	2	3	2	5	2	2	14	1.21
base_valu	2	5	2	1	6	1	16	2.14
data_size	2	2	4	5	3	1	16	1.47

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
data_social	2	3	2	3	4	1	14	1.05
perform_variou	3	3	2	2	5	1	15	1.37
reduc_comput	3	1	3	3	4	2	14	1.03
studi_us	3	3	3	2	5	3	16	0.98
us_measur	2	6	5	2	2	1	17	2
word_input	3	4	5	3	5	1	20	1.52
workshop_text	2	4	7	1	2	1	16	2.32
accuraci_score	2	2	3	2	2	2	11	0.41
approach_identifi	2	3	3	2	4	1	14	1.05
base_queri	2	4	1	5	2	1	14	1.64
determin_word	2	4	1	6	3	1	16	1.94
maximum_valu	2	5	4	1	3	1	15	1.63
model_creat	2	1	1	2	5	4	11	1.64
take_time	2	5	3	4	3	1	17	1.41
us_number	2	3	3	2	5	3	15	1.1
user_us	2	1	3	4	5	1	15	1.63
averag_time	1	2	1	4	3	1	11	1.26
classifi_predict	1	2	3	2	6	1	14	1.87
knowledg_inform	1	5	7	1	2	2	16	2.45
perform_stem	1	3	8	4	2	1	18	2.64
valu_given	1	4	3	2	5	1	15	1.63
word_replac	1	1	1	4	4	1	11	1.55
document_appear	5	1	1	5	1	2	13	1.97
kullback_leibler	4	1	3	1	1	1	10	1.33
number_distinct	6	5	3	2	1	1	17	2.1
learn_autom	7	6	5	1	1	1	20	2.81
requir_number	4	5	2	1	4	1	16	1.72
becom_popular	6	2	4	4	2	1	18	1.83
process_call	5	4	4	1	3	1	17	1.67
similar_featur	4	3	2	2	2	2	13	0.84
singl_term	6	2	2	3	4	1	17	1.79
term_calcul	6	3	4	3	2	2	18	1.51
term_topic	3	5	1	5	1	1	15	1.97
type_document	5	3	6	1	1	1	16	2.23
appli_mathemat	4	3	2	2	2	1	13	1.03
creat_word	5	7	1	3	2	1	18	2.4
decreas_number	4	3	3	4	2	1	16	1.17
master_degre	5	2	3	3	5	1	18	1.6

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
test_train	5	3	1	4	2	2	15	1.47
text_evalu	5	4	1	3	2	2	15	1.47
cosin_angl	4	7	4	3	2	1	20	2.07
evalu_cluster	2	1	2	3	3	2	11	0.75
evalu_lrec	4	5	1	1	3	1	14	1.76
given_user	2	1	3	3	3	2	12	0.82
includ_step	4	6	2	3	3	2	18	1.51
likelihood_estim	3	4	1	5	2	1	15	1.63
mine_icdm	2	3	3	5	1	2	14	1.37
model_experi	2	1	1	3	4	1	11	1.26
optim_number	3	1	1	4	2	2	11	1.17
process_order	4	1	2	3	4	1	14	1.38
queri_queri	3	1	1	8	1	2	14	2.73
recent_studi	4	4	4	1	3	1	16	1.47
similar_concept	3	4	2	2	3	1	14	1.05
strip_program	4	5	5	2	3	1	19	1.63
classifi_emot	1	1	1	1	3	1	7	0.82
consid_word	3	4	2	4	4	1	17	1.26
inform_featur	3	2	1	2	3	1	11	0.89
measur_combin	2	3	4	3	1	1	13	1.21
model_number	1	4	2	4	5	1	16	1.72
refer_word	3	5	3	2	3	2	16	1.1
techniqu_stem	2	2	3	2	4	1	13	1.03
word_letter	1	5	2	1	3	1	12	1.6
approach_present	2	3	1	3	2	2	11	0.75
integr_data	2	1	6	1	5	1	15	2.25
method_data	2	2	3	5	4	1	16	1.47
model_present	2	3	3	2	5	3	15	1.1
multi_dimension	1	4	5	1	1	1	12	1.83
select_select	2	3	4	2	1	1	12	1.17
system_abl	1	2	1	1	4	3	9	1.26
text_exampl	2	5	3	3	5	3	18	1.22
base_function	1	3	2	2	2	1	10	0.75
develop_base	1	3	4	2	5	2	15	1.47
emot_analysi	1	1	1	2	4	3	9	1.26
mine_introduct	1	2	8	4	5	1	20	2.74
morpholog_syntact	1	4	3	2	2	1	12	1.17
score_evalu	1	1	2	4	1	3	9	1.26

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
servic_name	1	1	1	1	1	1	5	0
precis_rate	5	2	1	1	1	1	10	1.6
order_compar	6	1	3	2	4	1	16	1.94
similar_function	7	4	2	1	1	1	15	2.42
step_algorithm	4	1	2	4	5	1	16	1.72
neg_emot	3	2	1	3	1	1	10	0.98
particular_categori	5	1	3	2	1	1	12	1.6
advanc_neural	2	3	2	2	5	1	14	1.38
cluster_form	4	6	2	1	1	1	14	2.07
html_http	2	3	1	2	3	1	11	0.89
particular_document	5	5	2	2	2	1	16	1.72
reduc_dimens	4	5	2	2	2	1	15	1.51
stem_approach	2	4	2	3	1	1	12	1.17
twitter_social	2	1	1	4	2	1	10	1.17
accuraci_text	4	2	5	4	3	1	18	1.47
learn_theori	2	2	1	3	5	1	13	1.51
select_appropri	4	4	2	2	3	1	15	1.21
task_document	3	3	4	4	3	1	17	1.1
term_index	3	4	3	5	1	1	16	1.6
text_model	3	1	2	5	1	1	12	1.6
time_frame	3	5	3	2	3	1	16	1.33
analysi_determin	3	4	2	3	5	1	17	1.41
classifi_class	3	2	2	3	3	2	13	0.55
creativ_common	2	1	2	4	3	1	12	1.17
lower_valu	3	2	1	5	2	1	13	1.51
match_algorithm	3	3	2	3	2	1	13	0.82
problem_data	1	1	3	4	3	1	12	1.33
techniqu_term	3	4	2	5	3	1	17	1.41
word_algorithm	2	5	1	2	6	1	16	2.14
class_cluster	2	2	2	1	3	1	10	0.75
evalu_topic	2	1	2	3	1	1	9	0.82
process_describ	2	6	2	2	3	2	15	1.6
system_inform	2	4	2	4	2	1	14	1.22
tion_retriev	2	2	1	4	1	1	10	1.17
total_score	1	1	1	4	2	1	9	1.21
user_select	1	2	4	1	5	1	13	1.75
word_defin	2	6	2	4	2	1	16	1.83
word_find	2	8	2	5	1	1	18	2.79

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
collect_us	1	2	4	5	3	2	15	1.47
data_perform	1	2	1	7	5	2	16	2.45
dice_similar	1	2	1	2	2	1	8	0.55
formal_defin	1	4	2	3	2	1	12	1.17
respons_time	1	3	1	1	4	1	10	1.33
techniqu_order	1	2	4	6	4	1	17	2
distribut_similar	1	2	2	1	2	1	8	0.55
probabl_term	6	1	3	3	1	1	14	1.97
document_assign	7	4	2	3	1	1	17	2.28
leibler_diverg	4	1	3	1	1	1	10	1.33
bucklei_term	6	4	4	2	2	1	18	1.83
categor_comput	5	7	3	1	1	1	17	2.53
collect_dataset	5	3	1	2	3	2	14	1.37
introduct_modern	5	4	2	5	1	1	17	1.9
keyword_arab	4	4	2	4	3	1	17	1.26
search_us	4	2	3	2	3	1	14	1.05
size_document	4	3	5	1	3	1	16	1.6
system_page	2	1	2	5	2	2	12	1.37
time_document	5	2	6	3	1	1	17	2.1
charact_number	4	3	1	4	6	1	18	1.94
document_select	4	3	4	3	1	1	15	1.37
effect_method	4	4	1	2	5	1	16	1.72
languag_complex	4	1	4	7	2	1	18	2.32
method_take	4	3	3	1	6	2	17	1.72
signific_amount	3	2	1	2	5	2	13	1.38
analysi_classif	3	2	2	4	4	1	15	1.21
appli_comput	3	6	4	1	3	1	17	1.9
document_obtain	2	4	3	3	1	3	13	1.03
main_focu	3	6	1	5	3	1	18	2.04
model_outperform	3	1	1	4	5	2	14	1.63
probabl_class	2	5	3	1	1	1	12	1.6
represent_method	2	3	4	1	1	1	11	1.26
term_mean	2	4	3	5	1	1	15	1.63
word_singl	3	2	7	4	1	1	17	2.28
algorithm_present	2	5	1	4	3	2	15	1.47
approach_comput	2	3	2	2	5	3	14	1.17
corpu_includ	2	6	2	1	2	2	13	1.76
data_analyz	2	4	4	1	3	1	14	1.38

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
data_experi	2	6	3	2	4	1	17	1.79
depend_word	1	4	2	3	3	1	13	1.21
describ_method	2	6	5	2	1	1	16	2.14
distribu_tion	2	3	1	4	2	1	12	1.17
frequenc_featur	2	4	2	4	3	1	15	1.21
good_accuraci	2	2	1	2	4	1	11	1.1
human_behavior	2	2	3	1	2	1	10	0.75
lucen_apach	2	2	2	6	1	1	13	1.86
main_advantag	2	4	1	2	5	1	14	1.64
saudi_arabia	2	1	3	3	3	1	12	0.98
tag_tag	2	2	3	5	1	1	13	1.51
us_automat	2	3	5	2	2	1	14	1.38
word_inform	2	5	3	5	3	1	18	1.6
analysi_identifi	1	5	3	3	4	1	16	1.6
common_attribut	1	2	1	4	3	1	11	1.26
exampl_tweet	1	1	1	2	4	1	9	1.21
model_find	1	2	2	6	4	2	15	1.83
normal_term	1	2	2	3	2	1	10	0.75
polar_text	1	1	1	2	2	1	7	0.52
preci_sion	1	1	2	3	1	1	8	0.84
system_includ	1	6	2	3	3	1	15	1.86
text_therefor	1	4	3	4	2	2	14	1.21
theori_applic	1	3	2	1	4	2	11	1.17
us_linguist	1	2	5	2	2	2	12	1.37
word_correspond	1	2	3	2	3	3	11	0.82
neg_train	3	1	1	1	3	1	9	1.03
cluster_hierarch	1	2	2	3	3	1	11	0.89
document_reduc	5	3	4	1	1	1	14	1.76
index_databas	1	1	2	1	1	1	6	0.41
stage_text	5	1	5	2	1	1	14	1.97
class_repres	3	1	5	2	2	1	13	1.51
cluster_evalu	4	1	1	2	1	2	9	1.17
document_includ	4	5	3	1	3	1	16	1.6
experiment_studi	3	2	2	3	1	1	11	0.89
identifi_topic	4	3	4	2	1	1	14	1.38
social_interact	2	2	1	4	3	1	12	1.17
user_label	1	2	2	2	1	2	8	0.52
vector_similar	4	1	3	4	1	1	13	1.51

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
word_normal	5	4	2	4	1	1	16	1.72
descend_order	4	4	1	4	2	1	15	1.51
form_verb	4	3	5	1	1	1	14	1.76
semant_represent	3	2	1	3	1	1	10	0.98
stem_gener	4	3	1	1	3	1	12	1.33
stem_porter	4	2	2	2	6	1	16	1.83
term_contain	4	2	2	5	2	1	15	1.51
text_obtain	4	2	2	3	3	1	14	1.05
us_languag	3	2	2	1	2	3	10	0.75
us_queri	2	3	1	1	2	2	9	0.75
document_content	3	4	2	4	1	1	14	1.38
document_increas	2	3	2	4	2	1	13	1.03
evalu_qualiti	3	1	3	2	4	2	13	1.05
filter_us	3	2	1	5	3	1	14	1.52
huge_number	3	5	1	1	5	1	15	1.97
match_user	3	4	3	3	1	1	14	1.22
remov_letter	3	3	1	2	3	1	12	0.98
step_preprocess	3	4	1	2	4	2	14	1.21
weight_score	2	1	1	4	2	1	10	1.17
word_vocabulari	2	2	2	4	1	1	11	1.1
avail_abl	1	1	3	4	3	2	12	1.21
document_distribut	1	2	2	2	4	2	11	0.98
extract_task	2	2	4	1	3	1	12	1.17
imag_analysi	2	3	3	1	2	1	11	0.89
languag_make	2	3	3	3	4	1	15	1.03
obtain_cluster	2	3	2	2	2	1	11	0.63
process_identifi	2	3	4	1	5	1	15	1.63
significantli_reduc	2	2	5	4	2	1	15	1.51
step_extract	2	5	3	1	2	1	13	1.51
step_identifi	2	4	3	3	3	1	15	1.03
system_term	2	4	2	5	3	1	16	1.47
us_graph	2	3	2	2	4	1	13	1.03
us_knowledg	2	2	6	2	1	1	13	1.86
approach_machin	1	1	3	5	4	1	14	1.76
independ_assumpt	1	4	1	5	3	1	14	1.76
method_mean	1	3	1	3	3	3	11	1.03
number_sampl	1	2	1	3	5	2	12	1.51
origin_dataset	1	1	4	3	1	1	10	1.33

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
problem_automat	1	4	5	3	2	1	15	1.63
twitter_stream	1	4	2	2	3	1	12	1.17
user_system	1	2	5	2	6	2	16	2
data_distribut	4	2	3	1	2	1	12	1.17
document_call	4	4	1	1	2	3	12	1.38
avail_document	4	2	4	3	2	1	15	1.21
calcul_distanc	3	3	1	4	2	1	13	1.21
input_train	3	3	1	1	4	2	12	1.21
base_emot	1	1	2	1	2	2	7	0.55
develop_evalu	1	4	1	4	2	1	12	1.47
featur_evalu	2	1	1	3	3	3	10	0.98
linear_function	4	2	2	2	2	1	12	0.98
particular_domain	1	2	3	1	3	1	10	0.98
randomli_chosen	4	2	1	3	3	2	13	1.05
valu_measur	4	5	2	3	2	1	16	1.47
algorithm_mine	3	2	1	2	1	1	9	0.82
analyz_tweet	1	2	1	5	3	1	12	1.6
imag_video	2	1	2	3	5	2	13	1.38
measur_find	3	3	1	3	2	2	12	0.82
number_retriev	3	1	3	5	1	1	13	1.63
process_automat	3	3	2	4	3	1	15	1.03
process_take	3	3	3	3	4	1	16	0.98
requir_user	3	2	4	1	3	2	13	1.05
rule_combin	2	2	1	1	1	1	7	0.52
signific_word	2	4	3	2	1	1	12	1.17
appli_stem	1	2	4	3	2	1	12	1.17
applic_servic	2	2	1	2	4	1	11	1.1
base_structur	2	2	2	1	5	1	12	1.47
calcu_late	1	4	2	2	1	1	10	1.17
correspond_sentenc	2	3	2	1	3	2	11	0.75
experi_text	2	4	4	2	3	2	15	0.98
featur_calcul	2	1	2	4	3	1	12	1.17
interact_user	2	2	1	1	3	1	9	0.82
map_word	2	4	1	3	1	1	11	1.26
order_understand	2	1	4	1	3	1	11	1.26
search_retriev	2	3	4	4	2	1	15	1.21
token_remov	2	5	2	4	1	1	14	1.64
us_gener	1	3	3	3	4	2	14	1.03

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
vector_train	2	2	4	3	3	2	14	0.82
weight_obtain	1	2	2	1	3	1	9	0.82
class_posit	1	2	1	1	2	1	7	0.52
commun_comput	1	1	2	2	4	1	10	1.17
consist_phase	1	1	3	3	4	1	12	1.33
correctli_identifi	1	6	2	2	1	2	12	1.86
document_form	1	4	5	4	1	1	15	1.86
experi_dataset	1	3	1	1	5	1	11	1.67
knowledg_resourc	1	2	5	1	1	1	10	1.6
languag_social	1	3	3	2	2	1	11	0.89
system_measur	1	4	2	4	2	1	13	1.37
text_method	1	5	3	3	3	1	15	1.51
word_chang	1	3	1	3	7	1	15	2.34
engin_issu	4	1	2	1	2	1	10	1.17
identifi_us	6	1	3	2	1	1	13	1.97
determin_number	6	3	2	1	1	1	13	1.97
normal_word	6	1	2	4	2	1	15	1.97
text_identifi	4	1	5	1	1	1	12	1.83
world_congress	2	2	1	1	3	1	9	0.82
comparison_method	3	4	3	1	1	1	12	1.33
document_improv	5	1	2	3	1	1	12	1.6
precis_calcul	5	1	2	4	1	1	13	1.75
stem_document	5	2	2	5	1	1	15	1.86
centroid_cluster	2	3	1	1	3	1	10	0.98
data_approach	3	4	2	3	2	1	14	1.05
indic_word	2	2	3	4	2	1	13	1.03
interest_user	2	4	1	1	3	1	11	1.26
punctuat_remov	3	1	1	3	5	1	13	1.63
set_featur	3	2	2	1	3	1	11	0.89
twitter_facebook	2	2	1	4	3	1	12	1.17
variou_techniqu	3	2	5	3	2	1	15	1.37
word_ad	2	1	3	2	3	1	11	0.89
accu_raci	2	2	3	2	3	2	12	0.52
algorithm_accuraci	2	3	3	1	4	1	13	1.21
algorithm_consist	2	4	2	2	4	1	14	1.22
algorithm_naiv	2	3	1	1	6	1	13	1.97
collect_collect	2	1	3	1	2	1	9	0.82
compar_us	2	1	3	5	1	1	12	1.6

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
comparison_document	2	3	4	3	1	2	13	1.05
comparison_precis	2	2	1	5	1	1	11	1.55
describ_process	2	4	1	4	2	1	13	1.37
develop_develop	1	2	2	1	4	1	10	1.17
equal_length	2	2	3	2	2	1	11	0.63
featur_perform	2	3	1	6	1	1	13	1.97
frequenc_corpu	1	1	1	4	1	1	8	1.22
http_lucen	2	2	2	5	1	1	12	1.47
keyword_queri	2	3	2	2	2	2	11	0.41
measur_estim	1	1	2	1	3	1	8	0.84
model_take	2	4	1	3	3	1	13	1.21
obtain_word	2	1	2	4	2	2	11	0.98
probabilist_classifi	2	1	2	4	1	2	10	1.1
process_activ	2	2	5	1	1	1	11	1.55
score_comput	2	2	3	5	1	1	13	1.51
step_select	2	6	1	1	3	1	13	1.97
system_learn	2	3	4	2	1	1	12	1.17
term_relev	2	2	2	3	1	1	10	0.75
word_structur	2	1	3	1	5	1	12	1.6
word_type	2	3	2	4	2	1	13	1.03
algorithm_classif	1	4	3	3	2	1	13	1.21
base_mean	1	4	2	5	2	1	14	1.64
clean_data	1	1	2	4	2	1	10	1.17
document_creat	1	1	4	6	2	2	14	1.97
document_remov	1	6	3	2	3	1	15	1.86
extract_name	1	2	2	3	2	1	10	0.75
func_tion	1	1	2	2	4	1	10	1.17
issn_issn	1	2	2	2	3	1	10	0.75
matrix_term	1	3	1	3	2	1	10	0.98
meaning_inform	1	3	3	2	4	1	13	1.21
method_detect	1	1	3	6	2	1	13	1.97
output_process	1	1	3	1	3	2	9	0.98
system_avail	1	2	1	3	3	2	10	0.89
system_detect	1	1	1	4	4	1	11	1.55
text_sourc	1	1	3	3	3	1	11	1.1
time_base	1	2	2	3	2	1	10	0.75
remov_step	3	1	1	2	1	3	8	0.98
parent_node	3	2	1	1	1	1	8	0.84

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
perform_obtain	3	1	2	3	2	1	11	0.89
word_lead	2	3	2	1	1	1	9	0.82
appear_text	5	1	2	1	4	1	13	1.75
cluster_repres	3	2	2	2	1	1	10	0.75
inform_servic	1	1	1	1	4	1	8	1.22
predefin_class	3	1	1	4	1	1	10	1.33
applic_inform	4	2	1	5	2	1	14	1.64
becom_increasingli	4	1	2	3	1	1	11	1.26
classif_data	2	3	1	3	1	2	10	0.89
inform_social	1	2	2	1	2	1	8	0.55
lower_number	4	2	2	3	1	1	12	1.17
techniqu_featur	2	2	4	1	3	1	12	1.17
affix_word	3	1	2	2	3	1	11	0.89
classif_arab	3	2	1	2	3	1	11	0.89
dataset_avail	2	1	1	2	3	1	9	0.82
dataset_creat	3	2	1	3	2	1	11	0.89
featur_semant	2	3	2	3	1	1	11	0.89
function_similar	3	3	1	3	2	1	12	0.98
perform_step	3	4	3	1	2	2	13	1.05
repres_singl	3	1	3	2	3	1	12	0.98
step_gener	3	3	5	1	1	1	13	1.63
time_number	3	1	2	1	4	1	11	1.26
token_us	2	2	3	2	2	2	11	0.41
vector_number	3	1	1	4	1	2	10	1.26
approach_pattern	2	3	2	2	1	1	10	0.75
contain_topic	2	4	3	1	1	2	11	1.17
content_type	1	1	2	1	2	1	7	0.52
degre_similar	1	6	1	2	2	1	12	1.94
form_inform	2	1	3	4	1	1	11	1.26
improv_us	2	1	1	5	5	1	14	1.97
inform_form	2	2	6	2	1	1	13	1.86
interest_pattern	2	4	3	1	1	1	11	1.26
model_produc	2	2	1	1	3	1	9	0.82
present_text	2	2	5	2	3	1	14	1.38
score_precis	2	2	4	3	1	1	12	1.17
stem_exampl	2	2	3	1	2	2	10	0.63
text_appli	2	1	1	3	4	2	11	1.17
valu_chosen	1	1	3	2	3	1	10	0.98

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
automat_emot	1	1	1	2	1	1	6	0.41
base_perform	1	4	1	1	2	2	9	1.17
cluster_topic	1	3	3	2	1	3	10	0.98
contain_specif	1	1	2	3	5	1	12	1.6
data_describ	1	4	2	4	1	1	12	1.47
data_estim	1	2	2	2	2	1	9	0.52
data_user	1	1	1	2	6	1	11	2
electron_commun	1	1	2	3	2	1	9	0.82
exist_techniqu	1	1	3	2	3	1	10	0.98
frequenc_text	1	2	3	2	5	1	13	1.51
languag_stem	1	3	2	3	3	1	12	0.98
method_topic	1	1	2	3	3	2	10	0.89
model_increas	1	1	2	4	1	1	9	1.21
object_base	1	2	2	3	5	1	13	1.51
produc_cluster	1	3	2	1	1	1	8	0.84
rela_tionship	1	3	3	2	1	1	10	0.98
signific_number	1	2	1	1	5	1	10	1.6
similar_semant	1	4	1	3	1	1	10	1.33
system_creat	1	2	4	1	3	1	11	1.26
time_accuraci	1	1	2	2	2	1	8	0.55
topic_us	1	2	1	3	2	3	9	0.89
train_word	1	1	1	3	2	3	8	0.98
word_valu	1	2	1	2	3	1	9	0.82
semant_concept	1	1	1	1	1	1	5	0
languag_form	2	1	1	3	2	1	9	0.82
stemmer_compar	2	3	1	1	1	1	8	0.84
distribut_class	2	1	2	1	3	2	9	0.75
binari_valu	4	1	1	1	5	1	12	1.83
consid_number	3	3	2	2	1	1	11	0.89
document_thereför	4	4	1	2	2	1	13	1.37
gener_train	1	4	1	1	3	1	10	1.33
higher_weight	3	1	3	3	1	1	11	1.1
method_present	2	3	3	1	2	1	11	0.89
word_preposit	2	2	4	1	2	1	11	1.1
approach_select	3	2	1	2	2	2	10	0.63
assign_cluster	3	2	2	1	1	1	9	0.82
cluster_compar	3	2	2	1	3	1	11	0.89
form_form	3	1	3	3	2	1	12	0.98

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
grow_rapidli	3	2	3	3	1	1	12	0.98
matrix_contain	2	1	2	1	4	1	10	1.17
method_semant	2	2	1	2	2	1	9	0.52
term_identifi	1	1	2	1	2	1	7	0.52
text_present	2	1	3	1	3	1	10	0.98
topic_similar	1	2	1	1	1	1	6	0.41
vector_input	3	1	1	2	2	1	9	0.82
analysi_comput	2	3	4	1	1	2	11	1.17
analysi_problem	1	1	4	2	3	1	11	1.26
approach_compar	2	3	1	1	4	1	11	1.26
emerg_technolog	2	4	2	1	4	1	13	1.37
exist_algorithm	2	3	2	1	1	1	9	0.82
graph_model	2	6	2	1	1	1	12	1.94
luhn_automat	2	2	1	1	2	1	8	0.55
method_construct	2	4	2	2	1	1	11	1.1
order_measur	2	2	2	2	3	1	11	0.63
perform_fold	2	1	2	3	1	1	9	0.82
remov_nois	2	1	3	3	1	2	10	0.89
similar_approach	2	1	2	5	1	1	11	1.55
system_refer	2	2	4	1	3	1	12	1.17
tool_provid	1	3	1	3	1	1	9	1.03
transact_pattern	2	1	1	2	5	1	11	1.55
analysi_knowledg	1	2	1	4	5	1	13	1.75
base_appli	1	3	1	3	4	1	12	1.33
base_rank	1	2	1	3	3	1	10	0.98
classifi_term	1	1	3	2	3	1	10	0.98
crucial_role	1	1	2	2	4	1	10	1.17
featur_learn	1	3	2	3	2	1	11	0.89
field_data	1	3	2	3	4	1	13	1.21
function_defin	1	4	1	4	2	1	12	1.47
gener_architectur	1	3	2	3	1	1	10	0.98
good_featur	1	1	2	3	1	1	8	0.84
lemmat_word	1	1	5	3	1	1	11	1.67
mathemat_scienc	1	1	3	2	2	1	9	0.82
media_content	1	1	1	2	4	1	9	1.21
model_machin	1	2	2	2	4	1	11	1.1
morpho_syntact	1	2	2	1	2	1	8	0.55
number_attribut	1	2	1	2	4	1	10	1.17

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
number_concept	1	3	1	1	3	1	9	1.03
perform_dataset	1	1	2	4	2	2	10	1.1
similar_group	1	5	1	3	1	1	11	1.67
simpl_probabilist	1	1	2	4	3	1	11	1.26
solv_issu	1	2	1	2	2	3	8	0.75
split_text	1	2	1	2	4	1	10	1.17
step_find	1	5	1	2	3	2	12	1.51
stochast_gradient	1	2	2	2	1	1	8	0.55
text_step	1	4	1	3	2	1	11	1.26
third_type	1	1	1	3	2	1	8	0.84
type_system	1	2	1	2	2	1	8	0.55
cluster_correspond	4	1	1	2	1	1	9	1.21
compar_origin	4	1	1	1	2	1	9	1.21
sequenc_model	1	1	1	1	2	1	6	0.41
rule_defin	3	1	2	1	2	1	9	0.82
correspond_featur	3	1	2	2	2	1	10	0.75
process_search	4	1	1	3	1	1	10	1.33
therefor_develop	4	2	1	1	4	1	12	1.47
word_indic	3	2	1	1	3	2	10	0.89
catégori_us	3	3	3	1	1	1	11	1.1
classif_new	1	2	3	2	1	1	9	0.82
correspond_topic	2	3	2	3	1	1	11	0.89
dictionari_dictionari	3	2	2	3	2	1	12	0.75
document_normal	3	3	3	1	1	1	11	1.1
engin_retriev	3	2	1	1	1	1	8	0.84
inquiri_word	3	1	3	2	1	2	10	0.89
remov_arab	3	2	1	2	2	1	10	0.75
requir_addit	3	1	2	3	1	1	10	0.98
step_token	2	2	1	3	2	2	10	0.63
us_normal	3	1	2	4	1	2	11	1.17
alphabet_charact	2	1	3	3	1	1	10	0.98
base_implement	2	4	1	1	3	1	11	1.26
base_pattern	1	1	2	1	3	1	8	0.84
base_probabl	2	2	1	2	3	1	10	0.75
case_text	2	2	1	1	6	1	12	1.94
charact_punctuat	2	3	1	2	3	1	11	0.89
engin_inform	2	2	1	2	4	2	11	0.98
extract_phrase	2	1	2	2	1	1	8	0.55

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
initi_step	2	2	3	3	1	1	11	0.89
measur_qualiti	2	2	4	2	2	1	12	0.98
method_effect	2	2	2	3	3	1	12	0.75
model_calcul	2	3	1	1	1	4	8	1.26
particular_case	1	2	3	2	2	1	10	0.75
rapid_develop	2	1	2	1	3	1	9	0.82
string_number	1	3	1	1	1	1	7	0.82
system_make	2	2	3	1	1	2	9	0.75
toulous_franc	2	3	3	1	1	1	10	0.98
us_resourc	2	2	1	2	4	1	11	1.1
valu_model	2	2	1	4	1	1	10	1.17
vector_length	2	1	1	3	2	1	9	0.82
word_porter	2	3	2	2	3	1	12	0.75
approach_found	1	1	2	3	2	2	9	0.75
call_term	1	2	6	1	1	2	11	1.94
classifi_decis	1	2	2	3	2	1	10	0.75
content_tweet	1	1	1	3	4	1	10	1.33
database_commun	1	3	2	4	1	1	11	1.26
document_specif	1	2	1	3	3	1	10	0.98
human_social	1	2	2	3	1	1	9	0.82
inform_analysi	1	2	2	2	3	1	10	0.75
linguist_volum	1	5	4	1	1	1	12	1.83
method_case	1	3	1	2	4	1	11	1.26
model_thu	1	2	1	1	3	2	8	0.82
page_contain	1	3	1	3	2	1	10	0.98
partial_support	1	2	1	2	4	1	10	1.17
plai_crucial	1	1	2	1	4	1	9	1.21
problem_includ	1	3	1	2	2	1	9	0.82
scienc_softwar	1	2	2	1	4	1	10	1.17
step_approach	1	1	1	3	2	1	8	0.84
step_featur	1	1	1	2	3	1	8	0.84
studi_comput	1	2	1	2	1	1	7	0.52
system_capabl	1	2	2	1	1	2	7	0.55
system_project	1	1	1	5	3	2	11	1.6
techniqu_help	1	2	1	2	5	1	11	1.55
techniqu_perform	1	2	3	3	3	1	12	0.98
text_twitter	1	1	1	2	4	1	9	1.21
time_exampl	1	2	2	3	4	1	12	1.17

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
tool_gener	1	1	3	3	2	1	10	0.98
us_preprocess	1	1	1	3	4	1	10	1.33
vector_contain	1	1	2	5	2	1	11	1.55
document_phrase	1	1	3	1	1	1	7	0.82
text_vector	4	2	2	1	1	1	10	1.17
algorithm_given	3	1	1	1	2	2	8	0.82
method_word	4	3	2	1	1	1	11	1.26
problem_word	3	2	2	1	1	2	9	0.75
spend_time	3	1	1	2	3	1	10	0.98
state_model	1	1	1	1	3	1	7	0.82
combin_term	3	3	2	2	1	1	11	0.89
effici_search	3	1	1	1	2	1	8	0.84
enorm_amount	2	1	2	1	4	1	10	1.17
further_increas	3	4	1	1	1	1	10	1.33
model_addit	3	2	2	2	1	2	10	0.63
model_requir	3	1	2	2	1	1	9	0.82
select_topic	3	1	2	2	1	2	9	0.75
term_search	1	2	2	1	1	1	7	0.52
test_compar	3	2	1	2	2	1	10	0.75
addit_word	2	3	1	2	1	1	9	0.82
analysi_applic	2	1	3	1	4	1	11	1.26
approach_reli	1	3	1	1	3	1	9	1.03
databas_search	1	2	2	2	1	1	8	0.55
elimin_stem	2	3	3	2	1	1	11	0.89
eval_uation	2	1	1	3	2	1	9	0.82
identifi_similar	2	2	2	2	2	1	10	0.41
knowledg_document	2	3	2	2	1	1	10	0.75
network_machin	2	1	1	2	3	1	9	0.82
split_data	1	3	1	3	1	1	9	1.03
steinbach_karypi	1	2	3	2	1	1	9	0.82
store_file	1	1	2	1	1	1	6	0.41
topic_exampl	2	3	1	2	1	1	9	0.82
user_data	2	1	1	3	3	1	10	0.98
valu_posit	2	1	1	2	5	1	11	1.55
accord_word	1	3	3	2	1	1	10	0.98
algorithm_determin	1	2	2	2	3	1	10	0.75
anger_fear	1	2	1	1	3	1	8	0.84
approach_consist	1	2	2	3	2	1	10	0.75

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
approach_outperform	1	1	1	3	1	2	7	0.84
candid_gener	1	1	1	3	1	1	7	0.82
choos_number	1	2	1	3	1	1	8	0.84
collect_period	1	3	2	1	3	2	10	0.89
compar_number	1	2	3	2	3	1	11	0.89
construct_graph	1	2	1	1	1	1	6	0.41
count_time	1	1	2	1	1	1	6	0.41
descrip_tion	1	1	2	2	2	2	8	0.52
design_algorithm	1	2	5	2	1	1	11	1.55
document_view	1	4	1	3	1	2	10	1.26
extract_textual	1	1	3	4	1	1	10	1.33
featur_preprocess	1	1	1	2	4	1	9	1.21
filter_step	1	2	1	3	2	1	9	0.82
help_classifi	1	1	1	2	4	1	9	1.21
independ_given	1	2	1	1	4	1	9	1.21
knowledg_sourc	1	3	2	2	3	1	11	0.89
label_class	1	3	1	2	3	2	10	0.89
method_produc	1	4	1	3	1	1	10	1.33
overal_score	1	1	1	3	1	1	7	0.82
process_human	1	4	1	1	3	2	10	1.26
step_construct	1	3	2	1	4	1	11	1.26
strength_weak	1	1	4	1	1	1	8	1.22
test_purpos	1	2	2	3	2	1	10	0.75
us_extern	1	2	1	4	1	2	9	1.17
word_divid	1	2	2	1	3	1	9	0.82
word_system	1	2	3	1	4	1	11	1.26
topic_categor	4	1	1	1	1	1	8	1.22
consid_time	3	2	1	1	3	1	10	0.98
data_partit	2	2	2	1	1	1	8	0.55
exist_document	3	1	2	2	2	1	10	0.75
featur_name	2	1	1	2	3	1	9	0.82
iter_step	1	3	1	1	1	1	7	0.82
label_base	3	1	1	3	2	1	10	0.98
media_platform	2	2	1	1	2	2	8	0.52
method_keyword	3	2	2	1	1	2	9	0.75
base_frequent	2	2	2	1	1	1	8	0.55
cate_gori	1	1	2	3	1	2	8	0.82
comparison_baselin	2	1	1	2	2	1	8	0.55

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
comput_perform	2	3	2	2	1	1	10	0.75
consid_case	2	1	1	1	4	1	9	1.21
dataset_method	2	2	1	2	2	1	9	0.52
distribut_represent	1	1	2	1	1	1	6	0.41
introduc_concept	2	3	2	1	2	1	10	0.75
level_document	2	1	1	1	3	1	8	0.84
metric_text	2	2	2	3	1	1	10	0.75
queri_gener	2	2	4	1	1	1	10	1.17
support_grant	2	3	1	2	2	1	10	0.75
user_perform	2	1	1	1	3	1	8	0.84
variou_approach	2	1	4	2	1	1	10	1.17
accuraci_number	1	2	1	2	2	2	8	0.52
affect_user	1	1	1	1	4	1	8	1.22
analysi_emot	1	2	1	2	3	1	9	0.82
analysi_featur	1	1	3	1	3	1	9	1.03
analysi_order	1	1	1	2	5	1	10	1.6
averag_sentenc	1	1	1	1	2	1	6	0.41
catégori_tweet	1	1	1	2	2	1	7	0.52
contain_singl	1	1	1	2	4	1	9	1.21
discoveri_databas	1	2	3	2	1	1	9	0.82
distanc_calcul	1	1	1	1	3	2	7	0.84
experi_featur	1	2	1	3	1	1	8	0.84
graph_structur	1	3	2	1	2	1	9	0.82
increas_precis	1	3	2	1	2	1	9	0.82
keyword_cluster	1	1	2	2	4	1	10	1.17
level_system	1	1	1	1	3	1	7	0.82
main_sourc	1	1	1	1	4	1	8	1.22
neg_affect	1	2	1	2	2	1	8	0.55
network_data	1	2	1	3	2	1	9	0.82
order_base	1	1	1	2	2	2	7	0.55
process_construct	1	2	3	1	2	1	9	0.82
sampl_test	1	1	1	2	3	1	8	0.84
step_build	1	1	2	3	3	1	10	0.98
us_exampl	1	2	3	2	1	1	9	0.82
user_give	1	1	1	3	1	1	7	0.82
vector_calcul	1	5	1	1	1	2	9	1.6
word_retriev	1	1	1	2	1	2	6	0.52
written_java	1	1	1	3	3	2	9	0.98

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
ad_word	3	1	2	1	1	2	8	0.82
extern_sourc	3	2	1	1	1	1	8	0.84
featur_posit	3	1	1	2	1	1	8	0.84
overal_system	3	1	1	2	1	1	8	0.84
stem_languag	3	2	1	2	1	1	9	0.82
algorithm_consid	2	2	2	2	1	1	9	0.52
automat_creation	2	2	2	1	2	1	9	0.52
cluster_unsupervis	2	1	2	1	2	1	8	0.55
dataset_compar	2	1	1	2	3	1	9	0.82
describ_algorithm	2	1	1	2	2	1	8	0.55
effici_cluster	1	3	1	1	1	1	7	0.82
full_word	1	1	1	1	1	1	5	0
model_human	2	1	1	1	3	1	8	0.84
punctuat_stop	2	1	1	1	3	1	8	0.84
rang_valu	2	1	1	1	1	1	6	0.41
remov_frequent	2	2	2	1	1	2	8	0.52
sampl_word	2	1	2	1	1	3	7	0.82
time_text	2	1	2	1	1	1	7	0.52
word_affect	2	1	2	1	1	1	7	0.52
algorithm_obtain	1	2	3	1	1	1	8	0.84
approach_provid	1	1	2	3	1	1	8	0.84
calcul_step	1	1	2	3	2	1	9	0.82
difficult_languag	1	3	1	1	1	1	7	0.82
document_arab	1	2	1	2	1	2	7	0.55
equat_calcul	1	1	2	2	1	1	7	0.52
extract_variou	1	1	2	4	1	1	9	1.21
famili_member	1	1	2	1	2	1	7	0.52
index_base	1	2	1	2	1	1	7	0.52
indic_cluster	1	1	1	1	1	1	5	0
inform_becom	1	2	2	1	1	1	7	0.52
manual_extract	1	2	1	3	1	1	8	0.84
metric_base	1	1	1	3	1	1	7	0.82
miller_wordnet	1	3	2	2	1	1	9	0.82
perform_supervis	1	1	1	2	2	1	7	0.52
process_design	1	3	1	1	1	1	7	0.82
process_part	1	2	1	3	1	2	8	0.82
score_method	1	2	1	2	1	1	7	0.52
stream_text	1	2	3	1	1	1	8	0.84

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
system_conclus	1	1	2	2	2	1	8	0.55
test_split	1	2	1	2	2	1	8	0.55
topic_cover	1	2	1	3	1	1	8	0.84
uniqu_featur	1	2	1	2	2	1	8	0.55
user_send	1	3	1	3	1	1	9	1.03
predict_categor	4	1	1	1	1	1	8	1.22
annual_symposium	3	1	1	1	2	1	8	0.84
model_respect	1	1	1	2	1	1	6	0.41
analysi_time	2	1	2	1	1	1	7	0.52
approach_deal	2	1	1	2	1	1	7	0.52
base_natur	2	1	3	1	1	1	8	0.84
collect_user	1	1	1	2	1	2	6	0.52
creation_literatur	2	2	1	1	2	1	8	0.55
data_group	2	1	1	2	1	1	7	0.52
document_pars	2	3	1	1	1	1	8	0.84
exampl_queri	2	1	1	2	1	1	7	0.52
normal_us	1	2	2	1	1	1	7	0.52
topic_refer	2	1	3	1	1	1	8	0.84
complet_text	1	1	1	2	2	1	7	0.52
context_process	1	2	1	2	1	1	7	0.52
correl_topic	1	1	1	1	1	1	5	0
data_chang	1	2	2	1	2	1	8	0.55
help_peopl	1	2	1	2	1	1	7	0.52
inform_thu	1	3	2	1	1	1	8	0.84
limit_word	1	2	3	1	1	1	8	0.84
method_exampl	1	1	2	3	1	1	8	0.84
mine_word	1	3	2	1	1	1	8	0.84
model_prove	1	2	1	2	1	1	7	0.52
model_singl	1	1	2	1	2	1	7	0.52
nois_data	1	2	1	3	1	1	8	0.84
perform_find	1	1	3	2	1	1	8	0.84
term_process	1	1	1	3	1	1	7	0.82
time_make	1	1	3	2	1	1	8	0.84
us_collect	1	1	2	2	1	2	7	0.55
us_determin	1	3	2	1	1	1	8	0.84
user_accord	1	1	1	2	3	1	8	0.84
valu_text	1	2	1	1	3	1	8	0.84
word_correl	1	1	1	1	2	1	6	0.41

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
mean_approach	2	1	1	1	1	1	6	0.41
current_version	2	1	2	1	1	1	7	0.52
martin_porter	2	1	1	1	2	1	7	0.52
obtain_relev	2	1	1	2	1	1	7	0.52
refer_mean	2	1	1	1	2	1	7	0.52
term_obtain	2	1	1	1	1	1	6	0.41
approach_discov	1	2	1	1	2	1	7	0.52
approach_estim	1	1	1	3	1	1	7	0.82
catégori_classif	1	1	2	1	1	1	6	0.41
classifi_built	1	1	1	2	1	1	6	0.41
classifi_simpl	1	2	1	1	1	2	6	0.52
data_initi	1	1	1	2	2	1	7	0.52
featur_input	1	1	1	2	1	2	6	0.52
function_determin	1	1	1	2	2	1	7	0.52
improv_document	1	2	1	2	1	1	7	0.52
measur_emot	1	1	1	2	1	1	6	0.41
preprocess_token	1	1	1	2	2	1	7	0.52
problem_lack	1	1	1	3	1	1	7	0.82
process_complet	1	2	1	1	1	1	6	0.41
provid_signific	1	1	1	1	2	1	6	0.41
select_group	1	1	1	1	1	1	5	0
system_stem	1	1	1	2	1	1	6	0.41
thousand_document	1	1	2	1	1	1	6	0.41
train_remain	1	2	2	1	1	1	7	0.52
contain_user	1	1	1	1	1	1	5	0
email_address	2	1	1	1	1	1	6	0.41
account_order	1	2	1	1	1	1	6	0.41
accuraci_significantli	1	1	1	1	2	1	6	0.41
base_lexic	1	1	1	1	1	1	5	0
base_theori	1	1	1	1	2	1	6	0.41
becom_time	1	1	1	1	2	1	6	0.41
featur_task	1	1	1	1	2	1	6	0.41
limit_term	1	1	1	1	1	1	5	0
process_break	1	2	1	1	1	1	6	0.41
public_date	1	1	2	1	1	1	6	0.41
retriev_semant	1	2	1	1	1	1	6	0.41
space_number	1	1	1	1	1	2	5	0.41
studi_analysi	1	1	1	1	1	1	5	0

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
symposium_document	1	1	1	1	1	1	5	0
tree_approach	1	1	1	1	2	1	6	0.41
apach_core	1	1	1	1	1	1	5	0

## APPENDIX 5-F

This appendix contains the total occurrence results.

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DEV</b>
machin_learn	200	239	165	306	304	58	1214	93.91
text_mine	222	242	306	174	160	32	1104	93.06
natur_languag	185	265	232	205	163	33	1050	80.59
inform_retriev	287	214	174	238	80	31	993	97.66
data_mine	149	179	189	122	208	17	847	69.26
stop_word	139	142	109	216	181	49	787	57.8
naiv_bay	103	115	138	111	270	30	737	78.68
text_classif	175	181	128	111	148	22	743	58.21
languag_process	119	172	150	145	113	24	699	51.95
featur_select	144	84	139	115	198	6	680	65.03
text_document	131	150	124	92	152	25	649	47.99
sentiment_analysi	41	138	80	77	257	15	593	86.85
neural_network	91	103	66	46	256	12	562	85.01
social_media	33	171	81	63	176	45	524	63.09
precis_recal	81	92	68	172	100	19	513	49.85
social_network	93	58	90	139	127	20	507	43.99
document_cluster	157	75	91	71	98	27	492	42.51
part_speech	52	109	73	70	204	2	508	67.95
comput_linguist	82	125	86	100	92	16	485	36.42
arab_text	112	59	103	56	157	12	487	51.11
topic_model	72	110	21	165	39	76	407	51.7
term_frequenc	91	97	83	93	78	26	442	26.4
text_categor	152	115	96	49	39	11	451	52.94
support_vector	105	69	43	100	124	9	441	43.22
vector_space	78	68	52	150	40	22	388	44.68
train_data	42	85	45	133	90	11	395	43.48
vector_machin	93	66	40	80	114	9	393	37.81
name_entiti	26	62	86	172	18	8	364	61.36
search_engin	61	61	52	83	26	76	283	20.03
similar_measur	61	86	65	90	41	11	343	29.52
document_frequenc	65	91	77	53	51	11	337	27.5
featur_extract	63	36	71	92	71	11	333	29.01
posit_neg	30	68	44	60	118	16	320	35.84

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
base_approach	38	80	66	38	85	10	307	29.05
term_weight	69	95	33	60	50	6	307	30.6
text_process	54	56	38	41	121	2	310	38.98
text_analysi	46	37	35	130	39	13	287	40.74
learn_algorithm	45	59	40	60	86	7	290	26.27
word_remov	50	67	49	65	42	19	273	17.49
space_model	59	39	44	95	40	13	277	27.26
artifici_intellig	55	63	40	55	66	6	279	22.24
cross_valid	34	38	23	95	71	16	261	30.54
arab_languag	35	51	48	68	66	6	268	22.95
featur_vector	64	27	56	49	65	6	261	23.42
stem_algorithm	41	66	43	64	30	20	244	18.25
cluster_algorithm	83	54	42	23	48	11	250	25.18
word_document	45	57	39	57	42	21	240	13.38
train_test	40	43	22	81	53	22	239	22.06
scienc_engin	40	64	37	53	55	8	249	19.77
number_word	55	54	30	68	38	10	245	20.84
word_stem	40	58	47	58	45	6	248	19.21
inform_extract	32	46	68	24	80	4	250	28.3
decis_tree	22	86	29	18	89	2	244	37.11
document_collect	49	51	52	61	17	12	230	20.49
semant_analysi	36	50	47	50	43	15	226	13.41
softwar_engin	8	50	39	35	105	2	237	36.93
document_document	103	33	24	29	40	5	229	33.51
latent_semant	40	44	28	77	32	11	221	22.02
invers_document	36	52	44	40	38	9	210	14.61
retriev_system	70	25	36	68	8	9	207	27.62
depart_comput	49	34	45	38	41	4	207	16.14
bay_classifi	23	35	35	45	63	9	201	18.46
test_data	18	45	13	49	81	4	206	28.8
cosin_similar	44	46	32	58	13	13	193	18.47
document_term	40	40	47	42	29	5	198	15.3
data_process	16	54	40	36	56	1	202	21.62
data_set	60	24	23	30	57	3	194	21.89
data_collect	38	45	26	21	60	6	190	19.08
rule_base	16	37	31	38	64	2	186	21.16
word_list	55	14	16	66	31	4	182	24.67
train_model	35	20	27	63	16	25	161	16.96

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
keyword_extract	80	31	10	53	10	1	184	30.55
random_forest	6	19	4	48	98	8	175	36.89
base_method	51	43	27	27	28	5	176	15.85
nearest_neighbor	52	51	11	23	40	2	177	21.07
latent_dirichlet	26	56	5	45	32	15	164	18.82
stem_word	31	28	42	40	33	4	174	13.66
classif_algorithm	27	31	18	23	76	3	175	24.69
porter_stemmer	104	17	9	18	16	13	164	36.64
speech_tag	33	42	27	23	51	1	176	17.27
mine_techniqu	13	35	54	30	32	13	164	15.37
knowledg_base	12	36	52	57	14	6	171	21.92
scienc_technolog	41	57	30	15	21	12	164	17.19
electr_engin	5	17	5	134	7	8	168	51.47
supervis_learn	20	42	29	35	48	1	174	16.92
semant_similar	6	51	27	78	4	9	166	29.81
model_base	47	17	16	21	70	3	171	24.73
base_featur	23	74	9	45	18	5	169	26.13
engin_comput	5	10	6	133	11	9	165	51
light_stem	36	24	23	16	72	1	171	24.13
text_file	21	17	21	31	71	11	161	21.74
cloud_comput	9	3	10	31	118	1	171	45.05
data_analysi	22	32	28	37	47	4	166	14.62
document_contain	45	39	28	27	18	10	157	12.92
dirichlet_alloc	24	48	5	41	32	15	150	16.11
automat_text	46	31	26	41	16	2	160	16.25
remov_stop	26	32	27	43	23	11	151	10.53
engin_technolog	9	33	30	58	19	13	149	17.83
cluster_cluster	36	16	29	52	25	3	158	16.8
document_classif	29	31	38	20	39	4	157	13.14
word_sentenc	20	62	21	29	28	1	160	19.95
model_us	15	14	10	26	82	13	147	27.65
word_frequenc	20	36	10	49	36	7	151	16.62
languag_model	27	59	9	35	23	3	153	19.99
classif_us	24	49	23	15	30	15	141	12.65
solv_problem	21	29	19	27	59	1	155	18.96
system_us	31	26	32	28	28	9	145	8.45
recal_precis	22	26	33	40	19	14	140	9.52
learn_approach	12	47	16	42	32	5	149	17.14

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
document_summar	22	61	14	45	8	2	150	22.99
frequenc_word	21	42	14	42	22	10	141	13.78
inform_scienc	37	30	23	33	22	5	145	11.37
word_text	24	34	21	20	46	5	145	13.89
frequenc_term	41	29	35	19	21	4	145	13.15
frequenc_invers	23	40	25	22	32	7	142	11.05
improv_perform	30	25	20	14	43	16	132	10.73
relev_document	40	25	16	47	9	9	137	16.12
inform_process	20	36	24	27	32	6	139	10.55
comput_applic	55	20	24	7	20	17	126	16.31
document_word	31	22	29	39	19	3	140	12.4
extract_featur	37	17	25	22	32	9	133	10.11
compar_studi	30	30	36	21	24	1	141	12.27
method_base	30	32	21	25	29	5	137	9.95
select_method	49	22	18	6	41	4	136	18.3
recal_measur	18	36	25	20	38	3	137	12.89
classif_accuraci	35	21	32	10	39	2	137	14.8
number_time	19	25	33	27	33	2	137	11.63
topic_topic	46	28	13	27	16	8	130	13.74
learn_model	29	14	2	58	24	11	127	19.64
document_repres	44	34	13	20	20	5	131	14.17
languag_text	19	47	16	21	31	2	134	15.16
learn_techniqu	18	20	19	30	46	3	133	14.33
cluster_method	53	22	16	8	28	8	127	16.87
similar_document	35	26	27	33	10	4	131	12.63
multi_document	31	64	7	23	8	2	133	23.09
base_model	31	27	14	23	36	2	131	12.38
number_featur	30	33	26	13	27	4	129	11.23
document_us	37	33	19	25	13	5	127	12.12
knowledg_discoveri	28	25	45	14	16	4	128	14.13
word_appear	20	25	25	40	17	4	127	11.79
word_featur	13	17	9	63	23	4	125	21.35
document_vector	35	15	31	26	12	8	119	11.02
mean_word	16	45	18	24	15	9	118	12.64
extract_text	14	31	17	29	32	4	123	11.3
textual_data	19	23	15	21	44	4	122	13.13
form_word	38	11	21	33	19	3	122	13.12
model_inform	5	13	4	4	95	4	121	36.5

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
repres_document	38	31	18	18	16	3	121	12.29
model_model	27	17	6	37	29	8	116	12.37
process_step	18	14	13	24	49	6	118	15.1
extract_inform	12	31	28	17	35	1	123	12.97
base_similar	25	16	31	29	7	14	108	9.46
languag_technolog	18	43	17	19	17	8	114	11.79
word_base	14	60	13	24	8	3	119	20.66
comput_engin	8	23	28	23	39	1	121	13.76
scienc_inform	14	7	19	43	36	2	119	16.22
right_reserv	12	56	27	9	12	5	116	19.07
opinion_mine	38	24	25	10	17	6	114	11.58
process_text	17	24	24	19	33	3	117	10
evalu_metric	7	14	10	28	54	7	113	18.41
manag_system	6	6	11	30	65	2	118	24.17
classif_task	36	25	13	25	17	3	116	11.43
document_number	22	14	22	13	42	6	113	12.43
stem_process	15	25	24	22	18	14	104	4.68
test_dataset	13	20	11	50	19	5	113	15.85
document_represent	48	18	14	17	17	3	114	15.03
noun_verb	11	29	18	23	35	1	116	12.32
weight_term	29	32	16	15	22	2	114	10.88
us_word	16	25	17	29	18	11	105	6.53
amount_data	9	14	28	26	37	2	114	13.17
word_model	18	21	17	40	8	11	104	11.27
document_matrix	40	15	7	23	22	7	107	12.41
number_topic	23	11	1	52	14	13	101	17.63
fold_cross	12	21	8	35	30	8	106	11.59
similar_word	10	37	20	37	5	5	109	14.98
word_vector	8	13	5	44	4	40	74	18.13
sentenc_document	35	23	26	21	6	2	111	12.51
featur_space	33	18	7	10	44	1	112	16.56
averag_precis	25	22	6	51	2	7	106	18.28
term_base	24	38	36	9	4	2	111	16.06
mean_cluster	19	20	18	25	22	9	104	5.42
logist_regress	1	5	12	63	15	17	96	22.47
term_extract	29	19	10	37	7	10	102	12.08
collect_document	27	19	21	17	19	9	103	5.85
recal_score	6	22	10	68	5	1	111	25.22

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
us_data	6	11	13	10	69	3	109	24.92
khoja_stemmer	3	26	20	19	43	1	111	15.53
text_content	3	39	33	24	10	3	109	15.58
stock_market	1	2	13	6	88	1	110	34.36
number_cluster	38	20	13	15	15	9	101	10.27
morpholog_analysi	24	26	18	18	23	1	109	9.09
pattern_recognit	14	28	26	11	25	6	104	9.18
us_inform	9	19	21	22	35	4	106	10.88
data_data	19	16	31	11	29	3	106	10.67
contain_word	25	22	8	32	18	3	105	10.83
classif_model	13	12	8	15	57	3	105	19.58
base_text	10	22	24	22	27	3	105	9.36
step_step	35	23	25	12	11	1	106	12.14
user_queri	29	10	19	19	7	23	84	8.16
model_train	18	10	8	46	17	8	99	14.48
train_document	54	13	14	11	13	1	105	18.44
featur_featur	27	15	12	31	16	5	101	9.67
index_term	23	19	28	21	11	4	102	8.71
select_featur	18	18	12	24	31	3	103	9.65
unstructur_data	37	20	20	13	14	1	104	11.81
arab_document	33	21	14	20	15	2	103	10.17
us_machin	8	29	6	29	32	1	104	13.92
time_consum	23	35	10	5	24	7	97	11.84
algorithm_base	14	15	15	24	31	5	99	9
analysi_retriev	5	1	4	88	2	4	100	34.65
knowledg_manag	41	11	10	28	11	2	101	14.44
cluster_base	25	21	31	8	13	5	98	10.17
cluster_document	24	24	26	12	12	5	98	8.64
learn_method	20	23	12	24	20	4	99	7.7
improv_accuraci	18	18	24	14	21	8	95	5.6
word_mean	15	25	25	23	10	5	98	8.5
textual_content	2	35	53	4	8	1	102	21.68
cluster_us	22	13	32	9	21	5	97	9.9
human_languag	12	24	20	19	20	7	95	6.26
predict_model	9	6	10	12	56	9	93	19.2
weight_scheme	27	8	23	20	19	4	97	8.93
base_system	19	11	15	10	45	1	100	15.05
intellig_system	12	20	8	15	40	6	95	12.4

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
collect_data	5	22	11	13	47	3	98	16.23
comput_inform	23	16	14	14	29	4	96	8.57
mobil_devic	20	15	2	36	26	1	99	13.68
word_occurr	19	45	8	13	14	1	99	15.16
document_text	26	25	13	20	12	3	96	8.83
classifi_classifi	24	18	19	16	15	7	92	5.61
cluster_techniqu	28	13	22	15	13	7	91	7.47
term_occur	22	23	22	17	9	5	93	7.63
gold_standard	7	9	9	47	23	3	95	16.48
queri_term	4	17	4	22	36	15	83	12.04
mean_algorithm	19	17	26	14	17	4	93	7.19
world_wide	19	21	18	28	9	2	95	9.24
text_preprocess	17	13	22	22	21	2	95	7.78
system_develop	15	13	15	15	35	4	93	10.17
term_term	27	21	20	17	8	3	93	8.9
develop_inform	21	25	12	19	14	5	91	7.16
point_view	16	10	40	11	17	2	94	12.92
word_root	9	31	15	29	11	1	95	11.78
recommend_system	4	40	37	3	11	1	95	17.78
maximum_entropi	45	15	14	6	14	1	94	15.33
stem_stem	27	19	15	20	13	1	94	8.73
error_rate	24	38	1	18	12	2	93	14.06
plai_role	19	11	23	10	31	1	94	10.67
singl_word	13	18	15	32	12	5	90	9.02
prefix_suffix	10	18	13	35	15	4	91	10.53
imag_process	7	19	12	15	40	2	93	13.26
root_word	5	33	14	21	16	6	89	10.38
document_retriev	42	18	11	14	4	5	89	13.95
retriev_document	31	17	13	21	8	4	90	9.67
spam_filter	26	36	6	6	7	13	81	12.56
occur_document	25	18	16	23	9	3	91	8.38
increas_number	18	11	12	14	36	3	91	11.11
system_base	17	25	7	13	29	3	91	10.09
classif_method	9	25	12	13	34	1	93	11.86
comput_system	3	25	11	18	25	12	82	8.66
inform_gain	18	20	20	10	23	2	91	7.94
data_train	11	17	8	25	25	7	86	8.14
document_similar	16	13	15	30	10	8	84	7.79

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
us_text	10	23	18	24	16	1	91	8.66
docu_ment	7	24	17	33	7	4	88	11.47
sourc_text	2	6	20	8	54	2	90	20.07
full_text	27	11	18	26	6	3	88	10.15
latent_topic	21	47	8	6	7	2	89	16.87
model_text	20	21	14	14	19	3	88	6.68
advanc_comput	18	11	17	13	31	1	90	9.85
genet_algorithm	9	1	25	7	48	1	90	18.33
knowledg_data	5	37	12	17	19	1	90	12.72
search_queri	5	63	6	12	2	3	88	23.69
frequent_word	13	19	11	19	17	11	79	3.79
inform_text	12	15	21	16	23	3	87	7.13
term_appear	33	19	21	8	4	4	85	11.55
class_label	16	22	7	9	25	10	79	7.41
train_dataset	4	15	11	39	17	3	86	13.12
number_term	23	16	18	11	14	6	82	5.85
probabl_distribut	23	10	3	30	16	6	82	10.39
preprocess_step	16	15	20	19	14	4	84	5.72
porter_stem	12	15	14	27	19	1	87	8.55
issn_onlin	10	15	20	34	8	1	87	11.45
linguist_featur	7	30	3	11	3	34	54	13.81
similar_score	5	22	13	29	10	9	79	9.05
text_retriev	21	15	13	30	4	4	83	10.05
evalu_us	16	7	19	18	25	2	85	8.46
word_occur	15	17	11	28	14	2	85	8.46
condit_probabl	12	6	19	17	31	2	85	10.33
data_engin	4	33	19	13	17	1	86	11.52
test_document	49	5	10	7	14	1	85	17.55
process_manag	25	9	8	22	19	3	83	8.85
exampl_word	17	19	15	14	17	4	82	5.35
languag_resourc	15	24	13	14	18	2	84	7.23
reduc_number	15	23	13	12	22	1	85	7.99
base_term	12	22	8	34	7	3	83	11.6
approach_base	11	12	24	11	17	11	75	5.28
base_classifi	11	7	9	10	48	1	85	16.87
process_techniqu	11	13	20	11	30	1	85	9.79
fals_posit	10	23	6	19	6	22	64	7.92
frequent_pattern	4	31	16	14	11	10	76	9.14

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
comput_commun	32	12	20	2	17	2	83	11.5
extract_keyword	29	20	7	17	10	2	83	9.79
deep_learn	12	3	8	16	37	9	76	11.99
method_us	12	15	12	17	22	7	78	5.12
phrase_base	39	10	26	7	1	1	83	15.31
document_corpu	33	12	8	15	10	6	78	9.82
inform_knowledg	19	30	8	14	12	1	83	9.9
classifi_text	16	16	13	20	16	3	81	5.83
word_extract	11	33	14	9	13	4	80	9.96
word_count	10	15	8	32	12	7	77	9.27
retriev_inform	32	20	15	9	6	1	82	11.13
list_word	28	11	6	25	12	1	82	10.61
structur_data	23	13	30	3	13	1	82	11.21
input_data	16	8	10	28	20	1	82	9.56
appear_document	15	21	8	26	11	2	81	8.75
train_classifi	13	18	8	25	14	5	78	7.14
sentenc_sentenc	12	39	11	8	12	1	82	13.01
classifi_us	10	16	7	8	39	3	80	13.04
text_us	9	16	15	16	23	4	79	6.55
combin_featur	4	33	2	34	8	2	81	15.39
classifi_train	21	11	5	31	12	2	80	10.73
approach_us	19	21	8	19	9	6	76	6.68
document_queri	16	11	5	34	13	3	79	11.09
classif_problem	14	16	6	21	22	3	79	7.76
object_function	9	2	11	5	54	1	81	20.14
text_corpu	6	16	5	21	33	1	81	12.06
process_inform	4	26	29	13	8	2	80	11.4
document_base	21	12	18	15	10	5	76	5.75
infor_mation	13	21	23	14	7	3	78	7.74
level_featur	13	6	28	8	25	1	80	10.82
system_perform	12	13	5	22	21	8	73	6.83
program_languag	11	5	3	42	19	1	80	15.41
system_applic	8	7	9	5	51	1	80	18.59
queri_expans	3	8	1	16	2	51	30	19.19
word_order	18	18	12	16	13	3	77	5.65
algorithm_algorithm	17	13	16	17	12	5	75	4.59
text_base	14	15	8	16	24	3	77	7.2
pattern_mine	13	23	32	3	3	6	74	11.91

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
issn_volum	10	19	25	10	10	6	74	7.15
remov_stem	10	23	18	12	13	4	76	6.56
evalu_measur	12	11	6	22	26	2	77	9.22
artifici_neural	5	18	18	6	31	1	78	11.23
document_featur	28	7	12	12	17	2	76	8.94
view_project	12	22	14	14	14	2	76	6.42
model_evalu	6	3	5	30	24	10	68	11.24
media_text	1	43	24	3	5	2	76	17.03
euclidean_distanc	18	9	20	12	14	4	73	5.88
contain_term	15	20	13	19	6	4	73	6.62
algorithm_perform	11	9	11	22	20	4	73	6.85
extract_us	9	8	17	20	20	3	74	7.14
colleg_engin	6	25	18	10	17	1	76	8.8
build_model	5	18	3	8	42	1	76	15.48
linguist_analysi	2	21	44	4	3	3	74	16.89
engin_scienc	1	18	17	12	27	1	75	10.25
contain_document	19	11	16	13	13	3	72	5.43
singl_document	15	19	8	25	7	1	74	8.8
data_structur	12	10	19	19	13	2	73	6.35
system_design	9	11	13	14	27	1	74	8.48
soft_comput	7	9	21	12	25	1	74	8.98
volum_number	1	19	21	9	24	1	74	10.23
relev_inform	19	11	28	10	5	1	73	9.79
process_document	18	14	18	14	8	2	72	6.25
text_featur	16	10	14	7	17	10	64	3.93
cluster_process	13	9	15	20	16	1	73	6.62
word_us	12	25	8	20	7	2	72	8.64
classif_process	11	21	22	8	9	3	71	7.58
word_term	6	8	15	27	16	2	72	8.96
perform_test	5	1	3	16	48	1	73	18.35
input_output	20	13	15	13	11	1	72	6.27
user_request	16	18	16	13	7	3	70	5.91
word_embed	15	3	1	24	3	27	46	11.5
random_field	10	8	8	38	4	5	68	12.84
featur_base	9	26	9	16	12	1	72	8.38
public_http	9	17	11	18	17	1	72	6.59
word_topic	9	16	10	14	6	18	55	4.58
number_iter	8	3	12	12	34	4	69	11.36

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
unigram_bigram	3	16	10	10	29	5	68	9.41
allow_user	17	4	15	14	19	3	69	6.81
design_implement	15	6	14	11	22	4	68	6.54
content_base	14	22	9	21	5	1	71	8.53
semant_index	12	15	11	27	6	1	71	8.85
cluster_text	8	24	15	13	11	1	71	7.64
mathemat_model	3	18	3	23	24	1	71	10.81
document_process	18	16	12	12	11	2	69	5.53
algorithm_us	15	20	6	16	11	3	68	6.43
period_time	15	2	19	8	25	2	69	9.41
word_sens	12	14	17	11	14	3	68	4.79
content_page	10	29	11	11	9	1	70	9.22
wide_rang	9	13	10	15	23	1	70	7.28
comput_time	6	8	28	15	11	3	68	8.93
autom_text	30	11	11	11	6	1	69	9.83
document_topic	15	14	3	17	10	11	59	4.97
syntact_semant	14	19	10	2	24	1	69	9.18
method_text	13	14	17	14	11	1	69	5.57
unsupervis_learn	13	14	15	12	12	4	66	3.93
discoveri_data	12	12	26	10	6	4	66	7.74
informa_tion	11	5	15	31	3	5	65	10.48
data_text	10	11	14	16	16	3	67	4.93
topic_document	9	10	4	14	17	16	54	4.93
emot_recognit	8	1	1	47	3	10	60	17.7
perform_us	6	15	8	12	26	3	67	8.21
base_word	28	14	8	15	2	2	67	9.83
vector_represent	16	25	1	14	5	8	61	8.64
us_featur	12	12	10	15	18	2	67	5.43
measur_similar	11	21	17	12	6	2	67	6.95
corpu_base	9	15	11	21	10	3	66	6.06
text_word	6	23	10	16	13	1	68	7.71
graph_base	5	39	9	6	7	3	66	13.62
semant_featur	4	8	19	27	8	3	66	9.48
confus_matrix	3	15	10	21	13	7	62	6.32
emot_classif	28	4	5	3	23	5	63	11.11
network_analysi	25	10	10	15	7	1	67	8.12
unstructur_text	17	9	15	10	11	6	62	4.03
origin_document	14	6	20	12	14	2	66	6.41

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
proc_conf	13	27	10	6	11	1	67	8.78
sentenc_word	12	28	5	12	9	2	66	9.07
distanc_measur	9	9	20	6	22	2	66	7.94
berlin_heidelberg	5	14	7	10	27	5	63	8.41
measur_precis	3	8	6	6	44	1	67	16.19
similar_sentenc	3	18	13	23	2	9	59	8.31
represent_document	19	12	17	11	5	3	64	6.34
train_corpu	8	9	5	30	13	2	65	9.95
uniqu_word	7	17	6	28	3	6	61	9.54
data_model	4	4	36	14	8	1	66	12.97
hierarch_cluster	20	9	16	5	9	7	59	5.76
probabilist_model	14	16	8	20	7	1	65	6.93
evalu_perform	11	13	13	14	11	4	62	3.63
model_perform	11	6	3	25	12	9	57	7.62
word_level	11	33	6	3	12	1	65	11.61
pattern_base	9	19	17	12	6	3	63	6.23
classif_techniqu	8	6	13	6	30	3	63	9.88
calcul_us	7	18	7	12	20	2	64	6.99
data_sourc	6	9	17	7	26	1	65	9.01
occurr_word	6	16	7	20	16	1	65	7.38
commun_technolog	24	6	3	21	10	1	64	9.58
stem_arab	10	20	12	10	12	1	64	6.08
inform_commun	8	11	4	24	17	1	64	8.52
taken_account	6	10	16	10	22	1	64	7.39
fals_neg	3	13	6	17	5	21	44	7.28
tweet_contain	1	13	4	26	19	2	63	10.23
occurr_term	23	17	9	9	5	1	63	8.04
base_cluster	18	10	17	8	7	4	60	5.65
reduc_dimension	15	10	14	12	9	4	60	3.98
system_evalu	13	4	12	25	8	2	62	8.24
word_given	13	10	2	25	12	2	62	8.52
mine_text	11	10	19	12	10	2	62	5.43
dataset_dataset	9	9	16	17	10	3	61	5.16
process_time	9	15	2	15	6	17	47	5.96
time_period	8	10	23	7	14	2	62	7.2
automat_extract	6	17	16	5	18	2	62	7.09
dataset_consist	6	15	10	21	5	7	57	6.22
file_contain	4	11	9	27	12	1	63	9.05

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
test_perform	3	8	3	8	38	4	60	13.59
share_task	2	32	4	12	9	5	59	11.06
document_train	19	7	19	6	11	1	62	7.31
word_cluster	17	23	7	12	3	1	62	8.48
user_gener	10	14	8	6	23	2	61	7.31
base_semant	8	11	8	23	7	6	57	6.35
statist_analysi	6	12	7	17	20	1	62	7.18
transact_knowledg	4	29	10	8	11	1	62	9.81
model_built	3	3	7	15	34	1	62	12.55
twitter_user	2	2	6	23	27	3	60	11.4
model_document	23	8	13	9	7	2	60	7.15
retriev_relev	21	11	8	12	2	8	54	6.28
gram_gram	20	5	11	4	17	5	57	6.86
speech_recognit	5	29	4	17	6	1	61	10.65
linear_regress	1	2	1	21	33	4	58	13.5
data_point	24	7	12	8	7	3	58	7.36
common_word	19	10	7	10	14	1	60	6.11
signal_process	14	30	3	5	8	1	60	10.72
calcul_similar	12	21	6	10	9	3	58	6.18
system_system	11	9	13	11	15	2	59	4.49
model_data	7	15	6	13	19	1	60	6.65
standard_arab	6	9	1	6	38	1	60	13.99
perform_system	4	8	14	24	10	1	60	8.16
valu_calcul	1	19	9	16	15	1	60	7.81
cluster_similar	20	11	17	7	3	2	58	7.38
classif_text	15	11	8	11	14	1	59	5.06
frequenc_document	15	22	8	8	3	4	56	7.24
perform_evalu	12	18	6	17	4	3	57	6.6
precis_measur	12	6	7	15	17	3	57	5.51
algorithm_appli	10	14	14	8	13	1	59	5.02
text_classifi	10	16	9	15	9	1	59	5.37
model_predict	6	1	5	13	26	9	51	8.81
analysi_method	5	16	9	7	19	4	56	6.13
algo_rithm	4	9	20	21	4	2	58	8.46
distribut_topic	2	13	4	25	7	9	51	8.29
classifi_document	16	8	16	8	9	2	57	5.38
text_collect	16	8	21	10	3	1	58	7.63
extract_term	13	12	4	22	5	3	56	7.31

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
repres_vector	13	9	5	11	18	3	56	5.46
word_categori	13	2	24	17	2	1	58	9.62
accuraci_precis	11	3	7	28	9	1	58	9.64
punctuat_mark	9	19	12	8	10	1	58	5.85
test_set	9	4	3	23	15	5	54	7.81
data_extract	8	14	9	7	19	2	57	5.91
comput_technolog	7	10	5	9	27	1	58	9
word_represent	6	18	12	17	3	3	56	6.79
tabl_perform	5	7	2	9	32	4	55	11.13
neg_exampl	3	10	2	13	30	1	58	10.98
featur_word	2	19	9	21	6	2	57	8.33
rule_mine	2	4	20	14	15	4	55	7.44
test_test	2	5	2	13	33	4	55	12.06
us_porter	31	5	5	5	6	6	52	10.46
content_document	15	13	21	5	3	1	57	7.87
word_gener	15	10	9	16	7	1	57	5.5
document_model	7	3	9	28	9	2	56	9.46
gener_word	7	6	6	24	12	3	55	7.61
featur_valu	6	24	3	20	3	2	56	9.73
highest_accuraci	6	19	2	3	27	1	57	10.76
mine_method	6	12	17	8	10	5	53	4.41
develop_model	4	8	7	7	24	8	50	7.17
lexic_databas	4	17	11	18	7	1	57	6.92
regress_model	4	7	4	25	14	4	54	8.45
tweet_user	1	5	3	9	25	15	43	9
class_class	17	10	5	10	11	4	53	4.68
classif_cluster	13	16	7	16	4	1	56	6.41
featur_text	13	9	12	5	14	4	53	4.23
stem_stop	12	12	4	12	16	1	56	5.72
process_system	11	12	9	8	15	2	55	4.42
process_extract	10	15	14	6	8	4	53	4.37
develop_system	9	10	8	13	14	3	54	3.94
implement_us	9	10	5	10	19	4	53	5.32
request_enhanc	9	18	11	11	7	1	56	5.58
dataset_contain	8	7	12	17	11	2	55	5.09
extract_word	8	16	5	11	15	2	55	5.54
model_featur	6	6	2	21	19	3	54	8.31
comput_vision	4	12	1	22	15	3	54	8.22

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
us_classifi	4	9	2	6	35	1	56	12.82
train_exampl	21	10	3	10	11	1	55	7.06
evalu_system	16	3	4	11	7	15	41	5.54
word_contain	15	8	4	21	6	2	54	7.26
method_appli	14	12	1	12	16	1	55	6.62
extract_method	13	4	11	7	20	1	55	6.83
token_token	12	14	8	9	10	3	53	3.78
repres_text	11	16	3	7	17	2	54	6.41
retriev_text	11	12	14	15	3	1	55	5.89
discuss_stat	9	17	11	11	7	1	55	5.28
enhanc_download	9	17	11	11	7	1	55	5.28
public_stat	9	17	11	11	7	1	55	5.28
view_public	9	17	11	11	7	1	55	5.28
word_dictionari	7	16	4	18	7	4	52	6.12
cluster_number	5	11	5	8	26	1	55	8.82
word_repres	4	21	13	7	4	7	49	6.59
correl_coeffici	3	8	6	31	6	2	54	10.84
statist_machin	21	7	11	3	12	1	54	7.22
porter_algorithm	15	11	7	9	11	2	53	4.4
twitter_data	12	8	10	5	18	2	53	5.6
mine_algorithm	10	14	11	7	12	1	54	4.62
extract_document	9	21	9	10	4	2	53	6.62
sentenc_text	9	15	6	14	9	2	53	4.88
semant_relationship	8	28	10	5	2	2	53	9.77
techniqu_text	7	6	14	5	21	2	53	7.03
make_process	6	2	12	13	21	1	54	7.63
human_resourc	1	1	8	15	28	2	53	10.72
qualiti_cluster	18	5	12	3	4	12	42	5.93
relev_featur	16	9	11	6	8	4	50	4.2
manual_label	15	10	6	21	1	1	53	7.97
represent_model	14	14	7	4	13	2	52	5.37
word_consid	14	10	4	18	5	3	51	6.07
publicli_avail	12	9	4	15	11	3	51	4.69
automat_index	11	35	3	3	1	1	53	13.27
springer_verlag	11	15	10	1	12	5	49	5.1
distribut_word	10	13	4	11	6	10	44	3.35
keyword_text	10	15	10	13	5	1	53	5.18
word_similar	10	19	11	10	2	2	52	6.39

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
root_stem	7	20	20	4	2	1	53	8.76
measur_accuraci	6	14	4	14	14	2	52	5.62
cluster_approach	21	8	9	5	4	6	47	6.24
classif_approach	15	4	7	17	9	1	52	6.21
interest_includ	14	20	7	7	4	1	52	6.97
inform_document	13	15	10	10	3	2	51	5.27
mine_inform	12	12	14	7	6	2	51	4.58
document_index	11	15	6	12	6	3	50	4.54
featur_document	11	12	9	6	14	1	52	4.71
model_repres	11	12	8	8	13	1	52	4.36
neg_word	11	8	15	14	4	1	52	5.56
sequenc_word	9	11	10	5	16	2	51	4.88
perform_model	7	6	2	23	12	3	50	7.78
sens_disambigu	6	9	15	8	11	4	49	3.87
data_base	4	14	11	11	11	2	51	4.71
model_select	4	8	2	16	8	15	38	5.67
search_space	4	14	6	9	17	3	50	5.64
tweet_tweet	3	24	3	15	4	4	49	8.75
predict_stock	1	1	2	2	46	1	52	18.21
classifi_base	14	7	7	10	13	1	51	4.76
select_text	14	10	13	5	9	1	51	4.93
bay_algorithm	13	5	9	4	20	1	51	6.95
represent_text	13	7	14	12	5	1	51	5.16
resourc_evalu	13	15	6	5	12	1	51	5.47
dimension_space	11	8	6	15	11	1	51	4.84
main_idea	11	7	6	10	15	3	49	4.23
tree_structur	11	7	5	18	10	1	51	5.82
algorithm_cluster	9	14	18	4	4	3	49	6.19
word_stop	9	13	7	13	4	6	46	3.72
measur_measur	8	8	11	6	18	1	51	5.65
extract_sentenc	7	24	6	8	5	2	50	7.79
problem_solv	7	8	6	10	20	1	51	6.31
word_corpu	6	11	2	29	3	1	51	10.6
word_found	5	13	10	16	7	1	51	5.47
base_search	3	4	6	5	5	29	23	10.01
data_store	2	18	12	10	8	2	50	6.15
neg_neutral	2	6	9	2	32	1	51	11.83
issu_march	1	2	23	12	12	2	50	8.66

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
search_algorithm	1	16	6	5	23	1	51	8.91
recal_valu	10	9	4	23	3	2	49	7.82
techniqu_base	9	4	14	8	11	5	46	3.73
data_preprocess	6	6	7	13	17	2	49	5.47
method_perform	6	7	9	5	23	1	50	7.58
obtain_us	6	5	4	15	18	3	48	6.35
statist_model	6	17	4	12	9	3	48	5.32
accuraci_rate	2	4	15	16	13	1	50	6.89
textual_inform	2	25	9	5	9	1	50	8.76
cluster_data	14	10	11	7	5	3	47	4.08
test_collect	12	1	7	25	2	3	47	9.11
semant_inform	11	22	7	4	4	2	48	7.39
assist_professor	10	22	5	6	5	2	48	7.17
weight_word	10	10	8	11	9	2	48	3.27
bayesian_classifi	6	9	8	2	21	4	46	6.71
given_text	6	13	6	22	2	1	49	7.92
word_filter	4	3	4	14	23	2	48	8.41
content_word	15	12	7	11	2	2	47	5.42
execut_time	13	2	16	5	12	1	48	6.31
highest_score	11	7	4	16	9	2	47	5.04
repres_number	9	9	8	15	6	2	47	4.26
analyz_data	7	8	8	1	23	2	47	7.88
model_gener	6	10	3	15	11	4	45	4.62
repres_word	6	15	8	10	4	6	43	3.92
languag_word	5	18	7	10	6	3	46	5.34
topic_word	3	7	9	6	15	9	40	4.02
represent_word	2	23	7	10	3	4	45	7.83
tweet_us	1	10	5	18	14	1	48	7.03
base_algorithm	13	9	7	9	9	1	47	3.95
model_paramet	12	14	2	10	9	1	47	5.33
document_sentenc	11	14	8	12	1	2	46	5.4
content_text	7	10	10	7	12	2	46	3.52
method_automat	7	11	6	4	16	4	44	4.69
user_user	7	5	3	15	16	2	46	6.07
further_process	6	10	8	9	13	2	46	3.74
system_implement	6	9	9	20	3	1	47	6.69
process_perform	5	8	5	16	13	1	47	5.59
springer_berlin	4	11	4	8	17	4	44	5.25

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
accuraci_us	3	7	7	5	25	1	47	8.65
technolog_comput	3	11	14	15	4	1	47	6.07
volum_page	1	2	10	23	10	2	46	8.41
featur_gener	17	8	1	15	4	2	45	6.79
perform_measur	17	6	4	12	4	4	43	5.46
base_analysi	15	9	4	9	8	2	45	4.54
amount_inform	14	9	10	4	8	2	45	4.31
document_level	14	5	9	11	5	3	44	4.22
input_document	12	16	7	5	6	1	46	5.34
sentenc_base	12	10	9	11	3	2	45	4.26
mine_applic	11	12	10	7	5	2	45	3.87
valu_term	11	7	5	7	16	1	46	5.15
word_cloud	11	7	11	8	9	1	46	3.71
root_form	10	13	4	14	2	4	43	5.15
improv_qualiti	8	7	3	3	24	2	45	8.28
societi_inform	8	13	9	11	4	2	45	4.17
us_algorithm	8	12	7	8	11	1	46	3.87
model_develop	7	6	2	6	23	3	44	7.68
previou_studi	6	8	5	9	18	1	46	5.71
posit_word	5	14	15	8	4	1	46	5.64
text_contain	5	7	2	16	15	2	45	6.24
detect_system	4	7	3	5	15	13	34	5
charact_recognit	3	3	4	5	28	4	43	9.91
model_test	2	3	8	7	25	2	45	8.8
frequent_itemset	1	1	2	4	5	34	13	12.92
measur_perform	11	11	1	14	7	2	44	5.28
document_calcul	10	9	11	13	2	1	45	4.97
gibb_sampl	8	10	4	7	14	3	43	4.03
solut_problem	8	9	6	8	13	2	44	3.61
avail_onlin	6	7	5	14	13	1	45	4.97
weight_assign	6	6	8	8	17	1	45	5.24
model_topic	5	12	5	7	8	9	37	2.66
measur_text	2	9	9	16	7	3	43	5.05
help_user	15	8	5	7	8	2	43	4.32
cluster_perform	13	8	5	8	6	5	40	3.02
rank_document	10	3	4	26	1	1	44	9.65
train_sampl	10	5	3	9	16	2	43	5.24
perform_experi	9	7	5	2	18	4	41	5.68

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
previou_step	9	7	9	9	10	1	44	3.33
step_process	8	10	9	4	13	1	44	4.32
time_complex	8	12	13	3	6	3	42	4.32
number_text	7	18	3	2	14	1	44	7.01
us_techniqu	6	4	8	4	18	5	40	5.36
find_similar	5	11	7	17	1	4	41	5.72
correctli_classifi	4	15	5	6	11	4	41	4.51
word_process	4	6	8	11	15	1	44	5.01
languag_arab	3	9	5	10	16	2	43	5.24
type_data	3	5	9	4	23	1	44	8.04
data_avail	2	8	16	5	12	2	43	5.65
mine_data	2	9	9	7	15	3	42	4.72
number_user	1	2	1	35	4	2	43	13.52
extract_system	14	6	9	9	5	1	43	4.41
dimension_vector	13	13	3	11	1	3	41	5.57
learn_text	12	11	5	7	8	1	43	4.03
techniqu_appli	11	4	7	5	14	3	41	4.32
semant_mean	10	11	4	3	5	11	33	3.72
similar_valu	10	12	2	9	6	5	39	3.67
charact_word	9	11	5	15	3	1	43	5.28
cluster_centroid	9	4	1	1	28	1	43	10.6
function_word	7	5	4	7	19	2	42	6.02
user_search	7	24	4	4	4	1	43	8.38
word_number	7	10	6	8	11	2	42	3.2
order_reduc	6	13	9	7	7	2	42	3.61
degre_comput	5	17	6	3	7	6	38	4.93
dimension_data	5	11	12	8	7	1	43	4.03
exist_method	5	10	5	14	6	4	40	3.88
extract_data	5	9	10	11	8	1	43	3.72
vector_word	5	4	4	19	2	10	34	6.31
knowledg_engin	4	7	7	17	8	1	43	5.39
scienc_depart	4	10	12	4	13	1	43	4.97
string_match	4	3	28	3	3	3	41	10.13
main_problem	3	9	11	5	14	2	42	4.76
model_classifi	3	6	2	10	21	2	42	7.37
measur_us	2	10	2	17	11	2	42	6.31
origin_text	2	10	11	15	4	2	42	5.43
statist_inform	20	5	3	8	6	1	42	6.74

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
measur_evalu	9	2	12	7	6	7	36	3.31
find_relev	6	15	10	6	4	2	41	4.67
arab_corpu	5	4	10	8	15	1	42	4.96
system_architectur	5	7	10	7	10	4	39	2.48
assign_weight	4	4	11	13	10	1	42	4.79
mean_text	4	12	4	5	16	2	41	5.53
addit_featur	3	2	1	22	9	6	37	7.83
topic_base	3	28	2	3	5	2	41	10.26
weight_averag	3	19	6	4	10	1	42	6.55
word_token	3	11	8	16	2	3	40	5.56
group_group	2	8	6	18	8	1	42	6.08
process_model	1	5	4	25	7	1	42	9.04
score_score	1	3	3	19	9	8	35	6.59
preprocess_text	13	7	3	8	8	3	39	3.74
algorithm_document	12	5	13	5	6	1	41	4.6
classifi_perform	12	6	5	11	6	2	40	3.79
word_semant	12	12	6	10	1	1	41	5.14
analysi_document	11	7	12	9	2	1	41	4.6
us_term	11	9	6	7	8	1	41	3.41
combin_word	8	13	7	9	4	1	41	4.15
network_base	7	8	7	16	3	1	41	5.18
time_term	6	11	14	7	2	2	40	4.82
gener_topic	5	11	1	15	4	6	36	5.1
improv_effici	5	10	10	6	10	1	41	3.69
data_contain	3	13	4	8	13	1	41	5.18
free_text	3	15	6	11	4	3	39	4.94
linear_combin	1	7	6	23	4	1	41	8.22
system_extract	14	5	7	3	8	4	37	3.97
classifi_test	12	9	1	4	12	3	38	4.79
tech_niqu	11	5	8	10	5	2	39	3.43
us_train	10	6	4	7	12	2	39	3.71
word_common	10	5	5	12	8	1	40	3.97
count_number	9	10	6	5	9	2	39	3.06
evalu_model	9	3	1	15	9	4	37	5.15
experi_perform	9	6	9	3	11	3	38	3.37
classif_base	8	8	4	5	12	4	37	3.13
featur_train	8	8	6	10	7	2	39	2.71
mine_us	8	9	14	5	3	2	39	4.45

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
term_text	8	8	10	4	8	3	38	2.71
model_method	7	7	3	7	11	6	35	2.56
provid_inform	7	7	9	10	7	1	40	3.13
start_point	7	8	12	2	11	1	40	4.54
process_method	6	7	4	8	15	1	40	4.71
textual_document	6	14	5	13	1	2	39	5.49
applic_text	5	9	5	11	9	2	39	3.37
corpu_document	5	6	8	15	4	3	38	4.36
gener_model	5	9	2	18	5	2	39	6.05
group_similar	5	12	5	8	9	2	39	3.54
lexicon_base	5	6	7	2	15	6	35	4.36
valu_document	5	8	4	11	10	3	38	3.31
data_test	3	7	5	12	13	1	40	4.83
word_select	3	12	8	10	6	2	39	3.92
base_topic	1	16	4	8	5	7	34	5.12
human_factor	1	4	24	1	7	4	37	8.7
predefin_categori	22	8	1	4	4	1	39	7.94
classifi_categori	17	7	4	3	7	2	38	5.47
document_total	15	6	7	1	10	1	39	5.39
sentenc_length	12	8	7	5	6	2	38	3.33
word_approach	12	3	11	5	6	3	37	3.93
cluster_qualiti	11	3	16	5	4	1	39	5.68
collect_text	10	4	9	7	8	2	38	3.08
maximum_likelihood	10	9	3	13	3	2	38	4.59
measur_valu	9	4	1	11	13	2	38	5.01
us_support	9	12	4	4	8	3	37	3.56
word_includ	9	8	3	15	4	1	39	5.09
document_consid	8	15	8	5	2	2	38	4.89
empir_studi	8	5	4	10	12	1	39	4.08
system_test	7	9	3	10	10	1	39	3.83
comput_similar	6	11	14	3	1	5	35	4.93
corpu_text	6	6	5	9	13	1	39	4.03
morgan_kaufmann	6	12	8	8	5	1	39	3.67
stem_us	6	9	8	9	5	3	37	2.42
averag_number	5	9	1	19	4	2	38	6.65
frequenc_count	5	6	10	16	2	1	39	5.57
includ_text	5	9	8	9	7	2	38	2.73
techniqu_extract	5	10	6	10	7	2	38	3.08

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
develop_method	4	6	5	7	17	1	39	5.47
given_word	4	13	8	7	6	2	38	3.78
process_reduc	4	14	6	4	10	2	38	4.5
train_us	4	6	2	11	14	3	37	4.8
us_simpl	4	5	5	13	12	1	39	4.76
word_context	4	11	8	12	4	1	39	4.37
wordnet_lexic	4	9	8	13	5	1	39	4.23
emot_categor	3	8	4	5	17	3	37	5.39
represent_us	3	8	6	7	13	3	37	3.72
time_word	3	10	7	17	2	1	39	6.09
word_exampl	3	9	4	14	8	2	38	4.55
issu_issn	2	17	6	12	2	1	39	6.5
posit_fals	1	12	6	6	3	12	28	4.55
user_tweet	1	1	1	3	12	22	18	8.64
weight_approach	18	4	8	4	4	1	38	6.06
index_document	15	9	3	9	1	2	37	5.43
perform_classifi	13	7	3	8	6	2	37	3.94
address_problem	12	5	7	4	9	2	37	3.62
document_rank	10	11	3	13	1	1	38	5.43
pattern_analysi	10	4	9	3	12	1	38	4.42
us_vector	9	3	5	9	11	2	37	3.67
princip_compon	8	6	2	8	14	1	38	4.72
term_number	8	7	6	7	10	1	38	3.02
mine_task	7	10	12	4	5	1	38	4.04
perform_cluster	7	7	6	5	11	3	36	2.66
take_advantag	7	9	3	9	7	4	35	2.51
algorithm_stem	6	5	6	6	12	4	35	2.81
white_space	6	3	7	4	17	2	37	5.47
featur_us	5	2	11	9	7	5	34	3.21
graph_node	4	1	16	9	8	1	38	5.75
weight_calcul	4	4	1	7	22	1	38	7.92
spam_detect	2	30	1	4	1	1	38	11.57
store_databas	2	8	7	10	10	2	37	3.67
mixtur_model	20	5	6	3	2	2	36	6.89
method_evalu	17	2	5	8	4	2	36	5.68
inform_avail	16	7	9	4	1	1	37	5.72
precis_valu	11	5	1	17	2	2	36	6.38
suffix_strip	11	10	4	4	7	2	36	3.61

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
sourc_inform	10	7	4	9	6	2	36	3.01
featur_repres	8	6	2	6	12	4	34	3.44
classifi_featur	7	8	6	8	8	1	37	2.73
process_word	7	9	8	6	6	2	36	2.42
algorithm_develop	6	4	4	12	10	2	36	3.88
main_reason	6	2	5	19	5	1	37	6.5
base_stem	5	8	9	11	4	1	37	3.67
comput_approach	5	10	5	8	9	1	37	3.33
given_queri	5	8	7	10	4	4	34	2.42
perform_algorithm	5	9	5	7	11	1	37	3.5
stopword_remov	5	8	9	12	3	1	37	4.08
inform_word	4	10	5	14	3	2	36	4.68
model_word	3	11	3	17	1	3	35	6.28
optic_charact	2	3	4	5	20	4	34	6.77
scienc_applic	1	4	8	5	18	2	36	6.22
learn_object	21	2	2	2	9	1	36	7.83
automat_evalu	12	1	1	9	10	4	33	4.79
vector_featur	11	7	7	9	2	1	36	3.92
model_compar	10	2	1	11	9	4	33	4.36
term_select	9	4	3	6	11	4	33	3.19
us_gram	8	3	5	4	13	4	33	3.76
user_defin	8	3	12	5	6	3	34	3.43
base_user	7	10	4	7	7	2	35	2.79
index_process	7	14	3	10	1	2	35	5.12
similar_mean	7	4	6	15	4	1	36	4.79
gram_base	6	4	5	12	8	2	35	3.49
sourc_data	6	3	6	12	8	2	35	3.6
text_messag	6	9	3	11	2	6	31	3.43
technolog_volum	5	8	11	7	4	2	35	3.19
analysi_social	4	7	8	8	8	2	35	2.56
base_techniqu	4	11	6	5	9	2	35	3.31
dataset_train	4	5	2	15	8	3	34	4.79
select_algorithm	4	3	17	3	9	1	36	5.95
token_stop	3	8	6	10	6	4	33	2.56
us_wordnet	3	13	8	9	3	1	36	4.58
valu_pair	3	6	14	2	11	1	36	5.27
base_represent	2	17	7	2	5	4	33	5.64
facebook_twitter	2	6	9	5	13	2	35	4.26

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
us_wikipedia	2	13	3	12	2	5	32	5.04
class_number	1	5	4	19	7	1	36	6.71
dimension_featur	16	1	4	1	13	1	35	6.75
extract_techniqu	15	3	4	12	1	1	35	6
model_automat	11	4	4	4	9	4	32	3.16
european_languag	10	4	16	2	3	1	35	5.83
text_repres	10	12	3	6	4	1	35	4.24
comput_network	8	2	4	11	9	2	34	3.85
method_combin	8	6	4	5	12	1	35	3.74
word_match	8	13	3	9	1	2	34	4.73
algorithm_find	7	11	2	6	9	1	35	3.9
data_consist	7	9	3	10	6	1	35	3.46
featur_includ	7	11	3	7	4	4	32	2.97
form_stem	7	8	3	8	7	3	33	2.37
token_process	7	8	5	3	9	4	32	2.37
weight_vector	7	7	1	16	3	2	34	5.51
consist_document	6	10	1	8	10	1	35	4.15
sentenc_structur	6	9	5	3	11	2	34	3.46
system_consist	6	8	5	5	9	3	33	2.19
test_model	6	4	5	12	5	4	32	3.03
analysi_machin	5	3	6	5	15	2	34	4.65
frequenc_weight	5	6	10	1	13	1	35	4.82
measur_calcul	5	6	2	11	9	3	33	3.46
workshop_comput	5	11	4	7	8	1	35	3.46
text_dataset	4	3	2	8	18	1	35	6.36
us_equat	4	18	5	2	6	1	35	6.16
collect_corpu	3	11	1	4	12	5	31	4.47
lexic_featur	3	12	5	9	6	1	35	4
mean_valu	3	13	1	11	6	2	34	4.98
model_extract	3	8	3	5	16	1	35	5.44
perform_analysi	3	5	13	9	5	1	35	4.34
corpu_word	2	4	4	17	8	1	35	5.9
model_system	2	6	3	12	11	2	34	4.52
us_rule	1	7	3	5	14	6	30	4.47
concept_document	16	12	3	2	1	1	34	6.49
catégori_catégori	15	5	6	6	1	2	33	4.96
length_document	12	8	9	4	1	1	34	4.54
north_chapter	11	10	2	8	3	1	34	4.36

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
overal_perform	11	10	2	6	4	2	33	3.92
document_length	10	4	7	11	2	1	34	4.17
cluster_accuraci	9	3	4	8	9	2	33	3.19
good_perform	8	3	3	3	14	4	31	4.45
list_stop	8	7	6	5	7	2	33	2.14
index_html	6	5	3	11	8	2	33	3.31
algorithm_implement	5	7	4	8	10	1	34	3.19
convert_text	5	13	2	7	4	4	31	3.87
word_elimin	5	9	6	8	6	1	34	2.79
improv_text	4	10	5	6	9	1	34	3.31
collect_tweet	3	15	1	10	5	1	34	5.6
count_word	3	5	5	13	6	3	32	3.71
extract_knowledg	3	6	5	11	9	1	34	3.71
statist_signific	3	4	8	9	8	3	32	2.79
emot_text	2	7	9	10	3	4	31	3.31
knowledg_extract	2	6	3	9	14	1	34	4.96
term_queri	2	8	3	3	5	14	21	4.54
semant_evalu	1	5	17	4	5	3	32	5.67
method_extract	12	8	3	5	5	1	33	3.88
overal_accuraci	12	6	1	7	2	6	28	3.93
repres_term	11	8	9	2	1	3	31	4.18
approach_automat	10	9	8	2	4	1	33	3.83
automat_classifi	9	3	6	7	7	2	32	2.66
method_describ	9	4	2	8	10	1	33	3.83
languag_specif	7	11	5	3	6	2	32	3.2
node_repres	7	6	7	6	4	4	30	1.37
topic_text	7	4	15	5	2	1	33	5.05
difficult_task	6	8	3	12	4	1	33	3.93
access_inform	5	2	8	8	10	1	33	3.61
depart_inform	5	5	8	6	8	2	32	2.25
naiv_bayesian	5	7	4	3	9	6	28	2.16
queri_word	5	5	5	8	7	4	30	1.51
caus_effect	4	8	11	1	9	1	33	4.27
comput_base	4	2	10	4	8	6	28	2.94
fine_grain	4	12	10	1	5	2	32	4.41
measur_defin	4	5	9	10	5	1	33	3.33
text_written	4	7	4	7	10	2	32	2.88
distribut_document	3	8	5	6	11	1	33	3.56

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
lower_case	3	3	4	9	13	2	32	4.37
recognit_system	3	11	3	9	7	1	33	3.93
semi_automat	3	15	6	3	6	1	33	4.97
consist_word	2	11	6	9	5	1	33	3.88
context_base	2	8	5	8	10	1	33	3.61
dataset_us	2	5	7	9	9	2	32	3.2
process_phase	2	15	3	3	9	2	32	5.28
us_corpu	1	4	2	6	20	1	33	7.28
word_distribut	1	6	6	7	3	11	23	3.44
term_occurr	16	5	2	1	8	1	32	5.82
method_cluster	11	6	5	3	4	4	29	2.88
token_text	11	5	8	3	4	2	31	3.39
compon_analysi	10	6	2	3	11	1	32	4.23
gener_term	10	11	2	4	3	3	30	3.94
semant_structur	10	11	2	5	4	1	32	4.14
stem_reduc	10	8	2	7	5	1	32	3.51
term_accuraci	10	5	5	5	7	1	32	2.95
cluster_word	9	5	7	7	2	3	30	2.66
document_given	9	10	6	5	2	1	32	3.62
system_text	9	6	8	6	2	2	31	2.95
text_understand	9	3	7	7	6	1	32	2.95
us_mean	9	6	4	8	5	1	32	2.88
document_extract	8	6	6	6	5	2	31	1.97
frequenc_calcul	8	10	4	5	4	2	31	2.95
document_group	6	7	4	7	3	6	27	1.64
domain_knowledg	6	4	13	7	2	1	32	4.32
gener_content	6	6	2	3	15	1	32	5.09
learn_data	6	8	6	2	6	5	28	1.97
retriev_base	6	4	5	13	4	1	32	4.04
algorithm_mean	5	5	3	5	10	5	28	2.35
approach_perform	5	6	6	8	6	2	31	1.97
model_approach	5	2	3	12	9	2	31	4.14
network_us	5	3	4	5	14	2	31	4.32
gram_word	4	1	14	10	3	1	32	5.32
model_combin	4	6	2	5	8	8	25	2.35
stemmer_algorithm	4	6	7	6	7	3	30	1.64
valu_paramet	4	5	3	6	14	1	32	4.51
valu_word	4	5	8	2	13	1	32	4.42

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
accuraci_tabl	3	6	5	11	7	1	32	3.45
assign_word	3	13	2	8	4	3	30	4.23
base_measur	3	4	11	8	4	3	30	3.27
process_approach	3	3	3	4	19	1	32	6.69
us_latent	3	18	1	5	3	3	30	6.25
gener_algorithm	2	3	7	18	2	1	32	6.47
preprocess_techniqu	2	7	3	2	16	3	30	5.47
rule_rule	2	2	4	10	14	1	32	5.28
level_text	1	18	5	3	5	1	32	6.38
process_base	1	9	3	5	13	2	31	4.64
relev_queri	13	5	1	7	3	3	29	4.27
document_test	12	4	3	6	5	2	30	3.56
document_accord	11	10	3	3	4	1	31	4.13
order_evalu	11	4	7	2	5	3	29	3.27
base_learn	9	4	1	3	10	5	27	3.5
algorithm_suffix	8	8	5	6	4	1	31	2.66
approach_featur	8	1	5	14	3	1	31	5.01
time_process	8	3	2	5	13	1	31	4.5
equal_number	7	5	7	7	5	1	31	2.34
improv_cluster	7	4	8	3	9	1	31	3.14
classif_document	6	8	5	6	6	1	31	2.34
gener_process	6	6	3	9	7	1	31	2.88
jordan_latent	6	8	4	9	4	1	31	2.94
label_train	6	8	2	12	2	2	30	4.13
model_describ	6	7	3	6	7	3	29	1.86
us_topic	6	2	1	14	3	6	26	4.72
base_machin	5	1	6	6	12	2	30	3.88
frequenc_number	5	6	6	7	6	2	30	1.75
process_includ	5	9	4	7	6	1	31	2.73
word_assign	5	9	6	7	2	3	29	2.58
automat_classif	4	5	1	5	16	1	31	5.54
calcul_term	4	5	4	8	7	4	28	1.75
signific_improv	4	11	3	4	7	3	29	3.14
stage_process	4	12	4	3	8	1	31	3.98
valu_indic	4	3	9	6	6	4	28	2.16
analysi_tool	3	4	6	10	6	3	29	2.66
gener_method	3	16	2	2	3	6	26	5.43
vector_us	3	7	1	11	5	5	27	3.44

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
origin_data	2	6	8	3	11	2	30	3.67
comput_secur	1	2	2	7	19	1	31	7.06
engin_depart	1	7	4	5	8	7	25	2.58
frequent_item	1	4	11	14	1	1	31	5.75
http_github	1	3	1	15	9	3	29	5.57
increas_perform	1	3	5	7	12	4	28	3.83
occurr_document	11	6	6	2	5	1	30	3.54
similar_cluster	10	2	3	7	5	4	27	2.93
studi_featur	9	5	2	5	9	1	30	3.37
token_stem	8	6	1	13	1	2	29	4.79
us_weight	8	2	4	7	8	2	29	2.86
word_reduc	8	6	3	8	4	2	29	2.56
base_number	7	4	4	6	9	1	30	2.79
data_includ	7	6	6	3	7	2	29	2.14
dataset_collect	7	4	4	11	4	1	30	3.43
find_word	7	9	4	6	4	1	30	2.79
learn_train	7	7	6	4	1	6	25	2.32
reduc_time	7	5	3	4	10	2	29	2.93
weight_document	7	5	11	5	2	1	30	3.6
word_collect	7	5	6	4	7	2	29	1.94
corpu_train	6	1	2	13	8	1	30	4.79
learn_system	6	3	4	3	14	1	30	4.62
accuraci_classif	5	10	8	2	5	1	30	3.43
algorithm_compar	5	5	5	9	6	1	30	2.56
base_form	5	7	7	8	2	2	29	2.64
contain_text	5	8	5	8	4	1	30	2.64
dataset_experi	5	9	4	3	8	2	29	2.79
pair_word	5	11	1	9	1	4	27	4.12
approach_combin	4	3	1	17	4	2	29	5.91
includ_word	4	8	4	8	6	1	30	2.71
problem_text	4	4	12	7	3	1	30	3.87
reduct_techniqu	4	6	10	3	7	1	30	3.19
remov_punctuat	4	3	7	4	12	1	30	3.87
score_system	4	2	5	7	2	11	20	3.43
select_document	4	10	5	7	3	2	29	2.93
type_featur	4	10	2	11	3	1	30	4.26
us_model	4	4	2	4	15	2	29	4.92
mobil_phone	3	3	1	12	6	6	25	3.87

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
select_relev	3	4	9	2	2	11	20	3.87
system_data	3	15	1	5	6	1	30	5.23
gener_us	2	5	9	5	9	1	30	3.37
order_extract	2	11	6	6	5	1	30	3.54
perfor_manc	2	8	5	10	4	2	29	3.25
recal_recal	2	21	5	1	1	1	30	7.91
rule_extract	2	1	12	2	13	1	30	5.71
structur_text	2	8	5	5	7	4	27	2.14
word_train	2	2	6	13	6	2	29	4.31
combin_model	1	5	1	4	18	2	29	6.49
data_classif	1	4	3	7	15	1	30	5.31
time_featur	12	3	8	2	4	1	29	4.2
gener_categori	10	2	10	4	3	1	29	4
model_term	10	8	4	2	5	1	29	3.46
probabilist_latent	10	3	6	4	4	3	27	2.68
search_word	10	2	5	6	6	1	29	3.22
order_word	9	3	3	8	6	1	29	3.16
predict_class	8	5	3	2	10	2	28	3.35
base_applic	7	8	2	2	10	1	29	3.79
bay_classif	7	1	10	4	6	2	28	3.35
binari_classif	7	3	2	15	2	1	29	5.33
learn_inform	7	8	2	3	9	1	29	3.41
note_comput	7	10	4	3	5	1	29	3.16
number_class	7	7	4	7	3	2	28	2.28
perform_inform	7	2	10	6	3	2	28	3.22
techniqu_find	7	8	5	5	4	1	29	2.45
main_step	6	10	4	1	8	1	29	3.69
make_difficult	6	5	4	9	5	1	29	2.61
servic_servic	6	1	2	4	6	11	19	3.58
method_classif	5	4	2	6	10	3	27	2.83
model_latent	5	6	1	11	3	4	26	3.41
model_process	5	6	2	4	12	1	29	3.9
statist_measur	5	10	2	8	2	3	27	3.35
stem_method	5	8	6	6	4	1	29	2.37
topic_gener	5	6	2	13	3	1	29	4.34
tradit_approach	5	4	3	5	12	1	29	3.74
data_format	4	8	6	5	4	3	27	1.79
featur_term	4	3	7	5	9	2	28	2.61

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
posit_class	4	3	1	17	4	1	29	6.03
score_function	4	4	2	13	2	5	25	4.1
term_precis	4	4	2	15	3	2	28	4.98
total_word	4	9	11	1	4	1	29	4.15
divid_number	3	1	6	6	11	3	27	3.52
present_model	3	1	3	1	19	3	27	6.93
word_group	3	2	7	16	1	1	29	5.83
approach_develop	2	3	6	5	13	1	29	4.34
compar_word	2	15	4	4	2	3	27	4.98
find_optim	2	4	2	11	10	1	29	4.38
further_improv	2	5	5	15	1	2	28	5.18
probabl_word	2	9	5	11	2	1	29	4.15
proce_ing	2	6	8	10	3	1	29	3.58
data_form	1	4	4	6	14	1	29	4.82
neg_sentiment	1	5	4	4	13	3	27	4.15
servic_orient	1	1	1	1	7	19	11	7.27
cluster_gener	10	5	5	4	1	4	25	2.93
train_phase	10	2	1	7	6	3	26	3.43
cluster_mean	8	4	7	6	3	1	28	2.64
document_set	8	1	2	3	10	5	24	3.54
file_file	7	3	1	5	11	2	27	3.71
inform_sourc	7	8	7	4	2	1	28	2.93
neighbor_algorithm	7	9	2	6	4	1	28	3.06
preprocess_document	7	6	5	5	3	3	26	1.6
structur_inform	6	8	5	3	4	3	26	1.94
us_approach	6	4	4	5	9	1	28	2.64
dataset_evalu	5	5	1	11	6	1	28	3.71
mine_pattern	5	8	9	3	3	1	28	3.13
model_user	5	2	4	2	12	4	25	3.71
model_vector	5	3	5	8	3	5	24	1.83
size_data	5	5	4	3	9	3	26	2.23
struc_ture	5	11	7	3	1	2	27	3.71
calcul_number	4	8	4	4	6	3	26	1.83
number_charact	4	9	1	9	5	1	28	3.6
system_support	4	8	3	6	7	1	28	2.64
us_combin	4	6	3	5	10	1	28	3.06
user_interact	4	4	5	1	11	4	25	3.31
data_represent	3	9	6	2	8	1	28	3.31

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
experi_evalu	3	2	3	5	10	6	23	2.93
gener_purpos	3	9	2	9	5	1	28	3.49
linguist_human	3	5	3	11	5	2	27	3.25
tech_nologi	3	8	5	5	7	1	28	2.56
word_frequent	3	6	3	10	4	3	26	2.79
automat_process	2	11	8	2	4	2	27	3.82
remov_prefix	2	7	5	9	5	1	28	2.99
select_word	2	8	6	6	6	1	28	2.71
us_naïv	2	1	5	1	19	1	28	7.11
correct_word	1	1	1	23	2	1	28	8.91
perform_poorli	1	6	3	11	5	3	26	3.49
type_type	16	4	2	3	2	1	27	5.65
retriev_perform	14	2	1	3	3	5	23	4.76
effect_featur	12	7	2	2	4	1	27	4.18
data_gather	11	3	3	3	7	1	27	3.67
inform_filter	10	5	5	5	2	1	27	3.14
overcom_problem	10	3	3	2	9	1	27	3.83
method_arab	9	1	7	7	3	1	27	3.44
reduc_size	8	3	3	5	7	2	26	2.42
stem_techniqu	8	6	5	3	3	3	25	2.07
us_document	8	6	3	2	5	4	24	2.16
import_word	7	3	1	7	4	6	22	2.42
perform_featur	7	4	6	3	7	1	27	2.42
approach_classifi	6	8	2	8	3	1	27	3.08
perform_document	6	1	3	9	6	3	25	2.88
algorithm_data	5	3	6	4	9	1	27	2.73
cluster_group	5	2	7	5	8	1	27	2.73
estim_probabl	5	3	4	7	8	1	27	2.58
given_topic	5	5	7	8	2	1	27	2.73
model_implement	5	3	1	6	12	1	27	4.13
order_achiev	5	4	3	8	7	1	27	2.58
vector_model	5	4	5	5	6	3	25	1.03
inform_data	4	5	6	7	5	1	27	2.07
total_document	4	4	8	4	6	2	26	2.07
document_comput	3	11	6	3	2	3	25	3.39
algorithm_test	2	6	2	11	6	1	27	3.78
fuzzi_set	2	7	1	11	1	6	22	4.03
system_process	2	9	4	4	8	1	27	3.2

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
term_semant	2	9	6	4	4	3	25	2.5
token_part	2	4	4	13	4	1	27	4.27
train_train	2	4	3	12	6	1	27	3.98
tree_algorithm	2	6	6	4	9	1	27	2.94
detect_us	1	6	2	5	10	4	24	3.2
help_identifi	1	6	2	4	12	3	25	3.98
input_word	1	6	7	9	2	3	25	3.14
contain_number	13	4	2	5	1	2	25	4.42
group_document	11	2	6	5	2	1	26	3.73
approach_analyz	9	4	5	7	1	1	26	3.21
method_consid	8	1	5	2	10	1	26	3.83
document_user	7	5	3	7	2	3	24	2.17
languag_base	7	7	3	6	3	1	26	2.51
commun_engin	6	6	3	5	6	1	26	2.07
corpu_number	6	8	4	3	3	3	24	2.07
perform_term	6	8	7	3	1	2	25	2.88
collect_word	5	7	4	5	4	2	25	1.64
detail_descript	5	8	2	7	4	1	26	2.74
inform_us	5	8	2	5	6	1	26	2.59
tree_classifi	5	6	5	4	6	1	26	1.87
word_exist	5	2	9	5	4	2	25	2.59
analysi_opinion	4	13	3	1	3	3	24	4.28
effect_us	4	4	7	3	8	1	26	2.59
method_measur	4	8	4	9	1	1	26	3.39
paramet_valu	4	6	1	5	9	2	25	2.88
supervis_unsupervis	4	6	1	8	7	1	26	3.02
text_consid	4	8	2	8	4	1	26	2.95
averag_valu	3	2	6	5	8	3	24	2.26
bay_theorem	3	2	4	7	9	2	25	2.88
evalu_classifi	3	2	2	14	5	1	26	4.85
pattern_gener	3	13	3	2	5	1	26	4.37
perform_improv	3	7	1	8	4	4	23	2.59
preprocess_data	3	2	3	12	4	3	24	3.73
test_system	3	1	3	3	16	1	26	5.72
word_search	3	9	6	5	2	2	25	2.74
faculti_scienc	2	8	6	2	2	7	20	2.81
form_us	2	3	7	9	5	1	26	3.08
linguist_resourc	2	4	13	5	1	2	25	4.42

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
semant_network	2	7	4	5	2	7	20	2.26
variou_featur	2	6	4	8	5	2	25	2.35
written_text	2	2	4	14	4	1	26	4.81
categori_word	1	10	10	1	4	1	26	4.42
context_awar	1	4	1	11	8	2	25	4.14
extract_tweet	1	3	3	16	3	1	26	5.72
order_logic	1	1	2	7	14	2	25	5.17
select_term	1	10	10	2	3	1	26	4.32
simpl_word	1	5	2	16	1	2	25	5.82
appear_frequent	8	2	4	5	6	1	25	2.58
method_select	8	2	3	6	6	1	25	2.73
modern_inform	8	6	1	5	5	1	25	2.8
term_gener	8	4	7	4	1	2	24	2.73
evalu_evalu	7	2	4	6	6	1	25	2.42
method_improv	7	4	1	4	9	1	25	3.2
model_defin	7	1	1	5	11	1	25	4.13
multinomi_distribut	7	6	3	3	2	5	21	1.97
size_train	7	8	1	4	5	1	25	2.94
specif_topic	7	8	3	3	2	3	23	2.5
approach_cluster	6	3	8	1	3	5	21	2.5
describ_detail	6	3	5	9	2	1	25	2.94
document_thu	6	7	2	5	4	2	24	2.07
gram_model	6	2	6	6	5	1	25	2.25
train_time	6	3	3	5	7	2	24	1.97
convert_word	5	4	1	13	1	2	24	4.55
divid_total	5	2	6	5	5	3	23	1.51
improv_precis	5	6	5	5	3	2	24	1.51
document_order	4	5	9	5	2	1	25	2.8
gram_featur	4	7	8	4	1	2	24	2.73
main_featur	4	1	8	9	3	1	25	3.44
mine_machin	4	8	3	5	4	2	24	2.07
repr_sent	4	3	8	9	1	1	25	3.44
test_evalu	4	4	2	7	6	3	23	1.86
websit_http	4	2	1	5	13	1	25	4.55
calcul_frequenc	3	4	4	6	8	1	25	2.42
comput_semant	3	7	3	8	2	3	23	2.5
subset_featur	3	3	5	2	11	2	24	3.44
system_arab	3	7	7	2	6	1	25	2.66

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
algorithm_predict	2	2	3	6	11	2	24	3.61
gener_data	2	4	6	4	9	1	25	2.88
mine_natur	2	4	7	3	8	2	24	2.58
multi_label	2	8	3	3	7	3	23	2.5
node_graph	2	4	14	3	2	1	25	4.84
word_test	2	5	2	8	6	3	23	2.42
design_model	1	2	1	5	16	1	25	5.92
further_develop	1	10	3	4	7	1	25	3.56
model_construct	1	6	4	2	11	2	24	3.72
sampl_data	1	3	2	1	16	3	23	5.79
salton_bucklei	9	3	4	5	2	2	23	2.64
applic_develop	8	1	3	2	10	1	24	3.87
automat_document	8	8	4	3	1	1	24	3.19
document_avail	7	2	7	7	1	1	24	3.13
model_consid	7	3	3	4	6	2	23	1.94
stem_step	7	5	3	1	4	5	20	2.04
arxiv_preprint	6	2	4	2	7	4	21	2.04
classifi_classif	6	7	3	1	6	2	23	2.48
classifi_support	6	4	4	5	5	1	24	1.72
mean_document	5	4	4	5	6	1	24	1.72
method_comput	5	11	1	4	1	3	22	3.71
technolog_issn	5	2	5	8	4	1	24	2.48
appear_time	4	3	7	9	1	1	24	3.25
auto_matic	4	5	4	5	6	1	24	1.72
captur_semant	4	8	1	9	1	2	23	3.54
linguist_structur	4	8	2	2	2	7	18	2.71
perform_base	4	5	2	3	8	3	22	2.14
word_refer	4	5	3	9	3	1	24	2.71
data_obtain	3	6	6	1	7	2	23	2.48
describ_system	3	5	4	9	2	2	23	2.64
direct_graph	3	2	9	5	3	3	22	2.56
help_improv	3	3	3	7	7	2	23	2.23
linear_model	3	6	5	7	3	1	24	2.23
model_provid	3	7	2	5	6	2	23	2.14
multipl_word	3	9	5	6	1	1	24	3.13
probabl_document	3	1	12	3	3	3	22	3.92
topic_interest	3	1	15	3	1	2	23	5.38
word_total	3	5	8	4	4	1	24	2.32

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
accuraci_obtain	2	8	5	3	4	3	22	2.14
class_classifi	2	3	2	11	6	1	24	3.76
current_state	2	5	1	7	9	1	24	3.37
experi_experi	2	1	5	5	11	1	24	3.82
mathemat_comput	2	5	10	2	5	1	24	3.31
measur_cosin	2	11	4	2	4	2	23	3.49
messag_servic	2	3	1	2	16	1	24	5.85
similar_text	2	5	2	11	3	2	23	3.54
achiev_good	1	6	5	4	8	1	24	2.79
algorithm_term	1	5	5	4	9	1	24	2.99
method_model	1	1	3	6	10	4	21	3.43
metric_evalu	1	5	1	5	12	1	24	4.31
stemmer_arab	1	7	2	9	5	1	24	3.37
system_consid	1	7	3	4	8	2	23	2.79
system_requir	1	3	3	4	12	2	23	3.97
tweet_collect	1	17	2	1	2	2	23	6.31
word_user	1	7	5	4	2	6	19	2.32
appli_cluster	12	2	1	2	4	3	21	4.05
learn_task	12	3	2	2	3	2	22	3.95
document_organ	11	1	4	3	4	1	23	3.69
measur_comput	10	4	3	2	3	2	22	3.03
term_given	8	3	6	4	1	2	22	2.61
user_find	8	3	4	6	2	1	23	2.61
bay_model	7	6	3	6	1	1	23	2.68
consid_term	7	6	6	2	2	1	23	2.61
mcgraw_hill	7	5	1	4	5	2	22	2.19
method_document	7	6	2	6	1	2	22	2.61
model_cluster	7	2	4	3	2	6	18	2.1
retriev_data	7	4	6	2	4	1	23	2.28
search_inform	7	7	3	1	2	4	20	2.53
basic_idea	6	2	4	6	4	2	22	1.79
blog_post	6	6	6	3	2	1	23	2.28
comput_survei	6	6	3	2	6	1	23	2.28
deriv_word	6	5	3	5	2	3	21	1.55
main_contribut	6	7	4	2	4	1	23	2.28
estim_paramet	5	6	1	4	7	1	23	2.53
form_cluster	5	4	3	4	6	2	22	1.41
method_name	5	1	1	5	9	3	21	3.03

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
model_techniqu	5	3	6	3	5	2	22	1.55
neural_inform	5	3	3	3	9	1	23	2.76
binari_classifi	4	2	2	11	3	2	22	3.52
charact_token	4	3	4	7	5	1	23	2
latent_variabl	4	2	6	5	6	1	23	2.1
system_comput	4	3	2	5	9	1	23	2.83
task_automat	4	8	4	4	2	2	22	2.19
text_includ	4	8	2	3	6	1	23	2.61
us_neural	4	3	2	5	5	5	19	1.26
algorithm_describ	3	6	2	5	7	1	23	2.37
algorithm_method	3	9	1	5	5	1	23	3.03
algorithm_requir	3	2	4	4	8	3	21	2.1
applic_us	3	1	1	3	13	3	21	4.52
calcul_score	3	2	6	9	2	2	22	2.9
featur_number	3	4	2	3	11	1	23	3.58
inform_base	3	4	5	3	8	1	23	2.37
method_achiev	3	4	1	2	13	1	23	4.56
studi_focus	3	4	3	3	10	1	23	3.1
comput_program	2	8	1	5	6	2	22	2.76
dataset_test	2	5	4	4	8	1	23	2.45
identifi_emot	2	4	3	10	3	2	22	3.03
replac_word	2	2	6	11	2	1	23	3.85
statist_data	2	2	2	4	13	1	23	4.52
automat_detect	1	6	2	2	12	1	23	4.34
calcul_word	1	6	2	7	6	2	22	2.61
commun_system	1	1	1	7	12	2	22	4.56
develop_tool	1	1	5	5	11	1	23	3.95
featur_classif	1	7	3	6	5	2	22	2.37
graphic_model	1	7	4	5	3	4	20	2
process_term	1	8	1	10	3	1	23	4
semant_resourc	1	3	4	12	2	2	22	4.05
text_analyt	1	10	3	1	6	3	21	3.46
word_weight	1	4	8	6	4	1	23	2.76
match_match	11	1	1	1	8	1	22	4.49
valu_obtain	11	2	1	4	4	1	22	3.76
defin_term	9	2	5	5	1	1	22	3.13
us_maximum	9	4	3	4	2	1	22	2.79
cluster_comput	8	2	7	1	4	1	22	3.06

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
space_word	8	3	2	5	4	1	22	2.48
token_document	8	4	4	2	2	3	20	2.23
model_dataset	7	5	2	3	3	3	20	1.83
novel_approach	7	3	5	6	1	1	22	2.56
vocabulari_word	7	7	1	4	2	2	21	2.64
frequenc_measur	6	2	6	4	3	2	21	1.83
ground_truth	6	4	5	4	1	3	20	1.72
levelRepresent	6	12	1	2	1	1	22	4.45
process_select	6	4	3	4	5	1	22	1.72
algorithm_automat	5	5	4	2	6	1	22	1.94
index_word	5	2	4	10	1	1	22	3.43
proc_sigir	5	8	2	3	1	4	19	2.48
algorithm_achiev	4	3	2	9	4	1	22	2.79
appli_algorithm	4	6	1	6	5	1	22	2.32
averag_length	4	5	5	6	2	1	22	1.94
evalu_base	4	3	1	7	6	2	21	2.32
form_term	4	6	4	3	5	1	22	1.72
machin_intellig	4	2	4	4	8	1	22	2.4
mine_base	4	5	6	3	3	2	21	1.47
professor_comput	4	10	4	1	1	3	20	3.31
techniqu_reduc	4	5	2	2	8	2	21	2.4
us_tool	4	4	2	5	6	2	21	1.6
vector_term	4	2	4	2	10	1	22	3.25
evalu_dataset	3	7	1	6	4	2	21	2.32
extract_semant	3	8	1	4	2	5	18	2.48
process_machin	3	6	2	6	5	1	22	2.14
adject_noun	2	1	5	5	8	2	21	2.64
collect_process	2	8	4	3	5	1	22	2.48
gradient_descent	2	9	1	5	5	1	22	3.13
inform_structur	2	6	7	2	5	1	22	2.48
languag_world	2	4	4	3	7	3	20	1.72
learn_us	2	2	2	7	8	2	21	2.86
model_make	2	2	2	7	9	1	22	3.31
text_form	2	1	6	6	7	1	22	2.79
analysi_natur	1	4	6	7	3	2	21	2.32
complex_system	1	2	3	2	14	1	22	5.04
levenshtein_distanc	1	3	6	4	4	5	18	1.72
million_peopl	1	2	7	3	6	4	19	2.32

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
model_structur	1	5	2	6	4	5	18	1.94
remain_word	1	4	5	11	1	1	22	3.92
search_data	9	3	2	5	2	1	21	2.94
approach_solv	8	3	2	7	1	1	21	3.08
document_convert	8	4	1	3	4	2	20	2.42
extern_knowledg	8	2	5	2	2	3	19	2.42
appli_document	7	2	3	6	3	1	21	2.34
assign_categor	7	2	5	4	3	1	21	2.16
distribut_data	7	3	6	2	3	1	21	2.34
network_commun	7	2	7	2	3	1	21	2.66
tree_base	7	2	1	4	6	2	20	2.42
larger_number	6	2	3	7	3	1	21	2.34
novel_method	6	4	3	6	1	2	20	2.07
preprint_arxiv	6	2	2	2	6	4	18	1.97
represent_vector	6	6	1	5	2	2	20	2.25
us_keyword	6	6	4	4	1	1	21	2.25
data_classifi	5	6	4	2	3	2	20	1.63
distribut_term	5	6	4	3	3	1	21	1.75
group_base	5	4	3	3	5	2	20	1.21
relev_user	5	2	4	8	1	2	20	2.58
summar_task	5	8	2	4	2	1	21	2.58
type_word	5	3	1	6	6	1	21	2.34
vector_weight	5	7	1	4	4	1	21	2.34
weight_weight	5	6	4	3	3	1	21	1.75
approach_method	4	3	2	2	9	2	20	2.73
column_repres	4	3	1	6	6	2	20	2.07
dept_comput	4	7	5	2	1	3	19	2.16
keyword_search	4	8	4	3	1	2	20	2.42
measur_word	4	6	1	4	4	3	19	1.63
model_analysi	4	3	2	6	5	2	20	1.63
perform_comparison	4	6	1	6	3	2	20	2.07
user_input	4	2	6	4	5	1	21	1.86
approach_gener	3	1	4	4	8	2	20	2.42
base_keyword	3	1	5	4	3	6	16	1.75
base_multi	3	6	2	4	4	3	19	1.37
base_score	3	8	2	5	2	2	20	2.42
base_valu	3	7	2	1	8	1	21	3.08
data_size	3	3	5	7	3	1	21	2.07

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
data_social	3	3	3	7	5	1	21	2.07
perform_variou	3	5	2	4	7	1	21	2.16
reduc_comput	3	1	5	7	4	2	20	2.16
studi_us	3	3	3	3	7	3	19	1.63
us_measur	3	7	5	2	4	1	21	2.16
word_input	3	4	6	3	5	1	21	1.75
workshop_text	3	4	11	1	2	1	21	3.78
accuraci_score	2	4	4	4	2	6	16	1.51
approach_identifi	2	6	3	2	7	2	20	2.25
base_queri	2	6	2	7	2	3	19	2.25
determin_word	2	6	1	8	4	1	21	2.88
maximum_valu	2	5	7	1	6	1	21	2.66
model_creat	2	1	1	2	11	5	17	3.88
take_time	2	7	3	4	5	1	21	2.16
us_number	2	3	4	4	6	3	19	1.37
user_us	2	1	3	5	7	4	18	2.16
averag_time	1	5	1	8	3	4	18	2.66
classifi_predict	1	5	3	2	10	1	21	3.44
knowledg_inform	1	5	11	1	2	2	20	3.88
perform_stem	1	4	8	5	2	2	20	2.58
valu_given	1	6	4	5	5	1	21	2.16
word_replac	1	1	1	14	4	1	21	5.2
document_appear	9	1	1	7	1	2	19	3.56
kullback_leibler	8	1	8	1	2	1	20	3.51
number_distinct	8	6	3	2	1	1	20	2.88
learn_autom	7	6	5	1	1	1	20	2.81
requir_number	7	6	2	1	4	1	20	2.59
becom_popular	6	2	5	4	3	1	20	1.87
process_call	6	4	4	2	4	1	20	1.76
similar_featur	6	3	2	6	2	2	19	1.97
singl_term	6	2	2	3	7	1	20	2.43
term_calcul	6	3	4	3	2	3	18	1.38
term_topic	6	6	1	5	1	2	19	2.43
type_document	6	5	6	1	2	1	20	2.43
appli_mathemat	5	4	2	4	3	3	18	1.05
creat_word	5	7	1	5	2	1	20	2.51
decreas_number	5	5	4	4	2	1	20	1.64
master_degre	5	2	3	5	5	1	20	1.76

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
test_train	5	3	1	4	4	4	17	1.38
text_evalu	5	4	1	3	6	2	19	1.87
cosin_angl	4	7	4	3	2	1	20	2.07
evalu_cluster	4	3	2	5	5	2	19	1.38
evalu_lrec	4	7	1	1	7	1	20	2.95
given_user	4	1	3	5	6	2	19	1.87
includ_step	4	7	2	3	3	2	19	1.87
likelihood_estim	4	4	1	9	2	1	20	3.02
mine_icdm	4	3	5	5	1	3	18	1.52
model_experi	4	1	1	3	11	1	20	3.89
optim_number	4	1	1	9	2	4	17	3.02
process_order	4	1	2	7	6	1	20	2.59
queri_queri	4	1	1	9	1	5	16	3.21
recent_studi	4	6	6	1	3	1	20	2.26
similar_concept	4	4	2	2	8	1	20	2.51
strip_program	4	5	5	2	4	1	20	1.64
classifi_emot	3	4	2	2	6	4	17	1.52
consid_word	3	5	2	6	4	1	20	1.87
inform_featur	3	3	1	6	7	1	20	2.51
measur_combin	3	4	5	3	1	5	16	1.52
model_number	3	4	2	6	5	1	20	1.87
refer_word	3	5	3	2	6	2	19	1.64
techniqu_stem	3	2	4	2	9	1	20	2.88
word_letter	3	11	2	1	3	1	20	3.78
approach_present	2	3	2	5	6	3	18	1.64
integr_data	2	1	8	1	8	1	20	3.51
method_data	2	2	4	7	5	1	20	2.26
model_present	2	4	3	2	7	3	18	1.87
multi_dimension	2	5	10	2	1	1	20	3.51
select_select	2	3	10	4	1	1	20	3.39
system_abl	2	2	1	1	12	3	18	4.23
text_exampl	2	5	3	3	5	3	18	1.22
base_function	1	3	2	3	2	10	11	3.27
develop_base	1	3	4	2	9	2	19	2.88
emot_analysi	1	1	1	3	8	7	14	3.21
mine_introduct	1	2	8	4	5	1	20	2.74
morpholog_syntact	1	6	5	2	6	1	20	2.43
score_evalu	1	1	3	9	3	4	17	2.95

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
servic_name	10	1	1	1	3	4	16	3.5
precis_rate	9	6	1	1	1	2	18	3.39
order_compar	8	1	3	3	4	1	19	2.58
similar_function	8	5	3	1	1	2	18	2.73
step_algorithm	7	1	2	4	5	1	19	2.42
neg_emot	6	4	1	5	1	3	17	2.07
particular_categori	6	1	5	4	2	2	18	1.97
advanc_neural	5	3	2	2	7	1	19	2.25
cluster_form	5	6	3	3	1	2	18	1.86
html_http	5	4	2	3	4	2	18	1.21
particular_document	5	7	3	2	2	1	19	2.25
reduc_dimens	5	5	4	2	2	2	18	1.51
stem_approach	5	4	5	3	2	1	19	1.63
twitter_social	5	1	2	5	6	1	19	2.25
accuraci_text	4	2	5	4	3	2	18	1.21
learn_theori	4	2	1	3	6	4	16	1.75
select_appropri	4	5	3	2	4	2	18	1.21
task_document	4	4	4	4	3	1	19	1.21
term_index	4	4	3	7	1	1	19	2.25
text_model	4	1	2	9	1	3	17	3.01
time_frame	4	5	3	2	5	1	19	1.63
analysi_determin	3	4	2	5	5	1	19	1.63
classifi_class	3	4	3	5	3	2	18	1.03
creativ_common	3	1	2	4	8	2	18	2.5
lower_valu	3	3	2	9	2	1	19	2.88
match_algorithm	3	4	3	3	5	2	18	1.03
problem_data	3	2	6	5	3	1	19	1.86
techniqu_term	3	6	2	5	3	1	19	1.86
word_algorithm	3	6	1	2	7	1	19	2.58
class_cluster	2	2	2	4	9	1	19	2.94
evalu_topic	2	4	2	9	1	2	18	2.94
process_describ	2	8	2	2	4	2	18	2.42
system_inform	2	5	2	7	3	1	19	2.25
tion_retriev	2	2	2	12	1	1	19	4.27
total_score	2	1	1	5	10	1	19	3.61
user_select	2	3	6	1	7	1	19	2.58
word_defin	2	7	3	5	2	1	19	2.25
word_find	2	8	3	5	1	1	19	2.73

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
collect_us	1	2	4	6	5	2	18	1.97
data_perform	1	2	1	9	5	2	18	3.14
dice_similar	1	2	1	6	9	1	19	3.39
formal_defin	1	4	3	9	2	1	19	3.01
respons_time	1	5	1	1	8	4	16	2.88
techniqu_order	1	2	4	6	6	1	19	2.34
distribut_similar	11	2	2	1	2	1	18	3.87
probabl_term	9	1	4	3	1	1	18	3.13
document_assign	8	4	2	3	1	1	18	2.64
leibler_diverg	7	1	7	1	2	1	18	2.99
bucklei_term	6	4	4	2	2	1	18	1.83
categor_comput	5	8	3	1	1	1	18	2.86
collect_dataset	5	3	1	3	5	2	17	1.6
introduct_modern	5	4	2	5	2	1	18	1.72
keyword_arab	5	4	2	4	3	1	18	1.47
search_us	5	2	3	5	3	1	18	1.6
size_document	5	3	5	1	4	1	18	1.83
system_page	5	1	3	6	2	2	17	1.94
time_document	5	2	6	4	1	1	18	2.14
charact_number	4	3	1	4	6	1	18	1.94
document_select	4	3	4	6	1	1	18	1.94
effect_method	4	5	1	2	6	1	18	2.14
languag_complex	4	1	4	7	2	1	18	2.32
method_take	4	3	3	1	6	2	17	1.72
signific_amount	4	2	2	3	5	3	16	1.17
analysi_classif	3	3	2	4	5	2	17	1.17
appli_comput	3	6	5	1	3	1	18	2.04
document_obtain	3	5	3	4	1	3	16	1.33
main_focu	3	6	1	5	3	1	18	2.04
model_outperform	3	1	1	6	6	2	17	2.32
probabl_class	3	7	4	1	3	1	18	2.23
represent_method	3	8	4	2	1	1	18	2.64
term_mean	3	4	3	6	1	2	17	1.72
word_singl	3	2	8	4	1	1	18	2.64
algorithm_present	2	7	1	4	3	2	17	2.14
approach_comput	2	3	2	2	7	3	16	1.94
corpu_includ	2	6	2	1	4	4	15	1.83
data_analyz	2	4	4	1	7	1	18	2.32

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
data_experi	2	6	4	2	4	1	18	1.83
depend_word	2	5	2	5	4	1	18	1.72
describ_method	2	7	5	2	2	1	18	2.32
distribu_tion	2	6	1	6	3	1	18	2.32
frequenc_featur	2	4	2	6	4	1	18	1.83
good_accuraci	2	2	2	2	8	3	16	2.4
human_behavior	2	2	5	1	8	1	18	2.79
lucen_apach	2	5	2	7	2	1	18	2.32
main_advantag	2	4	1	4	7	1	18	2.32
saudi_arabia	2	1	6	4	5	1	18	2.14
tag_tag	2	2	3	10	1	1	18	3.43
us_automat	2	5	6	2	3	1	18	1.94
word_inform	2	5	3	5	3	1	18	1.6
analysi_identifi	1	5	3	5	4	1	18	1.83
common_attribut	1	4	1	4	8	1	18	2.79
exampl_tweet	1	1	1	2	6	8	11	3.06
model_find	1	2	2	8	4	2	17	2.56
normal_term	1	4	2	4	7	1	18	2.32
polar_text	1	1	2	2	12	1	18	4.36
preci_sion	1	1	2	13	1	1	18	4.83
system_includ	1	7	2	3	5	1	18	2.4
text_therefor	1	4	3	4	4	3	16	1.17
theori_applic	1	4	2	1	9	2	17	3.06
us_linguist	1	3	6	4	2	3	16	1.72
word_correspond	1	2	3	2	6	5	14	1.94
neg_train	8	1	1	3	4	1	17	2.76
cluster_hierarch	6	3	2	3	3	1	17	1.67
document_reduc	6	3	6	1	1	1	17	2.45
index_databas	6	2	5	1	3	1	17	2.1
stage_text	6	1	5	3	2	1	17	2.1
class_repres	5	1	5	2	4	1	17	1.9
cluster_evalu	5	2	1	4	2	4	14	1.55
document_includ	5	5	3	1	3	1	17	1.79
experiment_studi	5	2	2	6	1	2	16	2
identifi_topic	5	3	5	2	2	1	17	1.67
social_interact	5	3	1	5	3	1	17	1.79
user_label	5	2	2	6	1	2	16	2
vector_similar	5	1	3	7	1	1	17	2.53

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
word_normal	5	4	2	5	1	1	17	1.9
descend_order	4	4	1	6	2	1	17	2
form_verb	4	3	6	1	3	1	17	1.9
semant_represent	4	6	1	5	1	1	17	2.28
stem_gener	4	3	2	1	7	1	17	2.28
stem_porter	4	3	2	2	6	1	17	1.79
term_contain	4	3	2	6	2	1	17	1.79
text_obtain	4	2	2	3	5	2	16	1.26
us_languag	4	4	2	1	4	3	15	1.26
us_queri	4	4	2	2	3	3	15	0.89
document_content	3	5	3	5	1	1	17	1.79
document_increas	3	3	2	4	4	2	16	0.89
evalu_qualiti	3	1	3	2	7	2	16	2.1
filter_us	3	2	1	5	6	1	17	2.1
huge_number	3	5	2	1	6	1	17	2.1
match_user	3	4	3	5	1	2	16	1.41
remov_letter	3	8	1	2	3	1	17	2.61
step_preprocess	3	4	1	2	6	2	16	1.79
weight_score	3	1	1	8	4	1	17	2.76
word_vocabulari	3	3	2	8	1	1	17	2.61
avail_abl	2	1	4	6	3	2	16	1.79
document_distribut	2	2	2	2	6	4	14	1.67
extract_task	2	2	7	1	5	1	17	2.45
imag_analysi	2	4	8	1	2	1	17	2.68
languag_make	2	3	3	3	6	1	17	1.67
obtain_cluster	2	7	2	4	2	1	17	2.19
process_identifi	2	4	4	1	6	1	17	2
significantli_reduc	2	3	5	4	3	1	17	1.41
step_extract	2	6	6	1	2	1	17	2.37
step_identifi	2	5	3	4	3	1	17	1.41
system_term	2	4	2	5	3	2	16	1.26
us_graph	2	6	2	2	4	2	16	1.67
us_knowledg	2	4	8	2	1	1	17	2.68
approach_machin	1	1	3	6	6	1	17	2.45
independ_assumpt	1	5	1	6	4	1	17	2.28
method_mean	1	3	1	5	5	3	15	1.79
number_sampl	1	3	2	4	5	3	15	1.41
origin_dataset	1	2	6	4	4	1	17	2

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
problem_automat	1	4	6	3	2	2	16	1.79
twitter_stream	1	7	2	2	5	1	17	2.45
user_system	1	2	5	2	6	2	16	2
data_distribut	8	2	3	1	2	1	16	2.64
document_call	6	4	1	1	2	3	14	1.94
avail_document	5	2	4	3	2	1	16	1.47
calcul_distanc	5	3	1	4	3	1	16	1.6
input_train	5	3	1	1	4	3	14	1.6
base_emot	4	2	6	1	2	2	15	1.83
develop_evalu	4	4	1	5	2	1	16	1.72
featur_evalu	4	1	1	3	5	3	14	1.6
linear_function	4	2	4	4	2	1	16	1.33
particular_domain	4	2	3	4	3	1	16	1.17
randomli_chosen	4	2	1	3	5	2	15	1.47
valu_measur	4	5	2	3	2	1	16	1.47
algorithm_mine	3	3	1	8	1	1	16	2.71
analyz_tweet	3	2	2	6	3	1	16	1.72
imag_video	3	1	3	3	5	2	15	1.33
measur_find	3	5	1	4	2	2	15	1.47
number_retriev	3	1	4	7	1	1	16	2.4
process_automat	3	4	2	4	3	1	16	1.17
process_take	3	3	3	3	4	1	16	0.98
requir_user	3	2	4	2	3	3	14	0.75
rule_combin	3	2	1	1	7	3	14	2.23
signific_word	3	4	3	5	1	1	16	1.6
appli_stem	2	3	4	4	3	1	16	1.17
applic_servic	2	7	1	2	4	1	16	2.32
base_structur	2	3	4	2	5	1	16	1.47
calcu_late	2	4	3	6	1	1	16	1.94
correspond_sentenc	2	3	2	1	5	4	13	1.47
experi_text	2	4	4	2	3	2	15	0.98
featur_calcul	2	3	3	5	3	1	16	1.33
interact_user	2	3	1	2	5	4	13	1.47
map_word	2	6	1	5	2	1	16	2.14
order_understand	2	1	5	1	7	1	16	2.56
search_retriev	2	3	4	5	2	1	16	1.47
token_remov	2	5	2	4	1	3	14	1.47
us_gener	2	3	3	3	4	2	15	0.75

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
vector_train	2	2	4	3	3	3	14	0.75
weight_obtain	2	2	3	2	7	1	16	2.14
class_posit	1	2	1	3	2	8	9	2.64
commun_comput	1	1	5	2	7	1	16	2.56
consist_phase	1	2	4	3	6	1	16	1.94
correctli_identifi	1	7	3	3	1	2	15	2.23
document_form	1	4	5	4	1	2	15	1.72
experi_dataset	1	6	1	1	7	1	16	2.86
knowledg_resourc	1	3	10	1	1	1	16	3.6
languag_social	1	7	3	2	2	2	15	2.14
system_measur	1	4	4	4	3	1	16	1.47
text_method	1	6	3	3	3	1	16	1.83
word_chang	1	4	1	3	7	1	16	2.4
engin_issu	8	1	3	1	2	1	15	2.73
identifi_us	7	1	3	3	1	1	15	2.34
determin_number	6	3	3	1	2	1	15	1.86
normal_word	6	1	2	4	2	1	15	1.97
text_identifi	6	1	5	1	2	1	15	2.25
world_congress	6	2	1	1	5	1	15	2.25
comparison_method	5	5	3	1	1	1	15	1.97
document_improv	5	2	2	4	1	2	14	1.51
precis_calcul	5	1	2	6	1	1	15	2.25
stem_document	5	2	2	5	1	1	15	1.86
centroid_cluster	4	3	2	1	5	1	15	1.63
data_approach	4	4	2	3	2	1	15	1.21
indic_word	3	2	4	4	2	1	15	1.21
interest_user	3	4	2	1	5	1	15	1.63
punctuat_remov	3	1	1	3	7	1	15	2.34
set_featur	3	3	3	2	4	1	15	1.03
twitter_facebook	3	3	1	5	3	1	15	1.51
variou_techniqu	3	2	5	3	2	1	15	1.37
word_ad	3	1	4	2	5	1	15	1.63
accu_raci	2	2	3	3	3	3	13	0.52
algorithm_accuraci	2	3	4	1	5	1	15	1.63
algorithm_consist	2	5	2	2	4	1	15	1.51
algorithm_naiv	2	4	1	1	7	1	15	2.42
collect_collect	2	1	4	1	6	2	14	1.97
compar_us	2	1	3	5	3	2	14	1.37

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
comparison_document	2	3	5	3	1	2	14	1.37
comparison_precis	2	2	1	7	3	1	15	2.25
describ_process	2	5	1	4	3	1	15	1.63
develop_develop	2	2	2	1	8	1	15	2.66
equal_length	2	2	3	4	4	1	15	1.21
featur_perform	2	3	1	6	1	3	13	1.86
frequenc_corpu	2	1	1	10	1	1	15	3.61
http_lucen	2	4	2	5	2	1	15	1.51
keyword_queri	2	3	3	2	2	4	12	0.82
measur_estim	2	1	2	7	3	1	15	2.25
model_take	2	4	1	3	5	1	15	1.63
obtain_word	2	2	3	5	2	2	14	1.21
probabilist_classifi	2	2	3	5	1	3	13	1.37
process_activ	2	5	5	2	1	1	15	1.86
score_comput	2	2	3	7	1	1	15	2.25
step_select	2	8	1	1	3	1	15	2.73
system_learn	2	4	6	2	1	1	15	1.97
term_relev	2	3	2	5	2	2	14	1.21
word_structur	2	1	4	2	6	1	15	1.97
word_type	2	5	2	4	2	1	15	1.51
algorithm_classif	1	4	3	4	3	1	15	1.37
base_mean	1	4	2	6	2	1	15	1.97
clean_data	1	1	4	5	3	2	14	1.63
document_creat	1	1	4	6	2	2	14	1.97
document_remov	1	6	3	2	3	1	15	1.86
extract_name	1	3	2	7	2	1	15	2.25
func_tion	1	1	3	3	7	1	15	2.34
issn_issn	1	2	2	2	8	1	15	2.66
matrix_term	1	4	1	6	3	1	15	2.07
meaning_inform	1	3	3	2	6	1	15	1.86
method_detect	1	1	4	7	2	1	15	2.42
output_process	1	3	3	2	5	2	14	1.37
system_avail	1	2	1	3	5	4	12	1.63
system_detect	1	3	2	4	4	2	14	1.21
text_sourc	1	1	4	3	6	1	15	2.07
time_base	1	3	2	5	4	1	15	1.63
remov_step	7	1	1	2	1	3	12	2.35
parent_node	6	3	2	2	1	1	14	1.87

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
perform_obtain	6	1	2	3	2	1	14	1.87
word_lead	6	4	2	1	1	1	14	2.07
appear_text	5	2	2	1	4	1	14	1.64
cluster_repres	5	3	2	2	2	1	14	1.38
inform_servic	5	1	1	3	4	1	14	1.76
predefin_class	5	1	1	5	1	2	13	1.97
applic_inform	4	2	1	5	2	1	14	1.64
becom_increasingli	4	2	2	4	2	1	14	1.22
classif_data	4	4	1	3	1	2	13	1.38
inform_social	4	3	3	2	2	1	14	1.05
lower_number	4	2	4	3	1	1	14	1.38
techniqu_featur	4	2	4	1	3	1	14	1.38
affix_word	3	1	3	3	3	2	13	0.84
classif_arab	3	4	1	2	4	1	14	1.38
dataset_avail	3	2	2	3	3	2	13	0.55
dataset_creat	3	2	2	5	2	1	14	1.38
featur_semant	3	4	2	4	1	1	14	1.38
function_similar	3	3	1	3	2	3	12	0.84
perform_step	3	4	3	1	2	2	13	1.05
repres_singl	3	1	3	2	5	1	14	1.52
step_gener	3	3	5	1	2	1	14	1.52
time_number	3	2	2	1	6	1	14	1.87
token_us	3	2	3	2	2	3	12	0.55
vector_number	3	1	1	6	1	3	12	1.97
approach_pattern	2	5	4	2	1	1	14	1.64
contain_topic	2	4	3	3	1	2	13	1.05
content_type	2	2	2	4	4	1	14	1.22
degre_similar	2	7	1	2	2	1	14	2.26
form_inform	2	1	3	4	3	2	13	1.05
improv_us	2	1	1	5	5	1	14	1.97
inform_form	2	2	6	2	2	1	14	1.76
interest_pattern	2	6	3	1	2	1	14	1.87
model_produc	2	3	1	1	7	1	14	2.35
present_text	2	2	5	2	3	1	14	1.38
score_precis	2	2	5	4	1	1	14	1.64
stem_exampl	2	3	5	1	2	2	13	1.38
text_appli	2	2	1	4	4	2	13	1.22
valu_chosen	2	1	3	2	6	1	14	1.87

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
automat_emot	1	5	2	5	1	1	14	1.97
base_perform	1	4	1	1	6	2	13	2.07
cluster_topic	1	3	3	2	1	5	10	1.52
contain_specif	1	1	2	3	7	1	14	2.35
data_describ	1	4	2	6	1	1	14	2.07
data_estim	1	2	3	3	5	1	14	1.52
data_user	1	1	3	2	6	2	13	1.87
electron_commun	1	1	5	5	2	1	14	1.97
exist_techniqu	1	1	3	3	5	2	13	1.52
frequenc_text	1	3	3	2	5	1	14	1.52
languag_stem	1	3	3	4	3	1	14	1.22
method_topic	1	1	2	5	4	2	13	1.64
model_increas	1	1	2	5	5	1	14	1.97
object_base	1	2	2	4	5	1	14	1.64
produc_cluster	1	3	6	3	1	1	14	1.97
rela_tionship	1	4	6	2	1	1	14	2.07
signific_number	1	3	1	1	7	2	13	2.35
similar_semant	1	4	3	4	2	1	14	1.38
system_creat	1	2	4	1	6	1	14	2.07
time_accuraci	1	1	3	6	3	1	14	1.97
topic_us	1	2	1	5	2	4	11	1.64
train_word	1	2	2	3	2	5	10	1.38
word_valu	1	3	3	2	3	3	12	0.84
semant_concept	8	1	1	1	1	2	12	2.8
languag_form	6	1	1	3	2	1	13	1.97
stemmer_compar	6	3	2	1	1	1	13	1.97
distribut_class	5	1	2	1	3	2	12	1.51
binari_valu	4	1	1	1	5	2	12	1.75
consid_number	4	4	2	2	1	1	13	1.37
document_therefor	4	4	1	2	2	1	13	1.37
gener_train	4	4	1	1	3	1	13	1.51
higher_weight	4	1	3	4	1	1	13	1.51
method_present	4	3	3	1	2	1	13	1.21
word_preposit	4	2	4	1	2	1	13	1.37
approach_select	3	2	2	2	3	2	12	0.52
assign_cluster	3	3	2	2	1	3	11	0.82
cluster_compar	3	2	2	1	5	1	13	1.51
form_form	3	2	3	3	2	1	13	0.82

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
grow_rapidli	3	2	3	3	2	1	13	0.82
matrix_contain	3	1	3	1	5	1	13	1.63
method_semant	3	3	1	2	4	1	13	1.21
term_identifi	3	1	6	1	2	1	13	1.97
text_present	3	1	3	1	5	1	13	1.63
topic_similar	3	2	6	1	1	1	13	1.97
vector_input	3	1	1	6	2	1	13	1.97
analysi_comput	2	3	4	1	2	2	12	1.03
analysi_problem	2	1	4	3	3	1	13	1.21
approach_compar	2	3	2	1	5	1	13	1.51
emerg_technolog	2	4	2	1	4	1	13	1.37
exist_algorithm	2	4	2	3	1	2	12	1.03
graph_model	2	7	2	1	1	1	13	2.34
luhn_automat	2	7	1	1	2	1	13	2.34
method_construct	2	6	2	2	1	1	13	1.86
order_measur	2	2	2	2	5	1	13	1.37
perform_fold	2	1	2	7	1	1	13	2.34
remov_nois	2	1	3	5	1	2	12	1.51
similar_approach	2	1	2	7	1	1	13	2.34
system_refer	2	2	4	1	4	1	13	1.37
tool_provid	2	5	1	4	1	1	13	1.75
transact_pattern	2	1	1	4	5	1	13	1.75
analysi_knowledg	1	2	1	4	5	1	13	1.75
base_appli	1	3	1	4	4	1	13	1.51
base_rank	1	2	1	5	4	1	13	1.75
classifi_term	1	2	4	3	3	1	13	1.21
crucial_role	1	1	3	4	4	1	13	1.51
featur_learn	1	3	2	5	2	1	13	1.51
field_data	1	3	2	3	4	1	13	1.21
function_defin	1	5	1	4	2	1	13	1.75
gener_architectur	1	3	3	5	1	1	13	1.63
good_featur	1	1	2	7	1	2	12	2.34
lemmat_word	1	1	5	5	1	1	13	2.07
mathemat_scienc	1	1	3	2	2	5	9	1.51
media_content	1	2	1	2	7	1	13	2.34
model_machin	1	2	2	2	6	1	13	1.86
morpho_syntact	1	2	4	4	2	1	13	1.37
number_attribut	1	2	1	5	4	1	13	1.75

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
number_concept	1	6	1	1	3	2	12	1.97
perform_dataset	1	1	2	6	2	2	12	1.86
similar_group	1	7	1	3	1	1	13	2.42
simpl_probabilist	1	1	2	6	3	1	13	1.97
solv_issu	1	3	1	2	4	3	11	1.21
split_text	1	3	2	3	4	1	13	1.21
step_find	1	5	1	2	3	2	12	1.51
stochast_gradient	1	6	2	2	2	1	13	1.86
text_step	1	6	1	3	2	1	13	1.97
third_type	1	1	3	4	4	1	13	1.51
type_system	1	2	1	6	3	1	13	1.97
cluster_correspond	6	2	1	2	1	1	12	1.94
compar_origin	6	1	2	1	2	1	12	1.94
sequenc_model	6	2	1	1	2	1	12	1.94
rule_defin	5	1	2	2	2	1	12	1.47
correspond_featur	4	2	2	2	2	1	12	0.98
process_search	4	1	1	5	1	1	12	1.83
therefor_develop	4	2	1	1	4	1	12	1.47
word_indic	4	2	1	1	3	2	11	1.17
catégori_us	3	3	3	2	1	1	12	0.98
classif_new	3	2	3	2	2	1	12	0.75
correspond_topic	3	3	2	3	1	1	12	0.98
dictionari_dictionari	3	2	2	3	2	1	12	0.75
document_normal	3	3	4	1	1	1	12	1.33
engin_retriev	3	2	1	1	1	5	8	1.6
inquiri_word	3	1	4	2	1	2	11	1.17
remov_arab	3	3	2	2	2	1	12	0.75
requir_addit	3	1	2	4	1	2	11	1.17
step_token	3	2	1	3	2	2	11	0.75
us_normal	3	1	2	4	1	2	11	1.17
alphabet_charact	2	2	4	3	1	1	12	1.17
base_implement	2	5	1	1	3	1	12	1.6
base_pattern	2	1	4	1	3	2	11	1.17
base_probabl	2	2	1	2	5	1	12	1.47
case_text	2	2	1	1	6	1	12	1.94
charact_punctuat	2	4	1	2	3	1	12	1.17
engin_inform	2	2	1	2	4	2	11	0.98
extract_phrase	2	1	5	2	2	1	12	1.47

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
initi_step	2	2	3	3	2	1	12	0.75
measur_qualiti	2	2	4	2	2	1	12	0.98
method_effect	2	2	2	3	3	1	12	0.75
model_calcul	2	3	1	1	2	4	9	1.17
particular_case	2	2	4	2	2	1	12	0.98
rapid_develop	2	1	2	2	5	1	12	1.47
string_number	2	7	1	1	1	1	12	2.4
system_make	2	2	3	3	1	2	11	0.75
toulous_franc	2	4	4	1	1	1	12	1.47
us_resourc	2	2	1	2	5	1	12	1.47
valu_model	2	2	1	5	2	1	12	1.47
vector_length	2	2	1	5	2	1	12	1.47
word_porter	2	3	2	2	3	1	12	0.75
approach_found	1	1	2	3	4	2	11	1.17
call_term	1	2	6	1	1	2	11	1.94
classifi_decis	1	2	2	3	4	1	12	1.17
content_tweet	1	1	2	3	4	2	11	1.17
database_commun	1	3	3	4	1	1	12	1.33
document_specif	1	2	1	5	3	1	12	1.6
human_social	1	3	4	3	1	1	12	1.33
inform_analysi	1	2	3	2	4	1	12	1.17
linguist_volum	1	5	4	1	1	1	12	1.83
method_case	1	3	1	2	5	1	12	1.6
model_thu	1	4	1	1	4	2	11	1.47
page_contain	1	4	1	3	3	1	12	1.33
partial_support	1	2	2	2	5	1	12	1.47
plai_crucial	1	1	3	3	4	1	12	1.33
problem_includ	1	3	1	3	4	1	12	1.33
scienc_softwar	1	2	2	1	6	1	12	1.94
step_approach	1	1	1	7	2	1	12	2.4
step_featur	1	1	1	6	3	1	12	2.04
studi_comput	1	2	1	7	1	1	12	2.4
system_capabl	1	2	4	1	1	4	9	1.47
system_project	1	1	1	5	3	2	11	1.6
techniqu_help	1	2	1	3	5	1	12	1.6
techniqu_perform	1	2	3	3	3	1	12	0.98
text_twitter	1	2	1	2	6	1	12	1.94
time_exampl	1	2	2	3	4	1	12	1.17

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
tool_gener	1	1	3	3	4	1	12	1.33
us_preprocess	1	1	1	3	6	1	12	2.04
vector_contain	1	1	2	5	3	1	12	1.6
document_phrase	5	1	3	1	1	1	11	1.67
text_vector	5	2	2	1	1	1	11	1.55
algorithm_given	4	2	1	1	2	2	10	1.1
method_word	4	3	2	1	1	1	11	1.26
problem_word	4	2	2	1	1	2	10	1.1
spend_time	4	1	1	2	3	1	11	1.26
state_model	4	1	2	1	3	1	11	1.26
combin_term	3	3	2	2	1	1	11	0.89
effici_search	3	2	1	1	2	3	9	0.89
enorm_amount	3	1	2	1	4	1	11	1.26
further_increas	3	4	2	1	1	1	11	1.26
model_addit	3	2	2	2	1	2	10	0.63
model_requir	3	1	2	2	3	1	11	0.89
select_topic	3	1	2	2	1	3	9	0.89
term_search	3	3	2	2	1	1	11	0.89
test_compar	3	3	1	2	2	1	11	0.89
addit_word	2	4	1	2	2	1	11	1.1
analysi_applic	2	1	3	1	4	1	11	1.26
approach_reli	2	4	1	1	3	1	11	1.26
databas_search	2	3	2	3	1	1	11	0.89
elimin_stem	2	3	3	2	1	1	11	0.89
eval_uation	2	1	1	3	4	1	11	1.26
identifi_similar	2	3	2	2	2	1	11	0.63
knowledg_document	2	3	3	2	1	1	11	0.89
network_machin	2	1	1	2	5	1	11	1.55
split_data	2	4	1	3	1	1	11	1.26
steinbach_karypi	2	3	3	2	1	1	11	0.89
store_file	2	3	4	1	1	1	11	1.26
topic_exampl	2	3	2	3	1	1	11	0.89
user_data	2	1	1	3	4	1	11	1.26
valu_posit	2	1	1	2	5	1	11	1.55
accord_word	1	3	3	3	1	1	11	1.1
algorithm_determin	1	2	2	2	4	1	11	1.1
anger_fear	1	3	2	1	3	2	10	0.89
approach_consist	1	2	2	3	3	1	11	0.89

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
approach_outperform	1	1	1	5	2	2	10	1.55
candid_gener	1	1	1	6	2	1	11	2
choos_number	1	2	1	5	1	2	10	1.55
collect_period	1	3	2	1	3	2	10	0.89
compar_number	1	2	3	2	3	1	11	0.89
construct_graph	1	4	3	1	2	1	11	1.26
count_time	1	1	6	1	1	2	10	2
descrip_tion	1	1	3	3	2	2	10	0.89
design_algorithm	1	2	5	2	1	1	11	1.55
document_view	1	4	1	3	1	2	10	1.26
extract_textual	1	1	3	5	1	1	11	1.67
featur_preprocess	1	1	1	4	4	1	11	1.55
filter_step	1	2	1	3	2	3	9	0.89
help_classifi	1	2	1	2	5	1	11	1.55
independ_given	1	2	1	2	4	2	10	1.1
knowledg_sourc	1	3	2	2	3	1	11	0.89
label_class	1	3	1	2	3	2	10	0.89
method_produc	1	4	1	3	1	2	10	1.26
overal_score	1	1	5	3	1	1	11	1.67
process_human	1	4	1	1	3	2	10	1.26
step_construct	1	3	2	1	4	1	11	1.26
strength_weak	1	1	6	1	2	1	11	2
test_purpos	1	2	2	4	2	1	11	1.1
us_extern	1	2	1	4	1	3	9	1.26
word_divid	1	2	3	1	3	2	10	0.89
word_system	1	2	3	1	4	1	11	1.26
topic_categor	5	1	1	2	1	1	10	1.6
consid_time	3	2	1	1	3	1	10	0.98
data_partit	3	2	2	2	1	1	10	0.75
exist_document	3	1	2	2	2	1	10	0.75
featur_name	3	1	1	2	3	1	10	0.98
iter_step	3	4	1	1	1	1	10	1.33
label_base	3	1	1	3	2	1	10	0.98
media_platform	3	2	1	1	2	2	9	0.75
method_keyword	3	2	2	1	1	2	9	0.75
base_frequent	2	2	2	1	1	3	8	0.75
cate_gori	2	1	2	3	1	2	9	0.75
comparison_baselin	2	1	1	2	4	1	10	1.17

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
comput_perform	2	3	2	2	1	1	10	0.75
consid_case	2	1	1	1	4	2	9	1.17
dataset_method	2	3	1	2	2	1	10	0.75
distribut_represent	2	3	2	1	2	1	10	0.75
introduc_concept	2	3	2	1	2	1	10	0.75
level_document	2	2	1	2	3	1	10	0.75
metric_text	2	2	2	3	1	1	10	0.75
queri_gener	2	2	4	1	1	1	10	1.17
support_grant	2	3	1	2	2	1	10	0.75
user_perform	2	1	1	1	5	1	10	1.6
variou_approach	2	1	4	2	1	1	10	1.17
accuraci_number	1	3	1	2	2	2	9	0.75
affect_user	1	1	1	1	4	3	8	1.33
analysi_emot	1	2	1	2	4	1	10	1.17
analysi_featur	1	1	3	1	3	2	9	0.98
analysi_order	1	1	1	2	5	1	10	1.6
averag_sentenc	1	4	1	1	2	2	9	1.17
catégori_tweet	1	1	1	4	2	2	9	1.17
contain_singl	1	1	2	2	4	1	10	1.17
discoveri_databas	1	2	3	3	1	1	10	0.98
distanc_calcul	1	1	1	1	5	2	9	1.6
experi_featur	1	2	1	3	3	1	10	0.98
graph_structur	1	3	3	1	2	1	10	0.98
increas_precis	1	3	3	1	2	1	10	0.98
keyword_cluster	1	1	2	2	4	1	10	1.17
level_system	1	1	1	1	3	4	7	1.33
main_sourc	1	1	1	2	5	1	10	1.6
neg_affect	1	3	2	2	2	1	10	0.75
network_data	1	3	1	3	2	1	10	0.98
order_base	1	3	1	2	2	2	9	0.75
process_construct	1	2	3	2	2	1	10	0.75
sampl_test	1	1	1	3	4	1	10	1.33
step_build	1	1	2	3	3	1	10	0.98
us_exampl	1	2	4	2	1	1	10	1.17
user_give	1	1	2	3	1	3	8	0.98
vector_calcul	1	5	1	1	1	2	9	1.6
word_retriev	1	2	1	4	1	2	9	1.17
written_java	1	1	1	3	3	2	9	0.98

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
ad_word	3	1	2	1	1	2	8	0.82
extern_sourc	3	2	1	1	2	1	9	0.82
featur_posit	3	1	1	3	1	1	9	1.03
overal_system	3	1	2	2	1	1	9	0.82
stem_languag	3	2	1	2	1	1	9	0.82
algorithm_consid	2	2	2	2	1	1	9	0.52
automat_creation	2	2	2	1	2	1	9	0.52
cluster_unsupervis	2	1	2	1	2	2	8	0.52
dataset_compar	2	1	1	2	3	1	9	0.82
describ_algorithm	2	1	1	2	3	1	9	0.82
effici_cluster	2	3	2	1	1	1	9	0.82
full_word	2	1	2	2	2	1	9	0.52
model_human	2	1	1	1	4	1	9	1.21
punctuat_stop	2	2	1	1	3	1	9	0.82
rang_valu	2	1	1	1	4	1	9	1.21
remov_frequent	2	2	2	1	1	2	8	0.52
sampl_word	2	1	2	1	1	3	7	0.82
time_text	2	2	2	1	1	2	8	0.52
word_affect	2	1	3	1	2	1	9	0.82
algorithm_obtain	1	2	3	1	1	2	8	0.82
approach_provid	1	1	2	4	1	1	9	1.21
calcul_step	1	1	2	3	2	1	9	0.82
difficult_languag	1	3	1	1	3	1	9	1.03
document_arab	1	2	1	3	1	2	8	0.82
equat_calcul	1	2	2	2	1	2	8	0.52
extract_variou	1	1	2	4	1	1	9	1.21
famili_member	1	1	2	1	4	1	9	1.21
index_base	1	4	1	2	1	1	9	1.21
indic_cluster	1	2	2	1	2	2	8	0.52
inform_becom	1	3	2	1	2	1	9	0.82
manual_extract	1	2	1	3	2	1	9	0.82
metric_base	1	3	1	3	1	1	9	1.03
miller_wordnet	1	3	2	2	1	1	9	0.82
perform_supervis	1	1	1	4	2	1	9	1.21
process_design	1	4	1	2	1	1	9	1.21
process_part	1	2	1	3	1	2	8	0.82
score_method	1	4	1	2	1	1	9	1.21
stream_text	1	3	3	1	1	1	9	1.03

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
system_conclus	1	1	2	2	3	1	9	0.82
test_split	1	2	1	2	3	1	9	0.82
topic_cover	1	2	1	4	1	1	9	1.21
uniqu_featur	1	2	1	2	3	1	9	0.82
user_send	1	3	1	3	1	1	9	1.03
predict_categor	4	1	1	1	1	1	8	1.22
annual_symposium	3	1	1	1	2	1	8	0.84
model_respect	3	1	1	2	1	1	8	0.84
analysi_time	2	1	2	2	1	1	8	0.55
approach_deal	2	1	2	2	1	1	8	0.55
base_natur	2	1	3	1	1	1	8	0.84
collect_user	2	1	1	2	1	2	7	0.55
creation_literatur	2	2	1	1	2	1	8	0.55
data_group	2	1	1	3	1	1	8	0.84
document_pars	2	3	1	1	1	1	8	0.84
exampl_queri	2	1	1	3	1	1	8	0.84
normal_us	2	2	2	1	1	1	8	0.55
topic_refer	2	1	3	1	1	1	8	0.84
complet_text	1	1	1	2	3	1	8	0.84
context_process	1	3	1	2	1	1	8	0.84
correl_topic	1	3	1	2	1	1	8	0.84
data_chang	1	2	2	1	2	1	8	0.55
help_peopl	1	3	1	2	1	1	8	0.84
inform_thu	1	3	2	1	1	1	8	0.84
limit_word	1	2	3	1	1	1	8	0.84
method_exampl	1	1	2	3	1	1	8	0.84
mine_word	1	3	2	1	1	1	8	0.84
model_prove	1	2	1	2	2	1	8	0.55
model_singl	1	1	2	1	3	1	8	0.84
nois_data	1	2	1	3	1	1	8	0.84
perform_find	1	1	3	2	1	1	8	0.84
term_process	1	1	1	3	1	2	7	0.84
time_make	1	1	3	2	1	1	8	0.84
us_collect	1	1	2	2	1	2	7	0.55
us_determin	1	3	2	1	1	1	8	0.84
user_accord	1	1	1	2	3	1	8	0.84
valu_text	1	2	1	1	3	1	8	0.84
word_correl	1	1	1	2	3	1	8	0.84

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
mean_approach	3	1	1	1	1	1	7	0.82
current_version	2	1	2	1	1	1	7	0.52
martin_porter	2	1	1	1	2	1	7	0.52
obtain_relev	2	1	1	2	1	1	7	0.52
refer_mean	2	1	1	1	2	1	7	0.52
term_obtain	2	1	1	1	2	1	7	0.52
approach_discov	1	2	1	1	2	1	7	0.52
approach_estim	1	1	1	3	1	1	7	0.82
catégori_classif	1	1	3	1	1	1	7	0.82
classifi_built	1	1	1	3	1	1	7	0.82
classifi_simpl	1	2	1	1	1	2	6	0.52
data_initi	1	1	1	2	2	1	7	0.52
featur_input	1	1	1	2	1	2	6	0.52
function_determin	1	1	1	2	2	1	7	0.52
improv_document	1	2	1	2	1	1	7	0.52
measur_emot	1	1	1	3	1	1	7	0.82
preprocess_token	1	1	1	2	2	1	7	0.52
problem_lack	1	1	1	3	1	1	7	0.82
process_complet	1	2	1	2	1	1	7	0.52
provid_signific	1	1	2	1	2	1	7	0.52
select_group	1	1	3	1	1	1	7	0.82
system_stem	1	1	1	3	1	1	7	0.82
thousand_document	1	1	2	1	2	1	7	0.52
train_remain	1	2	2	1	1	1	7	0.52
contain_user	2	1	1	1	1	1	6	0.41
email_address	2	1	1	1	1	1	6	0.41
account_order	1	2	1	1	1	1	6	0.41
accuraci_significantli	1	1	1	1	2	1	6	0.41
base_lexic	1	1	1	2	1	1	6	0.41
base_theori	1	1	1	1	2	1	6	0.41
becom_time	1	1	1	1	2	1	6	0.41
featur_task	1	1	1	1	2	1	6	0.41
limit_term	1	1	1	1	1	2	5	0.41
process_break	1	2	1	1	1	1	6	0.41
public_date	1	1	2	1	1	1	6	0.41
retriev_semant	1	2	1	1	1	1	6	0.41
space_number	1	1	1	1	1	2	5	0.41
studi_analysi	1	1	1	1	1	2	5	0.41

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
symposium_document	1	1	1	1	2	1	6	0.41
tree_approach	1	1	1	1	2	1	6	0.41
apach_core	1	1	1	1	1	1	5	0

## APPENDIX 5-G

This appendix contains the trend analysis of the document occurrence.

Theme	Interpretation
machin_learn	DECREASING
text_mine	LOW PEAK 2014 HIGH PEAK 2015
natur_languag	HIGH PEAK 2015
inform_retriev	DECREASING
data_mine	LOW PEAK 2014 HIGH PEAK 2015
stop_word	HIGH PEAK 2014
naiv_bay	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
text_classif	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
languag_process	HIGH PEAK 2015
featur_select	LOW PEAK 2016 HIGH PEAK 2017
text_document	HIGH PEAK 2014
sentiment_analysi	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
neural_network	EQUILIBRIUM
social_media	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017
precis_recal	LOW PEAK 2015 HIGH PEAK 2016
social_network	HIGH PEAK 2014
document_cluster	LOW PEAK 2014 HIGH PEAK 2015
part_speech	HIGH PEAK 2015
comput_linguist	LOW PEAK 2014 HIGH PEAK 2015
arab_text	DECREASING
topic_model	LOW PEAK 2015 HIGH PEAK 2016
term_frequenc	HIGH PEAK 2014
text_categor	DECREASING
support_vector	LOW PEAK 2015 HIGH PEAK 2017
vector_space	DECREASING
train_data	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017
vector_machin	LOW PEAK 2015 HIGH PEAK 2017
name_entiti	LOW PEAK 2014 HIGH PEAK 2015
search_engin	HIGH PEAK 2015
similar_measur	HIGH PEAK 2014
document_frequenc	HIGH PEAK 2014

<b>Theme</b>	<b>Interpretation</b>
featur_extract	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
posit_neg	HIGH PEAK 2014
base_approach	HIGH PEAK 2015
term_weight	HIGH PEAK 2014
text_process	LOW PEAK 2014HIGH PEAK 2015
text_analysi	HIGH PEAK 2015
learn_algorithm	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
word_remov	LOW PEAK 2015HIGH PEAK 2016
space_model	DECREASING
artifici_intellig	HIGH PEAK 2014
cross_valid	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
arab_languag	HIGH PEAK 2015
featur_vector	EQUILIBRIUM
stem_algorithm	HIGH PEAK 2014
cluster_algorithm	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
word_document	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
train_test	LOW PEAK 2016HIGH PEAK 2017
scienc_engin	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
number_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
word_stem	HIGH PEAK 2015
inform_extract	LOW PEAK 2014HIGH PEAK 2015
decis_tree	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
document_collect	HIGH PEAK 2014
semant_analysi	LOW PEAK 2015HIGH PEAK 2016
softwar_engin	HIGH PEAK 2014
document_document	LOW PEAK 2015HIGH PEAK 2016
latent_semant	LOW PEAK 2015HIGH PEAK 2016
invers_document	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
retriev_system	LOW PEAK 2015HIGH PEAK 2016
depart_comput	LOW PEAK 2015HIGH PEAK 2016
bay_classifi	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
test_data	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
cosin_similar	DECREASING
document_term	LOW PEAK 2014HIGH PEAK 2015
data_process	EQUILIBRIUM
data_set	LOW PEAK 2015HIGH PEAK 2017
data_collect	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
rule_base	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016

Theme	Interpretation
word_list	LOW PEAK 2015HIGH PEAK 2016
train_model	LOW PEAK 2014HIGH PEAK 2015
keyword_extract	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
random_forest	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
base_method	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
nearest_neighbor	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
latent_dirichlet	LOW PEAK 2015HIGH PEAK 2016
stem_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
classif_algorithm	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
porter_stemmer	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
speech_tag	LOW PEAK 2014HIGH PEAK 2015
mine_techniqu	HIGH PEAK 2015
knowledg_base	HIGH PEAK 2015
scienc_technolog	HIGH PEAK 2014
electr_engin	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
supervis_learn	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
semant_similar	EQUILIBRIUM
model_base	LOW PEAK 2016HIGH PEAK 2017
base_featur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
engin_comput	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
light_stem	LOW PEAK 2015HIGH PEAK 2016
text_file	LOW PEAK 2015HIGH PEAK 2016
cloud_comput	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
data_analysi	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
document_contain	LOW PEAK 2016HIGH PEAK 2017
dirichlet_alloc	LOW PEAK 2015HIGH PEAK 2016
automat_text	DECREASING
remov_stop	HIGH PEAK 2014
engin_technolog	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
cluster_cluster	LOW PEAK 2015HIGH PEAK 2016
document_classif	EQUILIBRIUM
word_sentenc	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
model_us	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
word_frequenc	LOW PEAK 2015HIGH PEAK 2016
languag_model	LOW PEAK 2015HIGH PEAK 2016
classif_us	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
solv_problem	DECREASING
system_us	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017

Theme	Interpretation
recal_precis	LOW PEAK 2014HIGH PEAK 2015
learn_approach	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
document_summar	HIGH PEAK 2014
frequenc_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
inform_scienc	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
word_text	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
frequenc_term	DECREASING
frequenc_invers	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
improv_perform	LOW PEAK 2016HIGH PEAK 2017
relev_document	LOW PEAK 2015HIGH PEAK 2016
inform_process	HIGH PEAK 2014
comput_applic	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
document_word	LOW PEAK 2015HIGH PEAK 2016
extract_featur	LOW PEAK 2016HIGH PEAK 2017
compar_studi	EQUILIBRIUM
method_base	EQUILIBRIUM
select_method	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
recal_measur	HIGH PEAK 2014
classif_accuraci	EQUILIBRIUM
number_time	HIGH PEAK 2014
topic_topic	LOW PEAK 2014HIGH PEAK 2016
learn_model	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
document_repres	LOW PEAK 2015HIGH PEAK 2017
languag_text	HIGH PEAK 2014
learn_techniqu	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
cluster_method	DECREASING
similar_document	HIGH PEAK 2014
multi_document	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
base_model	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
number_featur	LOW PEAK 2016HIGH PEAK 2017
document_us	DECREASING
knowledg_discoveri	HIGH PEAK 2015
word_appear	DECREASING
word_featur	EQUILIBRIUM
document_vector	DECREASING
mean_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
extract_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
textual_data	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016

Theme	Interpretation
form_word	LOW PEAK 2014HIGH PEAK 2015
model_inform	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
repres_document	LOW PEAK 2015HIGH PEAK 2016
model_model	LOW PEAK 2016HIGH PEAK 2017
process_step	LOW PEAK 2015HIGH PEAK 2017
extract_inform	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
base_similar	LOW PEAK 2017
languag_technolog	LOW PEAK 2014HIGH PEAK 2016
word_base	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
comput_engin	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
scienc_inform	LOW PEAK 2015HIGH PEAK 2016
right_reserv	HIGH PEAK 2014
opinion_mine	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
process_text	HIGH PEAK 2014
evalu_metric	HIGH PEAK 2014 LOW PEAK 2017
manag_system	LOW PEAK 2015HIGH PEAK 2017
classif_task	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
document_number	LOW PEAK 2016HIGH PEAK 2017
stem_process	LOW PEAK 2014HIGH PEAK 2015
test_dataset	HIGH PEAK 2017
document_represent	DECREASING
noun_verb	HIGH PEAK 2014
weight_term	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
us_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
amount_data	HIGH PEAK 2016
word_model	LOW PEAK 2015HIGH PEAK 2016
document_matrix	LOW PEAK 2015HIGH PEAK 2016
number_topic	LOW PEAK 2015HIGH PEAK 2016
fold_cross	LOW PEAK 2014HIGH PEAK 2017
similar_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
word_vector	HIGH PEAK 2014 LOW PEAK 2017
sentenc_document	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
featur_space	LOW PEAK 2015HIGH PEAK 2017
averag_precis	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017
term_base	LOW PEAK 2014HIGH PEAK 2015
mean_cluster	LOW PEAK 2014HIGH PEAK 2016
logist_regress	HIGH PEAK 2017
term_extract	DECREASING

<b>Theme</b>	<b>Interpretation</b>
collect_document	LOW PEAK 2016HIGH PEAK 2017
recal_score	HIGH PEAK 2014
us_data	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
khoja_stemmer	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
text_content	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
stock_market	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
number_cluster	DECREASING
morpholog_analysi	LOW PEAK 2015HIGH PEAK 2016
pattern_recognit	LOW PEAK 2016HIGH PEAK 2017
us_inform	HIGH PEAK 2014
data_data	HIGH PEAK 2014
contain_word	LOW PEAK 2015HIGH PEAK 2016
classif_model	LOW PEAK 2015HIGH PEAK 2017
base_text	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
step_step	LOW PEAK 2014HIGH PEAK 2015
user_queri	HIGH PEAK 2016
model_train	LOW PEAK 2015HIGH PEAK 2016
train_document	LOW PEAK 2016HIGH PEAK 2017
featur_featur	LOW PEAK 2016HIGH PEAK 2017
index_term	DECREASING
select_featur	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
unstructur_data	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
arab_document	DECREASING
us_machin	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
time_consum	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
algorithm_base	LOW PEAK 2014HIGH PEAK 2017
analysi_retriev	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017
knowledg_manag	LOW PEAK 2015HIGH PEAK 2016
cluster_base	EQUILIBRIUM
cluster_document	DECREASING
learn_method	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
improv_accuraci	LOW PEAK 2016HIGH PEAK 2017
word_mean	HIGH PEAK 2015
textual_content	HIGH PEAK 2014
cluster_us	EQUILIBRIUM
human_languag	HIGH PEAK 2015
predict_model	LOW PEAK 2015HIGH PEAK 2017
weight_scheme	LOW PEAK 2014HIGH PEAK 2015

Theme	Interpretation
base_system	EQUILIBRIUM
intellig_system	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
collect_data	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
comput_inform	DECREASING
mobil_devic	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
word_occurr	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
document_text	LOW PEAK 2015HIGH PEAK 2016
classifi_classifi	EQUILIBRIUM
cluster_techniqu	LOW PEAK 2014HIGH PEAK 2015
term_occur	DECREASING
gold_standard	LOW PEAK 2015HIGH PEAK 2016
queri_term	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
mean_algorithm	EQUILIBRIUM
world_wide	LOW PEAK 2014HIGH PEAK 2016
text_preprocess	EQUILIBRIUM
system_develop	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
term_term	LOW PEAK 2014HIGH PEAK 2015
develop_inform	HIGH PEAK 2014
point_view	HIGH PEAK 2015
word_root	HIGH PEAK 2014
recommend_system	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
maximum_entropi	EQUILIBRIUM
stem_stem	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
error_rate	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
plai_role	EQUILIBRIUM
singl_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
prefix_suffix	LOW PEAK 2014HIGH PEAK 2016
imag_process	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
root_word	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
document_retriev	LOW PEAK 2015HIGH PEAK 2016
retriev_document	LOW PEAK 2015HIGH PEAK 2016
spam_filter	LOW PEAK 2015HIGH PEAK 2016
occur_document	LOW PEAK 2015HIGH PEAK 2016
increas_number	LOW PEAK 2015HIGH PEAK 2016
system_base	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
classif_method	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
comput_system	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
inform_gain	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017

<b>Theme</b>	<b>Interpretation</b>
data_train	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
document_similar	LOW PEAK 2015HIGH PEAK 2016
us_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
docu_ment	HIGH PEAK 2015
sourc_text	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
full_text	HIGH PEAK 2016
latent_topic	LOW PEAK 2015HIGH PEAK 2016
model_text	LOW PEAK 2014HIGH PEAK 2015
advanc_comput	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
genet_algorithm	LOW PEAK 2014HIGH PEAK 2017
knowledg_data	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
search_queri	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
frequent_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
inform_text	HIGH PEAK 2014
term_appear	DECREASING
class_label	LOW PEAK 2016HIGH PEAK 2017
train_dataset	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
number_term	EQUILIBRIUM
probabl_distribut	LOW PEAK 2015HIGH PEAK 2016
preprocess_step	EQUILIBRIUM
porter_stem	HIGH PEAK 2015
issn_onlin	HIGH PEAK 2016
linguist_featur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
similar_score	HIGH PEAK 2016
text_retriev	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
evalu_us	LOW PEAK 2014HIGH PEAK 2016
word_occur	LOW PEAK 2015HIGH PEAK 2016
condit_probabl	LOW PEAK 2014HIGH PEAK 2015
data_engin	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
test_document	LOW PEAK 2016HIGH PEAK 2017
process_manag	LOW PEAK 2015HIGH PEAK 2016
exampl_word	EQUILIBRIUM
languag_resourc	EQUILIBRIUM
reduc_number	HIGH PEAK 2014
base_term	LOW PEAK 2015HIGH PEAK 2016
approach_base	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
base_classifi	EQUILIBRIUM
process_techniqu	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017

Theme	Interpretation
fals_posit	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
frequent_pattern	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
comput_commun	EQUILIBRIUM
extract_keyword	HIGH PEAK 2014
deep_learn	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
method_us	LOW PEAK 2014HIGH PEAK 2015
phrase_base	LOW PEAK 2014HIGH PEAK 2015
document_corpu	LOW PEAK 2015HIGH PEAK 2016
inform_knowledg	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
classifi_text	LOW PEAK 2015HIGH PEAK 2017
word_extract	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
word_count	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
retriev_inform	DECREASING
list_word	LOW PEAK 2015HIGH PEAK 2016
structur_data	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
input_data	LOW PEAK 2015HIGH PEAK 2016
appear_document	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
train_classifi	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
sentenc_sentenc	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
classifi_us	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
text_us	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
combin_featur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
classifi_train	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
approach_us	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
document_queri	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
classif_problem	LOW PEAK 2015HIGH PEAK 2017
object_function	LOW PEAK 2015HIGH PEAK 2017
text_corpu	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
process_inform	HIGH PEAK 2015
document_base	DECREASING
infor_mation	LOW PEAK 2016HIGH PEAK 2017
level_featur	LOW PEAK 2015HIGH PEAK 2016
system_perform	LOW PEAK 2015HIGH PEAK 2016
program_languag	LOW PEAK 2015HIGH PEAK 2016
system_applic	LOW PEAK 2016HIGH PEAK 2017
queri_expans	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
word_order	HIGH PEAK 2014
algorithm_algorithm	LOW PEAK 2014HIGH PEAK 2015

Theme	Interpretation
text_base	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
pattern_mine	DECREASING
issn_volum	HIGH PEAK 2015 LOW PEAK 2017
remov_stem	HIGH PEAK 2014
evalu_measur	DECREASING
artifici_neural	EQUILIBRIUM
document_featur	LOW PEAK 2014 HIGH PEAK 2015
view_project	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
model_evalu	LOW PEAK 2015 HIGH PEAK 2016
media_text	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017
euclidean_distanc	EQUILIBRIUM
contain_term	HIGH PEAK 2014
algorithm_perform	LOW PEAK 2015 HIGH PEAK 2016
extract_us	HIGH PEAK 2016
colleg_engin	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
build_model	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017
linguist_analysi	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
engin_scien	HIGH PEAK 2015 LOW PEAK 2016 HIGH PEAK 2017
contain_document	LOW PEAK 2014 HIGH PEAK 2015
singl_document	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
data_structur	LOW PEAK 2014 HIGH PEAK 2016
system_design	HIGH PEAK 2015 LOW PEAK 2016 HIGH PEAK 2017
soft_comput	LOW PEAK 2015 HIGH PEAK 2016
volum_number	HIGH PEAK 2015
relev_inform	LOW PEAK 2014 HIGH PEAK 2015
process_document	LOW PEAK 2015 HIGH PEAK 2016
text_featur	HIGH PEAK 2015
cluster_process	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
word_us	LOW PEAK 2015 HIGH PEAK 2016
classif_process	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
word_term	HIGH PEAK 2016
perform_test	LOW PEAK 2014 HIGH PEAK 2016
input_output	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
user_request	HIGH PEAK 2014
word_embed	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017
random_field	LOW PEAK 2015 HIGH PEAK 2016
featur_base	LOW PEAK 2015 HIGH PEAK 2017
public_http	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016

Theme	Interpretation
word_topic	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017
number_iter	LOW PEAK 2015HIGH PEAK 2017
unigram_bigram	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
allow_user	LOW PEAK 2014HIGH PEAK 2016
design_implement	LOW PEAK 2014HIGH PEAK 2015
content_base	HIGH PEAK 2014
semant_index	LOW PEAK 2015HIGH PEAK 2016
cluster_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
mathemat_model	EQUILIBRIUM
document_process	LOW PEAK 2015HIGH PEAK 2016
algorithm_us	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
period_time	EQUILIBRIUM
word_sens	LOW PEAK 2014HIGH PEAK 2015
content_page	HIGH PEAK 2014
wide_rang	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
comput_time	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
autom_text	LOW PEAK 2015HIGH PEAK 2016
document_topic	LOW PEAK 2015HIGH PEAK 2016
syntact_semant	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
method_text	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
unsupervis_learn	HIGH PEAK 2015
discoveri_data	LOW PEAK 2014HIGH PEAK 2015
informa_tion	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
data_text	EQUILIBRIUM
topic_document	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017
emot_recognit	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
perform_us	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
base_word	LOW PEAK 2015HIGH PEAK 2016
vector_represent	LOW PEAK 2015HIGH PEAK 2016
us_featur	LOW PEAK 2014HIGH PEAK 2015
measur_similar	HIGH PEAK 2014
corpu_base	LOW PEAK 2014HIGH PEAK 2015
text_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
graph_base	HIGH PEAK 2014
semant_featur	HIGH PEAK 2014
confus_matrix	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
emot_classif	LOW PEAK 2015HIGH PEAK 2017
network_analysi	DECREASING

Theme	Interpretation
unstructur_text	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
origin_document	LOW PEAK 2014HIGH PEAK 2015
proc_conf	EQUILIBRIUM
sentenc_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
distanc_measur	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
berlin_heidelberg	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
measur_precis	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
similar_sentenc	HIGH PEAK 2014
represent_document	LOW PEAK 2014HIGH PEAK 2015
train_corpu	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
uniqu_word	LOW PEAK 2015HIGH PEAK 2016
data_model	HIGH PEAK 2015
hierarch_cluster	LOW PEAK 2016HIGH PEAK 2017
probabilist_model	HIGH PEAK 2014
evalu_perform	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
model_perform	LOW PEAK 2015HIGH PEAK 2016
word_level	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
pattern_base	HIGH PEAK 2014
classif_techniqu	LOW PEAK 2015HIGH PEAK 2017
calcul_us	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
data_sourc	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
occurr_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
commun_technolog	LOW PEAK 2015HIGH PEAK 2017
stem_arab	HIGH PEAK 2014
inform_commun	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
taken_account	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
fals_neg	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
tweet_contain	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
occurr_term	HIGH PEAK 2014
base_cluster	LOW PEAK 2016HIGH PEAK 2017
reduc_dimension	EQUILIBRIUM
system_evalu	LOW PEAK 2014HIGH PEAK 2015
word_given	LOW PEAK 2015HIGH PEAK 2016
mine_text	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
dataset_dataset	LOW PEAK 2014HIGH PEAK 2015
process_time	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
time_period	HIGH PEAK 2014
automat_extract	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017

Theme	Interpretation
dataset_consist	HIGH PEAK 2014
file_contain	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
test_perform	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
share_task	HIGH PEAK 2016
document_train	DECREASING
word_cluster	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
user_gener	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
base_semant	LOW PEAK 2014HIGH PEAK 2016
statist_analysi	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
transact_knowledg	HIGH PEAK 2014
model_built	HIGH PEAK 2017
twitter_user	LOW PEAK 2014HIGH PEAK 2016
model_document	LOW PEAK 2014HIGH PEAK 2015
retriev_relev	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
gram_gram	EQUILIBRIUM
speech_recognit	LOW PEAK 2015HIGH PEAK 2016
linear_regress	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
data_point	EQUILIBRIUM
common_word	LOW PEAK 2015HIGH PEAK 2016
signal_process	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
calcul_similar	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
system_system	HIGH PEAK 2015
model_data	LOW PEAK 2015HIGH PEAK 2017
standard_arab	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
perform_system	HIGH PEAK 2016
valu_calcul	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
cluster_similar	LOW PEAK 2014HIGH PEAK 2015
classif_text	LOW PEAK 2016HIGH PEAK 2017
frequenc_document	HIGH PEAK 2014
perform_evalu	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
precis_measur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
algorithm_appli	LOW PEAK 2014HIGH PEAK 2015
text_classifi	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
model_predict	LOW PEAK 2014HIGH PEAK 2016
analysi_method	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
algo_rithm	HIGH PEAK 2016
distribut_topic	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
classifi_document	LOW PEAK 2014HIGH PEAK 2015

Theme	Interpretation
text_collect	LOW PEAK 2014HIGH PEAK 2015
extract_term	LOW PEAK 2015HIGH PEAK 2016
repres_vector	LOW PEAK 2016HIGH PEAK 2017
word_categori	LOW PEAK 2014HIGH PEAK 2015
accuraci_precis	LOW PEAK 2014HIGH PEAK 2016
punctuat_mark	LOW PEAK 2014HIGH PEAK 2015
test_set	LOW PEAK 2015HIGH PEAK 2017
data_extract	HIGH PEAK 2014
comput_technolog	LOW PEAK 2015HIGH PEAK 2017
word_represent	LOW PEAK 2014HIGH PEAK 2015
tabl_perform	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
neg_exampl	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
featur_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
rule_mine	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
test_test	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
us_porter	LOW PEAK 2016
content_document	DECREASING
word_gener	HIGH PEAK 2014
document_model	LOW PEAK 2015HIGH PEAK 2016
gener_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
featur_valu	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
highest_accuraci	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
mine_method	HIGH PEAK 2014
develop_model	HIGH PEAK 2014
lexic_databas	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
regress_model	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
tweet_user	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
class_class	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
classif_cluster	LOW PEAK 2015HIGH PEAK 2016
featur_text	EQUILIBRIUM
stem_stop	LOW PEAK 2015HIGH PEAK 2016
process_system	HIGH PEAK 2015
process_extract	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
develop_system	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
implement_us	LOW PEAK 2015HIGH PEAK 2017
request_enhanc	HIGH PEAK 2014
dataset_contain	EQUILIBRIUM
extract_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017

Theme	Interpretation
model_featur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
comput_vision	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
us_classifi	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
train_exampl	LOW PEAK 2015HIGH PEAK 2016
evalu_system	LOW PEAK 2015HIGH PEAK 2017
word_contain	LOW PEAK 2015HIGH PEAK 2016
method_appli	LOW PEAK 2015HIGH PEAK 2016
extract_method	LOW PEAK 2014HIGH PEAK 2015
token_token	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
repres_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
retriev_text	HIGH PEAK 2015
discuss_stat	HIGH PEAK 2014
enhanc_download	HIGH PEAK 2014
public_stat	HIGH PEAK 2014
view_public	HIGH PEAK 2014
word_dictionari	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
cluster_number	LOW PEAK 2015HIGH PEAK 2016
word_repres	HIGH PEAK 2014 LOW PEAK 2017
correl_coeffici	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
statist_machin	HIGH PEAK 2015
porter_algorithm	HIGH PEAK 2014
twitter_data	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
mine_algorithm	EQUILIBRIUM
extract_document	HIGH PEAK 2014
sentenc_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
semant_relationship	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
techniqu_text	EQUILIBRIUM
make_process	EQUILIBRIUM
human_resourc	EQUILIBRIUM
qualiti_cluster	LOW PEAK 2014HIGH PEAK 2015
relev_featur	LOW PEAK 2014HIGH PEAK 2017
manual_label	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
represent_model	EQUILIBRIUM
word_consid	LOW PEAK 2015HIGH PEAK 2016
publicli_avail	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
automat_index	DECREASING
springer_verlag	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
distribut_word	LOW PEAK 2015HIGH PEAK 2016

Theme	Interpretation
keyword_text	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
word_similar	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
root_stem	LOW PEAK 2014 HIGH PEAK 2015
measur_accuraci	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
cluster_approach	LOW PEAK 2015 HIGH PEAK 2016
classif_approach	LOW PEAK 2014 HIGH PEAK 2015
interest_includ	LOW PEAK 2015 HIGH PEAK 2016
inform_document	HIGH PEAK 2014
mine_inform	LOW PEAK 2014 HIGH PEAK 2015
document_index	LOW PEAK 2015 HIGH PEAK 2016
featur_document	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
model_repres	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
neg_word	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
sequenc_word	EQUILIBRIUM
perform_model	LOW PEAK 2015 HIGH PEAK 2016
sens_disambigu	LOW PEAK 2014 HIGH PEAK 2015
data_base	HIGH PEAK 2015 LOW PEAK 2016 HIGH PEAK 2017
model_select	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
search_space	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
tweet_tweet	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
predict_stock	EQUILIBRIUM
classifi_base	LOW PEAK 2015 HIGH PEAK 2017
select_text	LOW PEAK 2016 HIGH PEAK 2017
bay_algorithm	EQUILIBRIUM
represent_text	LOW PEAK 2014 HIGH PEAK 2015
resourc_evalu	LOW PEAK 2016 HIGH PEAK 2017
dimension_space	LOW PEAK 2015 HIGH PEAK 2016
main_idea	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017
tree_structur	LOW PEAK 2016 HIGH PEAK 2017
algorithm_cluster	HIGH PEAK 2015
word_stop	LOW PEAK 2015 HIGH PEAK 2016
measur_measur	LOW PEAK 2014 HIGH PEAK 2015
extract_sentenc	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
problem_solv	LOW PEAK 2014 HIGH PEAK 2015
word_corpu	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
word_found	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
base_search	EQUILIBRIUM
data_store	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016

Theme	Interpretation
neg_neutral	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
issu_march	EQUILIBRIUM
search_algorithm	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
recal_valu	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
techniqu_base	LOW PEAK 2014HIGH PEAK 2015
data_preprocess	EQUILIBRIUM
method_perform	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
obtain_us	LOW PEAK 2015HIGH PEAK 2017
statist_model	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
accuraci_rate	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
textual_inform	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
cluster_data	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
test_collect	LOW PEAK 2014HIGH PEAK 2016
semant_inform	HIGH PEAK 2014
assist_professor	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
weight_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
bayesian_classifi	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
given_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
word_filter	LOW PEAK 2014HIGH PEAK 2016
content_word	HIGH PEAK 2014
execut_time	LOW PEAK 2015HIGH PEAK 2017
highest_score	LOW PEAK 2015HIGH PEAK 2017
repres_number	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
analyz_data	LOW PEAK 2016HIGH PEAK 2017
model_gener	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
repres_word	EQUILIBRIUM
languag_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
topic_word	HIGH PEAK 2016
represent_word	EQUILIBRIUM
tweet_us	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
base_algorithm	LOW PEAK 2015HIGH PEAK 2016
model_paramet	LOW PEAK 2015HIGH PEAK 2016
document_sentenc	EQUILIBRIUM
content_text	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
method_automat	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
user_user	LOW PEAK 2015HIGH PEAK 2016
further_process	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
system_implement	HIGH PEAK 2014

Theme	Interpretation
process_perform	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
springer_berlin	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
accuraci_us	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
technolog_comput	HIGH PEAK 2014
volum_page	HIGH PEAK 2016
featur_gener	LOW PEAK 2015 HIGH PEAK 2016
perform_measur	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017
base_analysi	LOW PEAK 2015 HIGH PEAK 2016
amount_inform	LOW PEAK 2016 HIGH PEAK 2017
document_level	LOW PEAK 2015 HIGH PEAK 2016
input_document	HIGH PEAK 2014
sentenc_base	HIGH PEAK 2014
mine_applic	LOW PEAK 2014 HIGH PEAK 2015
valu_term	LOW PEAK 2014 HIGH PEAK 2017
word_cloud	LOW PEAK 2016 HIGH PEAK 2017
root_form	EQUILIBRIUM
improv_qualiti	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
societi_inform	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
us_algorithm	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017
model_develop	LOW PEAK 2015 HIGH PEAK 2017
previou_studi	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
posit_word	HIGH PEAK 2015
text_contain	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017
detect_system	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
charact_recognit	LOW PEAK 2015 HIGH PEAK 2017
model_test	HIGH PEAK 2015 LOW PEAK 2016 HIGH PEAK 2017
frequent_itemset	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017
measur_perform	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
document_calcul	LOW PEAK 2014 HIGH PEAK 2015
gibb_sampl	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
solut_problem	HIGH PEAK 2015
avail_onlin	LOW PEAK 2015 HIGH PEAK 2017
weight_assign	LOW PEAK 2016 HIGH PEAK 2017
model_topic	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017
measur_text	HIGH PEAK 2015
help_user	LOW PEAK 2015 HIGH PEAK 2016
cluster_perform	LOW PEAK 2015 HIGH PEAK 2016
rank_document	LOW PEAK 2014 HIGH PEAK 2016

Theme	Interpretation
train_sampl	LOW PEAK 2015HIGH PEAK 2017
perform_experi	LOW PEAK 2016HIGH PEAK 2017
previou_step	EQUILIBRIUM
step_process	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
time_complex	DECREASING
number_text	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
us_techniqu	EQUILIBRIUM
find_similar	EQUILIBRIUM
correctli_classifi	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
word_process	HIGH PEAK 2016
languag_arab	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
type_data	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
data_avail	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
mine_data	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
number_user	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
extract_system	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
dimension_vector	EQUILIBRIUM
learn_text	LOW PEAK 2015HIGH PEAK 2017
techniqu_appli	EQUILIBRIUM
semant_mean	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
similar_valu	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
charact_word	LOW PEAK 2015HIGH PEAK 2016
cluster_centroid	LOW PEAK 2016HIGH PEAK 2017
function_word	LOW PEAK 2015HIGH PEAK 2016
user_search	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
word_number	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
order_reduc	HIGH PEAK 2014
degre_comput	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
dimension_data	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
exist_method	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
extract_data	HIGH PEAK 2014
vector_word	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017
knowledg_engin	HIGH PEAK 2016
scienc_depart	HIGH PEAK 2014
string_match	LOW PEAK 2014HIGH PEAK 2015
main_problem	HIGH PEAK 2014
model_classifi	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
measur_us	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016

Theme	Interpretation
origin_text	HIGH PEAK 2014
statist_inform	LOW PEAK 2014 HIGH PEAK 2016
measur_evalu	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017
find_relev	HIGH PEAK 2014
arab_corpu	HIGH PEAK 2015
system_architectur	HIGH PEAK 2015
assign_weight	EQUILIBRIUM
mean_text	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
addit_featur	LOW PEAK 2015 HIGH PEAK 2017
topic_base	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
weight_averag	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
word_token	HIGH PEAK 2016 LOW PEAK 2017
group_group	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
process_model	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
score_score	HIGH PEAK 2016
preprocess_text	LOW PEAK 2015 HIGH PEAK 2017
algorithm_document	LOW PEAK 2014 HIGH PEAK 2015
classifi_perform	LOW PEAK 2015 HIGH PEAK 2016
word_semant	DECREASING
analysi_document	LOW PEAK 2014 HIGH PEAK 2015
us_term	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
combin_word	LOW PEAK 2015 HIGH PEAK 2016
network_base	DECREASING
time_term	HIGH PEAK 2015
gener_topic	LOW PEAK 2015 HIGH PEAK 2016
improv_effici	HIGH PEAK 2015 LOW PEAK 2016 HIGH PEAK 2017
data_contain	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017
free_text	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
linear_combin	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
system_extract	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
classifi_test	LOW PEAK 2015 HIGH PEAK 2017
tech_niqu	LOW PEAK 2015 HIGH PEAK 2016
us_train	LOW PEAK 2015 HIGH PEAK 2017
word_common	LOW PEAK 2015 HIGH PEAK 2016
count_number	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
evalu_model	LOW PEAK 2015 HIGH PEAK 2016
experi_perform	EQUILIBRIUM
classif_base	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017

Theme	Interpretation
featur_train	EQUILIBRIUM
mine_us	HIGH PEAK 2015
term_text	EQUILIBRIUM
model_method	LOW PEAK 2015HIGH PEAK 2017
provid_inform	EQUILIBRIUM
start_point	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
process_method	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
textual_document	HIGH PEAK 2014 LOW PEAK 2017
applic_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
corpu_document	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
gener_model	LOW PEAK 2015HIGH PEAK 2016
group_similar	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
lexicon_base	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
valu_document	LOW PEAK 2015HIGH PEAK 2016
data_test	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
word_select	HIGH PEAK 2014
base_topic	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
human_factor	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
predefin_categori	LOW PEAK 2015HIGH PEAK 2017
classifi_categori	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
document_total	LOW PEAK 2016HIGH PEAK 2017
sentenc_length	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
word_approach	LOW PEAK 2014HIGH PEAK 2015
cluster_qualiti	EQUILIBRIUM
collect_text	EQUILIBRIUM
maximum_likelihood	LOW PEAK 2015HIGH PEAK 2016
measur_valu	LOW PEAK 2015HIGH PEAK 2016
us_support	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
word_includ	LOW PEAK 2015HIGH PEAK 2016
document_consid	HIGH PEAK 2014
empir_studi	LOW PEAK 2015HIGH PEAK 2016
system_test	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
comput_similar	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017
corpu_text	LOW PEAK 2015HIGH PEAK 2017
morgan_kaufmann	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
stem_us	HIGH PEAK 2014
averag_number	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
frequenc_count	LOW PEAK 2015HIGH PEAK 2016

<b>Theme</b>	<b>Interpretation</b>
includ_text	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
techniqu_extract	HIGH PEAK 2016
develop_method	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
given_word	HIGH PEAK 2015
process_reduc	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
train_us	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
us_simpl	LOW PEAK 2015HIGH PEAK 2017
word_context	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
wordnet_lexic	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
emot_categor	EQUILIBRIUM
represent_us	HIGH PEAK 2014
time_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
word_exampl	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
issu_issn	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
posit_fals	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
user_tweet	LOW PEAK 2016HIGH PEAK 2017
weight_approach	EQUILIBRIUM
index_document	LOW PEAK 2015HIGH PEAK 2016
perform_classifi	LOW PEAK 2015HIGH PEAK 2016
address_problem	LOW PEAK 2015HIGH PEAK 2017
document_rank	LOW PEAK 2015HIGH PEAK 2016
pattern_analysi	EQUILIBRIUM
us_vector	LOW PEAK 2015HIGH PEAK 2016
princip_compon	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
term_number	DECREASING
mine_task	DECREASING
perform_cluster	LOW PEAK 2015HIGH PEAK 2017
take_advantag	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
algorithm_stem	LOW PEAK 2015HIGH PEAK 2017
white_space	EQUILIBRIUM
featur_us	LOW PEAK 2014HIGH PEAK 2015
graph_node	LOW PEAK 2014HIGH PEAK 2015
weight_calcul	LOW PEAK 2015HIGH PEAK 2016
spam_detect	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
store_databas	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
mixtur_model	HIGH PEAK 2014
method_evalu	LOW PEAK 2014HIGH PEAK 2016
inform_avail	DECREASING

Theme	Interpretation
precis_valu	LOW PEAK 2015HIGH PEAK 2016
suffix_strip	DECREASING
sourc_inform	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
featur_repres	LOW PEAK 2015HIGH PEAK 2017
classifi_featur	EQUILIBRIUM
process_word	HIGH PEAK 2014
algorithm_develop	LOW PEAK 2015HIGH PEAK 2016
main_reason	LOW PEAK 2014HIGH PEAK 2016
base_stem	HIGH PEAK 2015
comput_approach	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
given_queri	LOW PEAK 2015HIGH PEAK 2016
perform_algorithm	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
stopword_remov	HIGH PEAK 2015
inform_word	LOW PEAK 2014HIGH PEAK 2016
model_word	EQUILIBRIUM
optic_charact	LOW PEAK 2015HIGH PEAK 2017
scienc_applic	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
learn_object	EQUILIBRIUM
automat_evalu	LOW PEAK 2015HIGH PEAK 2016
vector_featur	DECREASING
model_compar	LOW PEAK 2015HIGH PEAK 2017
term_select	LOW PEAK 2014HIGH PEAK 2017
us_gram	EQUILIBRIUM
user_defin	LOW PEAK 2014HIGH PEAK 2015
base_user	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
index_process	LOW PEAK 2015HIGH PEAK 2016
similar_mean	LOW PEAK 2014HIGH PEAK 2016
gram_base	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
sourc_data	LOW PEAK 2015HIGH PEAK 2016
text_messag	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
technolog_volum	LOW PEAK 2014HIGH PEAK 2016
analysi_social	HIGH PEAK 2016
base_techniqu	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
dataset_train	LOW PEAK 2015HIGH PEAK 2016
select_algorithm	EQUILIBRIUM
token_stop	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
us_wordnet	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
valu_pair	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017

Theme	Interpretation
base_represent	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
facebook_twitter	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
us_wikipedia	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
class_number	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
dimension_featur	EQUILIBRIUM
extract_techniqu	LOW PEAK 2014HIGH PEAK 2015
model_automat	EQUILIBRIUM
european_languag	EQUILIBRIUM
text_repres	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
comput_network	EQUILIBRIUM
method_combin	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
word_match	EQUILIBRIUM
algorithm_find	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
data_consist	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
featur_includ	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
form_stem	LOW PEAK 2015HIGH PEAK 2017
token_process	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
weight_vector	LOW PEAK 2015HIGH PEAK 2016
consist_document	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
sentenc_structur	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
system_consist	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
test_model	HIGH PEAK 2014
analysi_machin	EQUILIBRIUM
frequenc_weight	EQUILIBRIUM
measur_calcul	LOW PEAK 2015HIGH PEAK 2016
workshop_comput	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
text_dataset	LOW PEAK 2015HIGH PEAK 2017
us_equat	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
collect_corpu	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
lexic_featur	HIGH PEAK 2014
mean_valu	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
model_extract	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
perform_analysi	HIGH PEAK 2015
corpu_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
model_system	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
us_rule	HIGH PEAK 2014
concept_document	HIGH PEAK 2014
categori_categori	LOW PEAK 2014HIGH PEAK 2015

Theme	Interpretation
length_document	LOW PEAK 2014HIGH PEAK 2015
north_chapter	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
overal_perform	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
document_length	LOW PEAK 2014HIGH PEAK 2015
cluster_accuraci	LOW PEAK 2015HIGH PEAK 2016
good_perform	LOW PEAK 2016HIGH PEAK 2017
list_stop	EQUILIBRIUM
index_html	LOW PEAK 2015HIGH PEAK 2016
algorithm_implement	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
convert_text	EQUILIBRIUM
word_elimin	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
improv_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
collect_tweet	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
count_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
extract_knowledg	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
statist_signific	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
emot_text	EQUILIBRIUM
knowledg_extract	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
term_queri	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
semant_evalu	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
method_extract	LOW PEAK 2015HIGH PEAK 2016
overal_accuraci	LOW PEAK 2015HIGH PEAK 2016
repres_term	LOW PEAK 2017
approach_automat	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
automat_classifi	LOW PEAK 2014HIGH PEAK 2015
method_describ	LOW PEAK 2015HIGH PEAK 2016
languag_specif	LOW PEAK 2016HIGH PEAK 2017
node_repres	LOW PEAK 2015HIGH PEAK 2016
topic_text	LOW PEAK 2014HIGH PEAK 2015
difficult_task	LOW PEAK 2015HIGH PEAK 2016
access_inform	LOW PEAK 2014HIGH PEAK 2015
depart_inform	EQUILIBRIUM
naïv_bayesian	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
queri_word	LOW PEAK 2014HIGH PEAK 2016
caus_effect	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
comput_base	EQUILIBRIUM
fine_grain	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
measur_defin	HIGH PEAK 2015

Theme	Interpretation
text_written	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
distribut_document	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
lower_case	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
recognit_system	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
semi_automat	HIGH PEAK 2014
consist_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
context_base	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
dataset_us	HIGH PEAK 2016
process_phase	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
us_corpu	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
word_distribut	HIGH PEAK 2015 LOW PEAK 2017
term_occurr	LOW PEAK 2016HIGH PEAK 2017
method_cluster	LOW PEAK 2016HIGH PEAK 2017
token_text	EQUILIBRIUM
compon_analysi	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
gener_term	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
semant_structur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
stem_reduc	LOW PEAK 2015HIGH PEAK 2016
term_accuraci	EQUILIBRIUM
cluster_word	HIGH PEAK 2014
document_given	LOW PEAK 2015HIGH PEAK 2016
system_text	DECREASING
text_understand	LOW PEAK 2015HIGH PEAK 2016
us_mean	LOW PEAK 2015HIGH PEAK 2016
document_extract	DECREASING
frequenc_calcul	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
document_group	LOW PEAK 2015HIGH PEAK 2016
domain_knowledg	LOW PEAK 2014HIGH PEAK 2015
gener_content	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
learn_data	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
retriev_base	LOW PEAK 2015HIGH PEAK 2016
algorithm_mean	LOW PEAK 2015HIGH PEAK 2016
approach_perform	DECREASING
model_approach	LOW PEAK 2014HIGH PEAK 2017
network_us	LOW PEAK 2015HIGH PEAK 2017
gram_word	EQUILIBRIUM
model_combin	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
stemmer_algorithm	EQUILIBRIUM

Theme	Interpretation
valu_paramet	LOW PEAK 2016HIGH PEAK 2017
valu_word	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
accuraci_tabl	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
assign_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
base_measur	LOW PEAK 2014HIGH PEAK 2015
process_approach	LOW PEAK 2016HIGH PEAK 2017
us_latent	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
gener_algorithm	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
preprocess_techniqu	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
rule_rule	HIGH PEAK 2015
level_text	HIGH PEAK 2015
process_base	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
relev_queri	LOW PEAK 2015HIGH PEAK 2016
document_test	LOW PEAK 2015HIGH PEAK 2017
document_accord	LOW PEAK 2016HIGH PEAK 2017
order_evalu	LOW PEAK 2016HIGH PEAK 2017
base_learn	LOW PEAK 2015HIGH PEAK 2017
algorithm_suffix	HIGH PEAK 2014
approach_featur	EQUILIBRIUM
time_process	LOW PEAK 2015HIGH PEAK 2017
equal_number	LOW PEAK 2014HIGH PEAK 2015
improv_cluster	LOW PEAK 2016HIGH PEAK 2017
classif_document	LOW PEAK 2015HIGH PEAK 2016
gener_process	LOW PEAK 2014HIGH PEAK 2016
jordan_latent	LOW PEAK 2015HIGH PEAK 2016
label_train	LOW PEAK 2015HIGH PEAK 2016
model_describ	LOW PEAK 2015HIGH PEAK 2016
us_topic	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
base_machin	EQUILIBRIUM
frequenc_number	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
process_includ	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
word_assign	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017
automat_classif	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
calcul_term	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
signific_improv	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
stage_process	EQUILIBRIUM
valu_indic	LOW PEAK 2014HIGH PEAK 2015
analysi_tool	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016

Theme	Interpretation
gener_method	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
vector_us	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
origin_data	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
comput_secur	LOW PEAK 2014HIGH PEAK 2016
engin_depart	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
frequent_item	HIGH PEAK 2015
http_github	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
increas_perform	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
occurr_document	LOW PEAK 2016HIGH PEAK 2017
similar_cluster	LOW PEAK 2014HIGH PEAK 2016
studi_featur	LOW PEAK 2015HIGH PEAK 2017
token_stem	LOW PEAK 2015HIGH PEAK 2016
us_weight	LOW PEAK 2014HIGH PEAK 2017
word_reduc	LOW PEAK 2015HIGH PEAK 2016
base_number	EQUILIBRIUM
data_includ	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
dataset_collect	LOW PEAK 2015HIGH PEAK 2016
find_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
learn_train	HIGH PEAK 2014 LOW PEAK 2017
reduc_time	LOW PEAK 2016HIGH PEAK 2017
weight_document	DECREASING
word_collect	EQUILIBRIUM
corpu_train	LOW PEAK 2014HIGH PEAK 2016
learn_system	LOW PEAK 2015HIGH PEAK 2017
accuraci_classif	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
algorithm_compar	LOW PEAK 2014HIGH PEAK 2016
base_form	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
contain_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
dataset_experi	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
pair_word	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
approach_combin	LOW PEAK 2015HIGH PEAK 2016
includ_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
problem_text	LOW PEAK 2014HIGH PEAK 2015
reduct_techniqu	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
remov_punctuat	EQUILIBRIUM
score_system	LOW PEAK 2015HIGH PEAK 2016
select_document	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
type_featur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016

Theme	Interpretation
us_model	LOW PEAK 2015HIGH PEAK 2017
mobil_phone	LOW PEAK 2015HIGH PEAK 2016
select_relev	HIGH PEAK 2014
system_data	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
gener_us	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
order_extract	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
perfor_manc	HIGH PEAK 2015
recal_recal	HIGH PEAK 2014
rule_extract	LOW PEAK 2014HIGH PEAK 2015
structur_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
word_train	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
combin_model	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
data_classif	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
time_featur	LOW PEAK 2015HIGH PEAK 2017
gener_categori	LOW PEAK 2015HIGH PEAK 2016
model_term	LOW PEAK 2016HIGH PEAK 2017
probabilist_latent	EQUILIBRIUM
search_word	LOW PEAK 2014HIGH PEAK 2016
order_word	LOW PEAK 2015HIGH PEAK 2016
predict_class	LOW PEAK 2016HIGH PEAK 2017
base_applic	LOW PEAK 2016HIGH PEAK 2017
bay_classif	LOW PEAK 2014HIGH PEAK 2017
binari_classif	LOW PEAK 2015HIGH PEAK 2016
learn_inform	LOW PEAK 2015HIGH PEAK 2016
note_comput	LOW PEAK 2016HIGH PEAK 2017
number_class	DECREASING
perform_inform	LOW PEAK 2014HIGH PEAK 2016
techniqu_find	HIGH PEAK 2014
main_step	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
make_difficult	LOW PEAK 2015HIGH PEAK 2016
servic_servic	EQUILIBRIUM
method_classif	LOW PEAK 2015HIGH PEAK 2017
model_latent	EQUILIBRIUM
model_process	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
statist_measur	LOW PEAK 2015HIGH PEAK 2016
stem_method	HIGH PEAK 2014
topic_gener	LOW PEAK 2015HIGH PEAK 2016
tradit_approach	LOW PEAK 2015HIGH PEAK 2017

Theme	Interpretation
data_format	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
featur_term	LOW PEAK 2014HIGH PEAK 2015
posit_class	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
score_function	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
term_precis	LOW PEAK 2015HIGH PEAK 2016
total_word	EQUILIBRIUM
divid_number	LOW PEAK 2014HIGH PEAK 2016
present_model	EQUILIBRIUM
word_group	LOW PEAK 2014HIGH PEAK 2015
approach_develop	HIGH PEAK 2015
compar_word	HIGH PEAK 2014 LOW PEAK 2017
find_optim	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
further_improv	EQUILIBRIUM
probabl_word	HIGH PEAK 2016
proce_ing	LOW PEAK 2014HIGH PEAK 2016
data_form	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
neg_sentiment	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
servic_orient	LOW PEAK 2016HIGH PEAK 2017
cluster_gener	DECREASING
train_phase	LOW PEAK 2015HIGH PEAK 2016
cluster_mean	LOW PEAK 2015HIGH PEAK 2016
document_set	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017
file_file	LOW PEAK 2015HIGH PEAK 2016
inform_sourc	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
neighbor_algorithm	LOW PEAK 2015HIGH PEAK 2016
preprocess_document	LOW PEAK 2015HIGH PEAK 2016
structur_inform	DECREASING
us_approach	LOW PEAK 2015HIGH PEAK 2016
dataset_evalu	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
mine_pattern	EQUILIBRIUM
model_user	EQUILIBRIUM
model_vector	LOW PEAK 2016HIGH PEAK 2017
size_data	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
struc_ture	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
calcul_number	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
number_charact	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
system_support	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
us_combin	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017

Theme	Interpretation
user_interact	EQUILIBRIUM
data_represent	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
experi_evalu	LOW PEAK 2015 HIGH PEAK 2017
gener_purpos	LOW PEAK 2015 HIGH PEAK 2016
linguist_human	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
tech_nologi	LOW PEAK 2014 HIGH PEAK 2015
word_frequent	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
automat_process	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
remov_prefix	HIGH PEAK 2016
select_word	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017
us_naiv	EQUILIBRIUM
correct_word	LOW PEAK 2015 HIGH PEAK 2016
perform_poorli	LOW PEAK 2014 HIGH PEAK 2016
type_type	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
retriev_perform	LOW PEAK 2016 HIGH PEAK 2017
effect_featur	DECREASING
data_gather	LOW PEAK 2016 HIGH PEAK 2017
inform_filter	LOW PEAK 2015 HIGH PEAK 2016
overcom_problem	LOW PEAK 2016 HIGH PEAK 2017
method_arab	LOW PEAK 2014 HIGH PEAK 2015
reduc_size	LOW PEAK 2015 HIGH PEAK 2017
stem_techniqu	DECREASING
us_document	LOW PEAK 2016 HIGH PEAK 2017
import_word	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017
perform_featur	EQUILIBRIUM
approach_classifi	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
perform_document	LOW PEAK 2014 HIGH PEAK 2016
algorithm_data	EQUILIBRIUM
cluster_group	EQUILIBRIUM
estim_probabl	LOW PEAK 2014 HIGH PEAK 2016
given_topic	LOW PEAK 2015 HIGH PEAK 2016
model_implement	LOW PEAK 2015 HIGH PEAK 2016
order_achiev	LOW PEAK 2015 HIGH PEAK 2016
vector_model	EQUILIBRIUM
inform_data	LOW PEAK 2014 HIGH PEAK 2016
total_document	LOW PEAK 2016 HIGH PEAK 2017
document_comput	HIGH PEAK 2014
algorithm_test	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016

<b>Theme</b>	<b>Interpretation</b>
fuzzi_set	HIGH PEAK 2014 LOW PEAK 2017
system_process	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
term_semant	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
token_part	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
train_train	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
tree_algorithm	HIGH PEAK 2015
detect_us	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017
help_identifi	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017
input_word	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
contain_number	LOW PEAK 2015 HIGH PEAK 2016
group_document	LOW PEAK 2014 HIGH PEAK 2015
approach_analyz	LOW PEAK 2014 HIGH PEAK 2016
method_consid	EQUILIBRIUM
document_user	EQUILIBRIUM
languag_base	LOW PEAK 2015 HIGH PEAK 2016
commun_engin	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017
corpu_number	HIGH PEAK 2014
perform_term	HIGH PEAK 2014 LOW PEAK 2017
collect_word	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
detail_descript	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
inform_us	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017
tree_classifi	DECREASING
word_exist	LOW PEAK 2014 HIGH PEAK 2015
analysi_opinion	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
effect_us	EQUILIBRIUM
method_measur	LOW PEAK 2014 HIGH PEAK 2016
paramet_valu	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
supervis_unsupervis	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017
text_consid	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
averag_valu	LOW PEAK 2014 HIGH PEAK 2015
bay_theorem	LOW PEAK 2015 HIGH PEAK 2017
evalu_classifi	LOW PEAK 2015 HIGH PEAK 2016
pattern_gener	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
perform_improv	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
preprocess_data	LOW PEAK 2014 HIGH PEAK 2016
test_system	EQUILIBRIUM
word_search	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
faculti_scienc	HIGH PEAK 2015 LOW PEAK 2016 HIGH PEAK 2017

Theme	Interpretation
form_us	HIGH PEAK 2015
linguist_resourc	HIGH PEAK 2015
semant_network	HIGH PEAK 2015
variou_featur	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
written_text	LOW PEAK 2014 HIGH PEAK 2016
catégori_word	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
context_awar	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
extract_tweet	HIGH PEAK 2016
order_logic	LOW PEAK 2014 HIGH PEAK 2015
select_term	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
simpl_word	EQUILIBRIUM
appear_frequent	LOW PEAK 2014 HIGH PEAK 2016
method_select	LOW PEAK 2014 HIGH PEAK 2017
modern_inform	LOW PEAK 2015 HIGH PEAK 2016
term_gener	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017
evalu_evalu	LOW PEAK 2014 HIGH PEAK 2016
method_improv	LOW PEAK 2015 HIGH PEAK 2017
model_defin	LOW PEAK 2015 HIGH PEAK 2016
multinomi_distribut	LOW PEAK 2017
size_train	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017
specif_topic	LOW PEAK 2017
approach_cluster	EQUILIBRIUM
describ_detail	LOW PEAK 2014 HIGH PEAK 2015
document_thu	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
gram_model	EQUILIBRIUM
train_time	LOW PEAK 2014 HIGH PEAK 2016
convert_word	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017
divid_total	LOW PEAK 2014 HIGH PEAK 2015
improv_precis	LOW PEAK 2015 HIGH PEAK 2016
document_order	LOW PEAK 2014 HIGH PEAK 2015
gram_featur	HIGH PEAK 2014 LOW PEAK 2017
main_featur	LOW PEAK 2014 HIGH PEAK 2015
mine_machin	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
repr_sent	LOW PEAK 2014 HIGH PEAK 2015
test_evalu	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017
websit_http	LOW PEAK 2015 HIGH PEAK 2016
calcul_frequenc	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
comput_semant	HIGH PEAK 2014 LOW PEAK 2017

Theme	Interpretation
subset_featur	EQUILIBRIUM
system_arab	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
algorithm_predict	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
gener_data	HIGH PEAK 2015
mine_natur	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
multi_label	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
node_graph	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
word_test	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
design_model	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
further_develop	HIGH PEAK 2014
model_construct	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
sampl_data	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
salton_bucklei	LOW PEAK 2014HIGH PEAK 2015
applic_develop	EQUILIBRIUM
automat_document	LOW PEAK 2014HIGH PEAK 2015
document_avail	LOW PEAK 2014HIGH PEAK 2015
model_consid	DECREASING
stem_step	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
arxiv_preprint	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
classifi_classif	LOW PEAK 2016HIGH PEAK 2017
classifi_support	LOW PEAK 2015HIGH PEAK 2017
mean_document	LOW PEAK 2015HIGH PEAK 2016
method_comput	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
technolog_issn	LOW PEAK 2015HIGH PEAK 2016
appear_time	LOW PEAK 2014HIGH PEAK 2016
auto_matic	LOW PEAK 2016HIGH PEAK 2017
captur_semant	LOW PEAK 2015HIGH PEAK 2016
linguist_structur	DECREASING
perform_base	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
word_refer	LOW PEAK 2015HIGH PEAK 2016
data_obtain	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
describ_system	LOW PEAK 2014HIGH PEAK 2016
direct_graph	LOW PEAK 2014HIGH PEAK 2015
help_improv	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
linear_model	LOW PEAK 2014HIGH PEAK 2016
model_provid	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
multipl_word	HIGH PEAK 2014
probabl_document	LOW PEAK 2014HIGH PEAK 2015

Theme	Interpretation
topic_interest	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017
word_total	HIGH PEAK 2014
accuraci_obtain	HIGH PEAK 2014
class_classifi	LOW PEAK 2015HIGH PEAK 2017
current_state	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
experi_experi	LOW PEAK 2014HIGH PEAK 2017
mathemat_comput	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
measur_cosin	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
messag_servic	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
similar_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
achiev_good	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
algorithm_term	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
method_model	LOW PEAK 2014HIGH PEAK 2016
metric_evalu	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
stemmer_arab	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
system_consid	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
system_requir	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
tweet_collect	HIGH PEAK 2014
word_user	HIGH PEAK 2015
appli_cluster	LOW PEAK 2015HIGH PEAK 2017
learn_task	LOW PEAK 2016HIGH PEAK 2017
document_organ	LOW PEAK 2014HIGH PEAK 2015
measur_comput	LOW PEAK 2016HIGH PEAK 2017
term_given	LOW PEAK 2014HIGH PEAK 2015
user_find	LOW PEAK 2015HIGH PEAK 2016
bay_model	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
consid_term	DECREASING
mcgraw_hill	LOW PEAK 2015HIGH PEAK 2017
method_document	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
model_cluster	LOW PEAK 2014HIGH PEAK 2015
retriev_data	LOW PEAK 2016HIGH PEAK 2017
search_inform	LOW PEAK 2017
basic_idea	LOW PEAK 2014HIGH PEAK 2015
blog_post	LOW PEAK 2014HIGH PEAK 2015
comput_survei	LOW PEAK 2016HIGH PEAK 2017
deriv_word	LOW PEAK 2015HIGH PEAK 2016
main_contribut	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
estim_paramet	LOW PEAK 2015HIGH PEAK 2016

Theme	Interpretation
form_cluster	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
method_name	LOW PEAK 2015HIGH PEAK 2016
model_techniqu	EQUILIBRIUM
neural_inform	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
binari_classifi	LOW PEAK 2015HIGH PEAK 2016
charact_token	LOW PEAK 2014HIGH PEAK 2015
latent_variabl	DECREASING
system_comput	LOW PEAK 2015HIGH PEAK 2016
task_automat	HIGH PEAK 2014
text_includ	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
us_neural	LOW PEAK 2014HIGH PEAK 2017
algorithm_describ	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
algorithm_method	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
algorithm_requir	EQUILIBRIUM
applic_us	LOW PEAK 2015HIGH PEAK 2017
calcul_score	LOW PEAK 2014HIGH PEAK 2016
featur_number	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
inform_base	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
method_achiev	LOW PEAK 2015HIGH PEAK 2017
studi_focus	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
comput_program	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
dataset_test	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
identifi_emot	LOW PEAK 2014HIGH PEAK 2016
replac_word	LOW PEAK 2014HIGH PEAK 2016
statist_data	EQUILIBRIUM
automat_detect	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
calcul_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
commun_system	LOW PEAK 2015HIGH PEAK 2016
develop_tool	LOW PEAK 2014HIGH PEAK 2017
featur_classif	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
graphic_model	EQUILIBRIUM
process_term	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
semant_resourc	HIGH PEAK 2015
text_analyt	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
word_weight	HIGH PEAK 2015
match_match	LOW PEAK 2016HIGH PEAK 2017
valu_obtain	LOW PEAK 2015HIGH PEAK 2017
defin_term	LOW PEAK 2015HIGH PEAK 2016

Theme	Interpretation
us_maximum	LOW PEAK 2015HIGH PEAK 2016
cluster_comput	EQUILIBRIUM
space_word	LOW PEAK 2014HIGH PEAK 2017
token_document	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
model_dataset	LOW PEAK 2015HIGH PEAK 2016
novel_approach	LOW PEAK 2014HIGH PEAK 2016
vocabulari_word	LOW PEAK 2015HIGH PEAK 2016
frequenc_measur	LOW PEAK 2014HIGH PEAK 2015
ground_truth	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017
levelRepresent	DECREASING
process_select	LOW PEAK 2015HIGH PEAK 2017
algorithm_automat	EQUILIBRIUM
index_word	LOW PEAK 2014HIGH PEAK 2016
proc_sigir	HIGH PEAK 2014
algorithm_achiev	LOW PEAK 2014HIGH PEAK 2016
appli_algorithm	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
averag_length	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
evalu_base	LOW PEAK 2015HIGH PEAK 2016
form_term	LOW PEAK 2016HIGH PEAK 2017
machin_intellig	EQUILIBRIUM
mine_base	LOW PEAK 2014HIGH PEAK 2015
professor_comput	HIGH PEAK 2014
techniqu_reduc	LOW PEAK 2016HIGH PEAK 2017
us_tool	LOW PEAK 2015HIGH PEAK 2017
vector_term	EQUILIBRIUM
evalu_dataset	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
extract_semant	EQUILIBRIUM
process_machin	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
adject_noun	LOW PEAK 2014HIGH PEAK 2015
collect_process	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
gradient_descent	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
inform_structur	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
languag_world	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
learn_us	LOW PEAK 2015HIGH PEAK 2016
model_make	LOW PEAK 2015HIGH PEAK 2016
text_form	LOW PEAK 2014HIGH PEAK 2016
analysi_natur	HIGH PEAK 2015
complex_system	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017

Theme	Interpretation
levenshtein_distanc	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
million_peopl	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
model_structur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
remain_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
search_data	LOW PEAK 2015HIGH PEAK 2016
approach_solv	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
document_convert	LOW PEAK 2015HIGH PEAK 2016
extern_knowledg	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017
appli_document	LOW PEAK 2014HIGH PEAK 2015
assign_categor	LOW PEAK 2014HIGH PEAK 2015
distribut_data	EQUILIBRIUM
network_commun	LOW PEAK 2015HIGH PEAK 2017
tree_base	LOW PEAK 2015HIGH PEAK 2017
larger_number	LOW PEAK 2015HIGH PEAK 2016
novel_method	LOW PEAK 2017
preprint_arxiv	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
represent_vector	LOW PEAK 2015HIGH PEAK 2016
us_keyword	LOW PEAK 2015HIGH PEAK 2016
data_classifi	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
distribut_term	LOW PEAK 2016HIGH PEAK 2017
group_base	LOW PEAK 2016HIGH PEAK 2017
relev_user	LOW PEAK 2014HIGH PEAK 2016
summar_task	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
type_word	LOW PEAK 2015HIGH PEAK 2016
vector_weight	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
weight_weight	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
approach_method	LOW PEAK 2016HIGH PEAK 2017
column_repres	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
dept_comput	LOW PEAK 2017
keyword_search	DECREASING
measur_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
model_analysi	EQUILIBRIUM
perform_comparison	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
user_input	EQUILIBRIUM
approach_gener	EQUILIBRIUM
base_keyword	LOW PEAK 2014HIGH PEAK 2015
base_multi	LOW PEAK 2015HIGH PEAK 2016
base_score	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016

Theme	Interpretation
base_valu	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
data_size	LOW PEAK 2014HIGH PEAK 2016
data_social	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
perform_variou	LOW PEAK 2016HIGH PEAK 2017
reduc_comput	EQUILIBRIUM
studi_us	LOW PEAK 2016HIGH PEAK 2017
us_measur	HIGH PEAK 2014
word_input	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
workshop_text	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
accuraci_score	LOW PEAK 2014HIGH PEAK 2015
approach_identifi	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
base_queri	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
determin_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
maximum_valu	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
model_creat	LOW PEAK 2015HIGH PEAK 2017
take_time	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
us_number	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
user_us	LOW PEAK 2014HIGH PEAK 2017
averag_time	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
classifi_predict	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
knowledg_inform	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
perform_stem	HIGH PEAK 2015
valu_given	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
word_replac	LOW PEAK 2015HIGH PEAK 2016
document_appear	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
kullback_leibler	LOW PEAK 2014HIGH PEAK 2015
number_distinct	DECREASING
learn_autom	DECREASING
requir_number	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
becom_popular	LOW PEAK 2014HIGH PEAK 2015
process_call	LOW PEAK 2016HIGH PEAK 2017
similar_featur	DECREASING
singl_term	LOW PEAK 2015HIGH PEAK 2017
term_calcul	LOW PEAK 2014HIGH PEAK 2015
term_topic	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
type_document	LOW PEAK 2014HIGH PEAK 2015
appli_mathemat	DECREASING
creat_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016

Theme	Interpretation
decreas_number	LOW PEAK 2015HIGH PEAK 2016
master_degre	EQUILIBRIUM
test_train	LOW PEAK 2015HIGH PEAK 2016
text_evalu	LOW PEAK 2015HIGH PEAK 2016
cosin_angl	HIGH PEAK 2014
evalu_cluster	LOW PEAK 2014HIGH PEAK 2016
evalu_lrec	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
given_user	LOW PEAK 2014HIGH PEAK 2015
includ_step	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
likelihood_estim	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
mine_icdm	EQUILIBRIUM
model_experi	LOW PEAK 2015HIGH PEAK 2017
optim_number	LOW PEAK 2015HIGH PEAK 2016
process_order	LOW PEAK 2014HIGH PEAK 2017
queri_queri	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
recent_studi	LOW PEAK 2016HIGH PEAK 2017
similar_concept	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
strip_program	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
classifi_emot	LOW PEAK 2016HIGH PEAK 2017
consid_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
inform_featur	LOW PEAK 2015HIGH PEAK 2017
measur_combin	HIGH PEAK 2015
model_number	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
refer_word	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
techniqu_stem	EQUILIBRIUM
word_letter	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
approach_present	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
integr_data	EQUILIBRIUM
method_data	LOW PEAK 2014HIGH PEAK 2016
model_present	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
multi_dimension	HIGH PEAK 2015
select_select	HIGH PEAK 2015
system_abl	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
text_exampl	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
base_function	HIGH PEAK 2014
develop_base	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
emot_analysi	LOW PEAK 2015HIGH PEAK 2017
mine_introduct	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017

<b>Theme</b>	<b>Interpretation</b>
morpholog_syntact	HIGH PEAK 2014
score_evalu	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017
servic_name	DECREASING
precis_rate	DECREASING
order_compar	EQUILIBRIUM
similar_function	DECREASING
step_algorithm	LOW PEAK 2014HIGH PEAK 2017
neg_emot	LOW PEAK 2015HIGH PEAK 2016
particular_categor	LOW PEAK 2014HIGH PEAK 2015
advanc_neural	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
cluster_form	HIGH PEAK 2014
html_http	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
particular_document	DECREASING
reduc_dimens	HIGH PEAK 2014
stem_approach	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
twitter_social	LOW PEAK 2015HIGH PEAK 2016
accuraci_text	LOW PEAK 2014HIGH PEAK 2015
learn_theori	LOW PEAK 2015HIGH PEAK 2017
select_appropri	LOW PEAK 2016HIGH PEAK 2017
task_document	LOW PEAK 2014HIGH PEAK 2015
term_index	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
text_model	LOW PEAK 2014HIGH PEAK 2016
time_frame	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
analysi_determin	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
classifi_class	LOW PEAK 2015HIGH PEAK 2016
creativ_common	LOW PEAK 2014HIGH PEAK 2016
lower_valu	LOW PEAK 2015HIGH PEAK 2016
match_algorithm	LOW PEAK 2015HIGH PEAK 2016
problem_data	LOW PEAK 2014HIGH PEAK 2016
techniqu_term	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
word_algorithm	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
class_cluster	LOW PEAK 2016HIGH PEAK 2017
evalu_topic	LOW PEAK 2014HIGH PEAK 2016
process_describ	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
system_inform	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
tion_retriev	LOW PEAK 2015HIGH PEAK 2016
total_score	LOW PEAK 2015HIGH PEAK 2016
user_select	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017

Theme	Interpretation
word_defin	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
word_find	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
collect_us	HIGH PEAK 2016
data_perform	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
dice_similar	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
formal_defin	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
respons_time	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
techniqu_order	HIGH PEAK 2016
distribut_similar	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
probabl_term	LOW PEAK 2014HIGH PEAK 2015
document_assign	LOW PEAK 2015HIGH PEAK 2016
leibler_diverg	LOW PEAK 2014HIGH PEAK 2015
bucklei_term	DECREASING
categor_comput	HIGH PEAK 2014
collect_dataset	LOW PEAK 2015HIGH PEAK 2017
introduct_modern	LOW PEAK 2015HIGH PEAK 2016
keyword_arab	LOW PEAK 2015HIGH PEAK 2016
search_us	EQUILIBRIUM
size_document	EQUILIBRIUM
system_page	LOW PEAK 2014HIGH PEAK 2016
time_document	LOW PEAK 2014HIGH PEAK 2015
charact_number	LOW PEAK 2015HIGH PEAK 2017
document_select	LOW PEAK 2014HIGH PEAK 2015
effect_method	LOW PEAK 2015HIGH PEAK 2017
languag_complex	LOW PEAK 2014HIGH PEAK 2016
method_take	LOW PEAK 2016HIGH PEAK 2017
signific_amount	LOW PEAK 2015HIGH PEAK 2017
analysi_classif	LOW PEAK 2015HIGH PEAK 2016
appli_comput	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
document_obtain	HIGH PEAK 2014 LOW PEAK 2017
main_focu	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
model_outperform	LOW PEAK 2015HIGH PEAK 2017
probabl_class	HIGH PEAK 2014
represent_method	HIGH PEAK 2015
term_mean	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
word_singl	LOW PEAK 2014HIGH PEAK 2015
algorithm_present	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
approach_comput	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017

Theme	Interpretation
corpu_includ	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
data_analyz	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
data_experi	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
depend_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
describ_method	HIGH PEAK 2014
distribu_tion	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
frequenc_featur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
good_accuraci	LOW PEAK 2015HIGH PEAK 2017
human_behavior	EQUILIBRIUM
lucen_apach	LOW PEAK 2015HIGH PEAK 2016
main_advantag	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
saudi_arabia	LOW PEAK 2014HIGH PEAK 2015
tag_tag	LOW PEAK 2014HIGH PEAK 2016
us_automat	HIGH PEAK 2015
word_inform	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
analysi_identifi	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
common_attribut	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
exampl_tweet	LOW PEAK 2015HIGH PEAK 2017
model_find	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
normal_term	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
polar_text	LOW PEAK 2015HIGH PEAK 2016
preci_sion	LOW PEAK 2014HIGH PEAK 2016
system_includ	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
text_therefor	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
theori_applic	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
us_linguist	HIGH PEAK 2015
word_correspond	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
neg_train	LOW PEAK 2016HIGH PEAK 2017
cluster_hierarch	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
document_reduc	LOW PEAK 2014HIGH PEAK 2015
index_databas	LOW PEAK 2014HIGH PEAK 2015
stage_text	LOW PEAK 2014HIGH PEAK 2015
class_repres	LOW PEAK 2014HIGH PEAK 2015
cluster_evalu	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
document_includ	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
experiment_studi	LOW PEAK 2015HIGH PEAK 2016
identifi_topic	LOW PEAK 2014HIGH PEAK 2015
social_interact	LOW PEAK 2015HIGH PEAK 2016

Theme	Interpretation
user_label	HIGH PEAK 2014 LOW PEAK 2017
vector_similar	LOW PEAK 2014 HIGH PEAK 2016
word_normal	LOW PEAK 2015 HIGH PEAK 2016
descend_order	LOW PEAK 2015 HIGH PEAK 2016
form_verb	LOW PEAK 2014 HIGH PEAK 2015
semantRepresent	LOW PEAK 2015 HIGH PEAK 2016
stem_gener	LOW PEAK 2016 HIGH PEAK 2017
stem_porter	LOW PEAK 2016 HIGH PEAK 2017
termContain	LOW PEAK 2015 HIGH PEAK 2016
textObtain	LOW PEAK 2015 HIGH PEAK 2016
us_languag	LOW PEAK 2016
us_queri	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
documentContent	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
documentIncreas	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
evaluQualiti	EQUILIBRIUM
filterUs	LOW PEAK 2015 HIGH PEAK 2016
hugeNumber	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
matchUser	HIGH PEAK 2014
removLetter	LOW PEAK 2015 HIGH PEAK 2017
stepPreprocess	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017
weightScore	LOW PEAK 2015 HIGH PEAK 2016
wordVocabulari	LOW PEAK 2015 HIGH PEAK 2016
availAbl	LOW PEAK 2014 HIGH PEAK 2016
documentDistribut	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
extractTask	EQUILIBRIUM
imagAnalysi	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
languagMake	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
obtainCluster	HIGH PEAK 2014
processIdentifi	HIGH PEAK 2015 LOW PEAK 2016 HIGH PEAK 2017
significantliReduc	LOW PEAK 2014 HIGH PEAK 2015
stepExtract	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
stepIdentifi	HIGH PEAK 2014
systemTerm	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
usGraph	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
usKnowledg	LOW PEAK 2014 HIGH PEAK 2015
approachMachin	LOW PEAK 2014 HIGH PEAK 2016
independAssumpt	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
methodMean	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016

<b>Theme</b>	<b>Interpretation</b>
number_sampl	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
origin_dataset	LOW PEAK 2014HIGH PEAK 2015
problem_automat	HIGH PEAK 2015
twitter_stream	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
user_system	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
data_distribut	EQUILIBRIUM
document_call	LOW PEAK 2016
avail_document	LOW PEAK 2014HIGH PEAK 2015
calcul_distanc	LOW PEAK 2015HIGH PEAK 2016
input_train	LOW PEAK 2016HIGH PEAK 2017
base_emot	EQUILIBRIUM
develop_evalu	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
featur_evalu	LOW PEAK 2015HIGH PEAK 2016
linear_function	DECREASING
particular_domain	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
randomli_chosen	LOW PEAK 2015HIGH PEAK 2016
valu_measur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
algorithm_mine	LOW PEAK 2015HIGH PEAK 2016
analyz_tweet	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
imag_video	LOW PEAK 2014HIGH PEAK 2017
measur_find	LOW PEAK 2015HIGH PEAK 2016
number_retriev	LOW PEAK 2014HIGH PEAK 2016
process_automat	LOW PEAK 2015HIGH PEAK 2016
process_take	LOW PEAK 2016HIGH PEAK 2017
requir_user	EQUILIBRIUM
rule_combin	DECREASING
signific_word	HIGH PEAK 2014
appli_stem	HIGH PEAK 2015
applic_servic	LOW PEAK 2015HIGH PEAK 2017
base_structur	LOW PEAK 2016HIGH PEAK 2017
calcu_late	HIGH PEAK 2014
correspond_sentenc	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
experi_text	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
featur_calcul	LOW PEAK 2014HIGH PEAK 2016
interact_user	LOW PEAK 2016HIGH PEAK 2017
map_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
order_understand	EQUILIBRIUM
search_retriev	HIGH PEAK 2015

<b>Theme</b>	<b>Interpretation</b>
token_remov	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
us_gener	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
vector_train	LOW PEAK 2014HIGH PEAK 2015
weight_obtain	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
class_posit	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
commun_comput	EQUILIBRIUM
consist_phase	EQUILIBRIUM
correctli_identifi	HIGH PEAK 2014 LOW PEAK 2017
document_form	HIGH PEAK 2015
experi_dataset	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
knowledg_resourc	HIGH PEAK 2015
languag_social	HIGH PEAK 2014
system_measur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
text_method	HIGH PEAK 2014
word_chang	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
engin_issu	EQUILIBRIUM
identifi_us	LOW PEAK 2014HIGH PEAK 2015
determin_number	DECREASING
normal_word	LOW PEAK 2014HIGH PEAK 2016
text_identifi	LOW PEAK 2014HIGH PEAK 2015
world_congress	LOW PEAK 2016HIGH PEAK 2017
comparison_method	HIGH PEAK 2014
document_improv	LOW PEAK 2014HIGH PEAK 2016
precis_calcul	LOW PEAK 2014HIGH PEAK 2016
stem_document	LOW PEAK 2015HIGH PEAK 2016
centroid_cluster	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
data_approach	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
indic_word	LOW PEAK 2014HIGH PEAK 2016
interest_user	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
punctuat_remov	LOW PEAK 2015HIGH PEAK 2017
set_featur	LOW PEAK 2016HIGH PEAK 2017
twitter_facebook	LOW PEAK 2015HIGH PEAK 2016
variou_techniqu	LOW PEAK 2014HIGH PEAK 2015
word_ad	EQUILIBRIUM
accu_raci	EQUILIBRIUM
algorithm_accuraci	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
algorithm_consist	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
algorithm_naiv	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017

Theme	Interpretation
collect_collect	EQUILIBRIUM
compar_us	LOW PEAK 2014HIGH PEAK 2016
comparison_document	HIGH PEAK 2015 LOW PEAK 2017
comparison_precis	LOW PEAK 2015HIGH PEAK 2016
describ_process	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
develop_develop	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
equal_length	LOW PEAK 2014HIGH PEAK 2015
featur_perform	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
frequenc_corpu	LOW PEAK 2015HIGH PEAK 2016
http_lucen	LOW PEAK 2015HIGH PEAK 2016
keyword_queri	HIGH PEAK 2014
measur_estim	EQUILIBRIUM
model_take	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
obtain_word	LOW PEAK 2014HIGH PEAK 2016
probabilist_classifi	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017
process_activ	LOW PEAK 2014HIGH PEAK 2015
score_comput	LOW PEAK 2014HIGH PEAK 2016
step_select	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
system_learn	HIGH PEAK 2015
term_relev	LOW PEAK 2015HIGH PEAK 2016
word_structur	EQUILIBRIUM
word_type	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
algorithm_classif	HIGH PEAK 2014
base_mean	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
clean_data	LOW PEAK 2014HIGH PEAK 2016
document_creat	LOW PEAK 2014HIGH PEAK 2016
document_remov	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
extract_name	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
func_tion	EQUILIBRIUM
issn_issn	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
matrix_term	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
meaning_inform	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
method_detect	LOW PEAK 2014HIGH PEAK 2016
output_process	EQUILIBRIUM
system_avail	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
system_detect	LOW PEAK 2015HIGH PEAK 2016
text_sourc	LOW PEAK 2014HIGH PEAK 2015
time_base	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016

Theme	Interpretation
remov_step	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
parent_node	DECREASING
perform_obtain	LOW PEAK 2014HIGH PEAK 2016
word_lead	HIGH PEAK 2014
appear_text	EQUILIBRIUM
cluster_repres	DECREASING
inform_servic	LOW PEAK 2016HIGH PEAK 2017
predefin_class	LOW PEAK 2015HIGH PEAK 2016
applic_inform	LOW PEAK 2015HIGH PEAK 2016
becom_increasingli	LOW PEAK 2014HIGH PEAK 2016
classif_data	EQUILIBRIUM
inform_social	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
lower_number	LOW PEAK 2015HIGH PEAK 2016
techniqu_featur	EQUILIBRIUM
affix_word	EQUILIBRIUM
classif_arab	LOW PEAK 2015HIGH PEAK 2017
dataset_avail	LOW PEAK 2015HIGH PEAK 2017
dataset_creat	LOW PEAK 2015HIGH PEAK 2016
featur_semant	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
function_similar	LOW PEAK 2015HIGH PEAK 2016
perform_step	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
repres_singl	EQUILIBRIUM
step_gener	LOW PEAK 2014HIGH PEAK 2015
time_number	EQUILIBRIUM
token_us	LOW PEAK 2014HIGH PEAK 2015
vector_number	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
approach_pattern	HIGH PEAK 2014
contain_topic	HIGH PEAK 2014 LOW PEAK 2017
content_type	EQUILIBRIUM
degre_similar	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
form_inform	LOW PEAK 2014HIGH PEAK 2016
improv_us	LOW PEAK 2015HIGH PEAK 2016
inform_form	LOW PEAK 2014HIGH PEAK 2015
interest_pattern	HIGH PEAK 2014
model_produc	LOW PEAK 2016HIGH PEAK 2017
present_text	EQUILIBRIUM
score_precis	LOW PEAK 2014HIGH PEAK 2015
stem_exampl	EQUILIBRIUM

<b>Theme</b>	<b>Interpretation</b>
text_appli	LOW PEAK 2015HIGH PEAK 2017
valu_chosen	EQUILIBRIUM
automat_emot	LOW PEAK 2015HIGH PEAK 2016
base_perform	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
cluster_topic	HIGH PEAK 2014 LOW PEAK 2017
contain_specif	LOW PEAK 2014HIGH PEAK 2017
data_describ	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
data_estim	HIGH PEAK 2014
data_user	LOW PEAK 2015HIGH PEAK 2017
electron_commun	LOW PEAK 2014HIGH PEAK 2016
exist_techiqu	EQUILIBRIUM
frequenc_text	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
languag_stem	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
method_topic	LOW PEAK 2014HIGH PEAK 2016
model_increas	LOW PEAK 2014HIGH PEAK 2016
object_base	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
produc_cluster	HIGH PEAK 2014
rela_tionship	HIGH PEAK 2014
signific_number	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
similar_semant	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
system_creat	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
time_accuraci	LOW PEAK 2014HIGH PEAK 2015
topic_us	EQUILIBRIUM
train_word	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
word_valu	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
semant_concept	DECREASING
languag_form	LOW PEAK 2015HIGH PEAK 2016
stemmer_compar	HIGH PEAK 2014
distribut_class	EQUILIBRIUM
binari_valu	LOW PEAK 2016HIGH PEAK 2017
consid_number	DECREASING
document_thereför	LOW PEAK 2015HIGH PEAK 2016
gener_train	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
higher_weight	LOW PEAK 2014HIGH PEAK 2015
method_present	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
word_preposit	EQUILIBRIUM
approach_select	LOW PEAK 2015HIGH PEAK 2016
assign_cluster	DECREASING

Theme	Interpretation
cluster_compar	LOW PEAK 2016HIGH PEAK 2017
form_form	LOW PEAK 2014HIGH PEAK 2015
grow_rapidli	LOW PEAK 2014HIGH PEAK 2015
matrix_contain	EQUILIBRIUM
method_semant	LOW PEAK 2015HIGH PEAK 2016
term_identifi	EQUILIBRIUM
text_present	EQUILIBRIUM
topic_similar	HIGH PEAK 2014
vector_input	LOW PEAK 2015HIGH PEAK 2016
analysi_comput	HIGH PEAK 2015 LOW PEAK 2017
analysi_problem	EQUILIBRIUM
approach_compar	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
emerg_technolog	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
exist_algorithm	HIGH PEAK 2014
graph_model	HIGH PEAK 2014
luhn_automat	LOW PEAK 2016HIGH PEAK 2017
method_construct	HIGH PEAK 2014
order_measur	LOW PEAK 2016HIGH PEAK 2017
perform_fold	LOW PEAK 2014HIGH PEAK 2016
remov_nois	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017
similar_approach	LOW PEAK 2014HIGH PEAK 2016
system_refer	EQUILIBRIUM
tool_provid	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
transact_pattern	LOW PEAK 2015HIGH PEAK 2017
analysi_knowledg	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
base_appli	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
base_rank	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
classifi_term	EQUILIBRIUM
crucial_role	EQUILIBRIUM
featur_learn	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
field_data	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
function_defin	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
gener_architectur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
good_featur	LOW PEAK 2014HIGH PEAK 2016
lemmat_word	LOW PEAK 2014HIGH PEAK 2015
mathemat_scienc	LOW PEAK 2014HIGH PEAK 2015
media_content	LOW PEAK 2015HIGH PEAK 2017
model_machin	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017

Theme	Interpretation
morpho_syntact	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
number_attribut	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
number_concept	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
perform_dataset	LOW PEAK 2014HIGH PEAK 2016
similar_group	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
simpl_probabilist	LOW PEAK 2014HIGH PEAK 2016
solv_issu	EQUILIBRIUM
split_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
step_find	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
stochast_gradient	HIGH PEAK 2014
text_step	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
third_type	LOW PEAK 2015HIGH PEAK 2016
type_system	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
cluster_correspond	LOW PEAK 2015HIGH PEAK 2016
compar_origin	LOW PEAK 2016HIGH PEAK 2017
sequenc_model	LOW PEAK 2016HIGH PEAK 2017
rule_defin	EQUILIBRIUM
correspond_featur	LOW PEAK 2014HIGH PEAK 2015
process_search	LOW PEAK 2015HIGH PEAK 2016
therefor_develop	LOW PEAK 2016HIGH PEAK 2017
word_indic	LOW PEAK 2016HIGH PEAK 2017
categori_us	DECREASING
classif_new	HIGH PEAK 2015
correspond_topic	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
dictionari_dictionari	LOW PEAK 2015HIGH PEAK 2016
document_normal	DECREASING
engin_retriev	DECREASING
inquiri_word	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017
remov_arab	LOW PEAK 2015HIGH PEAK 2016
requir_addit	LOW PEAK 2014HIGH PEAK 2016
step_token	LOW PEAK 2015HIGH PEAK 2016
us_normal	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017
alphabet_charact	LOW PEAK 2014HIGH PEAK 2015
base_implement	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
base_pattern	EQUILIBRIUM
base_probabl	LOW PEAK 2015HIGH PEAK 2017
case_text	LOW PEAK 2016HIGH PEAK 2017
charact_punctuat	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017

Theme	Interpretation
engin_inform	LOW PEAK 2015HIGH PEAK 2017
extract_phrase	LOW PEAK 2014HIGH PEAK 2015
initi_step	LOW PEAK 2014HIGH PEAK 2015
measur_qualiti	LOW PEAK 2014HIGH PEAK 2015
method_effect	LOW PEAK 2015HIGH PEAK 2016
model_calcul	HIGH PEAK 2014 LOW PEAK 2017
particular_case	HIGH PEAK 2015
rapid_develop	EQUILIBRIUM
string_number	HIGH PEAK 2014
system_make	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017
toulous_franc	HIGH PEAK 2014
us_resourc	LOW PEAK 2015HIGH PEAK 2017
valu_model	LOW PEAK 2015HIGH PEAK 2016
vector_length	LOW PEAK 2015HIGH PEAK 2016
word_porter	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
approach_found	LOW PEAK 2014HIGH PEAK 2016
call_term	HIGH PEAK 2015 LOW PEAK 2017
classifi_decis	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
content_tweet	LOW PEAK 2015HIGH PEAK 2017
databas_commun	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
document_specif	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
human_social	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
inform_analysi	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
linguist_volum	HIGH PEAK 2014
method_case	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
model_thu	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
page_contain	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
partial_support	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
plai_crucial	EQUILIBRIUM
problem_includ	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
scienc_softwar	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
step_approach	LOW PEAK 2015HIGH PEAK 2016
step_featur	LOW PEAK 2015HIGH PEAK 2017
studi_comput	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
system_capabl	HIGH PEAK 2014 LOW PEAK 2017
system_project	LOW PEAK 2015HIGH PEAK 2016
techniqu_help	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
techniqu_perform	HIGH PEAK 2015

Theme	Interpretation
text_twitter	LOW PEAK 2015HIGH PEAK 2017
time_exampl	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
tool_gener	LOW PEAK 2014HIGH PEAK 2015
us_preprocess	LOW PEAK 2015HIGH PEAK 2017
vector_contain	LOW PEAK 2014HIGH PEAK 2016
document_phrase	LOW PEAK 2014HIGH PEAK 2015
text_vector	DECREASING
algorithm_given	LOW PEAK 2016HIGH PEAK 2017
method_word	DECREASING
problem_word	LOW PEAK 2017
spend_time	LOW PEAK 2015HIGH PEAK 2017
state_model	LOW PEAK 2016HIGH PEAK 2017
combin_term	DECREASING
effici_search	LOW PEAK 2016HIGH PEAK 2017
enorm_amount	EQUILIBRIUM
further_increas	HIGH PEAK 2014
model_addit	LOW PEAK 2017
model_requir	LOW PEAK 2014HIGH PEAK 2015
select_topic	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017
term_search	HIGH PEAK 2014
test_compar	LOW PEAK 2015HIGH PEAK 2016
addit_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
analysi_applic	EQUILIBRIUM
approach_reli	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
databas_search	HIGH PEAK 2014
elimin_stem	HIGH PEAK 2014
eval_uation	LOW PEAK 2015HIGH PEAK 2016
identifi_similar	DECREASING
knowledg_document	HIGH PEAK 2014
network_machin	LOW PEAK 2015HIGH PEAK 2017
split_data	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
steinbach_karypi	HIGH PEAK 2015
store_file	LOW PEAK 2014HIGH PEAK 2015
topic_exampl	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
user_data	LOW PEAK 2015HIGH PEAK 2016
valu_posit	LOW PEAK 2015HIGH PEAK 2017
accord_word	HIGH PEAK 2014
algorithm_determin	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017

Theme	Interpretation
anger_fear	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
approach_consist	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
approach_outperform	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
candid_gener	LOW PEAK 2015HIGH PEAK 2016
choos_number	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
collect_period	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
compar_number	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
construct_graph	HIGH PEAK 2014
count_time	LOW PEAK 2014HIGH PEAK 2015
descrip_tion	LOW PEAK 2014HIGH PEAK 2015
design_algorithm	HIGH PEAK 2015
document_view	EQUILIBRIUM
extract_textual	LOW PEAK 2014HIGH PEAK 2016
featur_preprocess	LOW PEAK 2015HIGH PEAK 2017
filter_step	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
help_classifi	LOW PEAK 2015HIGH PEAK 2017
independ_given	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
knowledg_sourc	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
label_class	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
method_produc	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
overal_score	LOW PEAK 2015HIGH PEAK 2016
process_human	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
step_construct	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
strength_weak	LOW PEAK 2014HIGH PEAK 2015
test_purpos	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
us_extern	EQUILIBRIUM
word_divid	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
word_system	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
topic_categori	DECREASING
consid_time	LOW PEAK 2016HIGH PEAK 2017
data_partit	DECREASING
exist_document	LOW PEAK 2014HIGH PEAK 2015
featur_name	LOW PEAK 2015HIGH PEAK 2017
iter_step	HIGH PEAK 2014
label_base	LOW PEAK 2015HIGH PEAK 2016
media_platform	LOW PEAK 2016HIGH PEAK 2017
method_keyword	LOW PEAK 2017
base_frequent	DECREASING

Theme	Interpretation
cate_gori	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017
comparison_baselin	LOW PEAK 2015HIGH PEAK 2016
comput_perform	HIGH PEAK 2014
consid_case	LOW PEAK 2016HIGH PEAK 2017
dataset_method	LOW PEAK 2015HIGH PEAK 2016
distribut_represent	LOW PEAK 2014HIGH PEAK 2015
introduc_concept	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
level_document	LOW PEAK 2016HIGH PEAK 2017
metric_text	LOW PEAK 2015HIGH PEAK 2016
queri_gener	LOW PEAK 2014HIGH PEAK 2015
support_grant	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
user_perform	LOW PEAK 2016HIGH PEAK 2017
variou_approach	LOW PEAK 2014HIGH PEAK 2015
accuraci_number	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
affect_user	LOW PEAK 2016HIGH PEAK 2017
analysi_emot	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017
analysi_featur	EQUILIBRIUM
analysi_order	LOW PEAK 2015HIGH PEAK 2017
averag_sentenc	LOW PEAK 2016HIGH PEAK 2017
categori_tweet	LOW PEAK 2015HIGH PEAK 2016
contain_singl	LOW PEAK 2015HIGH PEAK 2017
discoveri_databas	HIGH PEAK 2015
distanc_calcul	LOW PEAK 2016HIGH PEAK 2017
experi_featur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
graph_structur	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
increas_precis	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
keyword_cluster	EQUILIBRIUM
level_system	LOW PEAK 2016HIGH PEAK 2017
main_sourc	LOW PEAK 2016HIGH PEAK 2017
neg_affect	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
network_data	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
order_base	LOW PEAK 2015HIGH PEAK 2016
process_construct	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017
sampl_test	LOW PEAK 2015HIGH PEAK 2017
step_build	LOW PEAK 2014HIGH PEAK 2016
us_exampl	HIGH PEAK 2015
user_give	LOW PEAK 2015HIGH PEAK 2016
vector_calcul	HIGH PEAK 2014 LOW PEAK 2017

Theme	Interpretation
word_retriev	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
written_java	LOW PEAK 2015HIGH PEAK 2016
ad_word	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017
extern_sourc	DECREASING
featur_posit	LOW PEAK 2015HIGH PEAK 2016
overal_system	LOW PEAK 2015HIGH PEAK 2016
stem_languag	LOW PEAK 2015HIGH PEAK 2016
algorithm_consid	DECREASING
automat_creation	LOW PEAK 2016HIGH PEAK 2017
cluster_unsupervis	EQUILIBRIUM
dataset_compar	LOW PEAK 2015HIGH PEAK 2017
describ_algorithm	LOW PEAK 2015HIGH PEAK 2016
effici_cluster	HIGH PEAK 2014
full_word	DECREASING
model_human	LOW PEAK 2016HIGH PEAK 2017
punctuat_stop	LOW PEAK 2016HIGH PEAK 2017
rang_valu	DECREASING
remov_frequent	LOW PEAK 2017
sampl_word	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017
time_text	LOW PEAK 2014HIGH PEAK 2015
word_affect	LOW PEAK 2014HIGH PEAK 2015
algorithm_obtain	HIGH PEAK 2015
approach_provid	LOW PEAK 2014HIGH PEAK 2016
calcul_step	LOW PEAK 2014HIGH PEAK 2016
difficult_languag	HIGH PEAK 2014
document_arab	EQUILIBRIUM
equat_calcul	LOW PEAK 2014HIGH PEAK 2015
extract_variou	LOW PEAK 2014HIGH PEAK 2016
famili_member	EQUILIBRIUM
index_base	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
indic_cluster	DECREASING
inform_becom	HIGH PEAK 2014
manual_extract	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
metric_base	LOW PEAK 2015HIGH PEAK 2016
miller_wordnet	HIGH PEAK 2014
perform_supervis	LOW PEAK 2015HIGH PEAK 2016
process_design	HIGH PEAK 2014
process_part	EQUILIBRIUM

Theme	Interpretation
score_method	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
stream_text	HIGH PEAK 2015
system_conclus	LOW PEAK 2014 HIGH PEAK 2015
test_split	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
topic_cover	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
uniqu_featur	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
user_send	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
predict_categor	DECREASING
annual_symposium	LOW PEAK 2016 HIGH PEAK 2017
model_respect	LOW PEAK 2015 HIGH PEAK 2016
analysi_time	LOW PEAK 2014 HIGH PEAK 2015
approach_deal	LOW PEAK 2015 HIGH PEAK 2016
base_natur	LOW PEAK 2014 HIGH PEAK 2015
collect_user	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017
creation_literatur	LOW PEAK 2016 HIGH PEAK 2017
data_group	LOW PEAK 2015 HIGH PEAK 2016
document_pars	HIGH PEAK 2014
exampl_queri	LOW PEAK 2015 HIGH PEAK 2016
normal_us	HIGH PEAK 2014
topic_refer	LOW PEAK 2014 HIGH PEAK 2015
complet_text	LOW PEAK 2015 HIGH PEAK 2016
context_process	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
correl_topic	DECREASING
data_chang	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017
help_peopl	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
inform_thu	HIGH PEAK 2014
limit_word	HIGH PEAK 2015
method_exampl	LOW PEAK 2014 HIGH PEAK 2016
mine_word	HIGH PEAK 2014
model_prove	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
model_singl	EQUILIBRIUM
nois_data	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016
perform_find	LOW PEAK 2014 HIGH PEAK 2015
term_process	LOW PEAK 2015 HIGH PEAK 2016
time_make	LOW PEAK 2014 HIGH PEAK 2015
us_collect	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017
us_determin	HIGH PEAK 2014
user_accord	LOW PEAK 2015 HIGH PEAK 2017

Theme	Interpretation
valu_text	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
word_correl	LOW PEAK 2016HIGH PEAK 2017
mean_approach	DECREASING
current_version	LOW PEAK 2014HIGH PEAK 2015
martin_porter	LOW PEAK 2016HIGH PEAK 2017
obtain_relev	LOW PEAK 2015HIGH PEAK 2016
refer_mean	LOW PEAK 2016HIGH PEAK 2017
term_obtain	DECREASING
approach_discov	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017
approach_estim	LOW PEAK 2015HIGH PEAK 2016
catégori_classif	LOW PEAK 2014HIGH PEAK 2015
classifi_built	LOW PEAK 2015HIGH PEAK 2016
classifi_simpl	HIGH PEAK 2014 LOW PEAK 2017
data_initi	LOW PEAK 2015HIGH PEAK 2016
featur_input	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017
function_determin	LOW PEAK 2015HIGH PEAK 2016
improv_document	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016
measur_emot	LOW PEAK 2015HIGH PEAK 2016
preprocess_token	LOW PEAK 2015HIGH PEAK 2016
problem_lack	LOW PEAK 2015HIGH PEAK 2016
process_complet	HIGH PEAK 2014
provid_signific	LOW PEAK 2016HIGH PEAK 2017
select_group	DECREASING
system_stem	LOW PEAK 2015HIGH PEAK 2016
thousand_document	LOW PEAK 2014HIGH PEAK 2015
train_remain	HIGH PEAK 2014
contain_user	DECREASING
email_address	DECREASING
account_order	HIGH PEAK 2014
accuraci_significantli	LOW PEAK 2016HIGH PEAK 2017
base_lexic	DECREASING
base_theori	LOW PEAK 2016HIGH PEAK 2017
becom_time	LOW PEAK 2016HIGH PEAK 2017
featur_task	LOW PEAK 2016HIGH PEAK 2017
limit_term	DECREASING
process_break	HIGH PEAK 2014
public_date	LOW PEAK 2014HIGH PEAK 2015
retriev_semant	HIGH PEAK 2014

<b>Theme</b>	<b>Interpretation</b>
space_number	LOW PEAK 2017
studi_analysi	DECREASING
symposium_document	DECREASING
tree_approach	LOW PEAK 2016HIGH PEAK 2017
apach_core	DECREASING

## APPENDIX 5-H

This appendix contains the distance from trend calculations for 2013.

<b>Column H</b>	<b>Column I</b>
SUM x	20085.0
SUM Y	10356.0
SUM XY	243188
SUM X^2	825733
n	2202
a	2.591682679
b	0.231471981
Trend Formula	$Y = 2.59168267894038 + 0.231471981128867X$

<b>Theme</b>	<b>2013 Tot</b>	<b>2013 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
machin_learn	200	40	8000	40000	8.886078905
text_mine	222	53	11766	49284	0.97846249
natur_languag	185	46	8510	34225	-0.586000812
inform_retriev	287	49	14063	82369	20.02414126
data_mine	149	38	5662	22201	-0.918992133
stop_word	139	40	5560	19321	-5.233711944
naiv_bay	103	25	2575	10609	1.433296735
text_classif	175	28	4900	30625	15.09927938
languag_process	119	37	4403	14161	-6.863151567
featur_select	144	20	2880	20736	15.92364796
text_document	131	33	4323	17161	-0.085487793
sentiment_analysi	41	13	533	1681	-0.917966095
neural_network	91	16	1456	8281	7.655632962
social_media	33	9	297	1089	1.230258056
precis_recal	81	26	2106	6561	-4.65908685
social_network	93	14	1302	8649	10.11857692
document_cluster	157	17	2669	24649	21.93278372
part_speech	52	14	728	2704	0.628225698
comput_linguist	82	25	2050	6724	-3.427614868

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
arab_text	112	9	1008	12544	19.51654457
topic_model	72	8	576	5184	11.25766532
term_frequenc	91	21	1911	8281	2.655632962
text_categor	152	23	3496	23104	14.77542381
support_vector	105	24	2520	11025	2.896240697
vector_space	78	23	1794	6084	-2.353502793
train_data	42	19	798	1764	-6.686494114
vector_machin	93	22	2046	8649	2.118576924
name_entiti	26	12	312	676	-3.390045812
search_engin	61	17	1037	3721	-0.288526472
similar_measur	61	16	976	3721	0.711473528
document_frequenc	65	24	1560	4225	-6.362638548
featur_extract	63	16	1008	3969	1.17441749
posit_neg	30	15	450	900	-5.464157887
base_approach	38	18	684	1444	-6.612382038
term_weight	69	21	1449	4761	-2.436750623
text_process	54	21	1134	2916	-5.90883034
text_analysi	46	19	874	2116	-5.760606189
learn_algorithm	45	17	765	2025	-3.99207817
word_remov	50	28	1400	2500	-13.83471826
space_model	59	22	1298	3481	-5.751470434
artifici_intellig	55	23	1265	3025	-7.677358359
cross_valid	34	8	272	1156	2.461730037
arab_languag	35	9	315	1225	1.693202018
featur_vector	64	18	1152	4096	-0.594110529
stem_algorithm	41	18	738	1681	-5.917966095
cluster_algorithm	83	13	1079	6889	8.803857113
word_document	45	21	945	2025	-7.99207817
train_test	40	16	640	1600	-4.149438076
scienc_engin	40	16	640	1600	-4.149438076
number_word	55	21	1155	3025	-5.677358359
word_stem	40	24	960	1600	-12.14943808
inform_extract	32	18	576	1024	-8.001213925
decis_tree	22	15	330	484	-7.315933736
document_collect	49	19	931	2401	-5.066190246
semant_analysi	36	17	612	1296	-6.075326
softwar_engin	8	5	40	64	-0.556541472
document_document	103	32	3296	10609	-5.566703265

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
latent_semant	40	16	640	1600	-4.149438076
invers_document	36	17	612	1296	-6.075326
retriev_system	70	21	1470	4900	-2.205278642
depart_comput	49	26	1274	2401	-12.06619025
bay_classifi	23	10	230	529	-2.084461755
test_data	18	10	180	324	-3.241821661
cosin_similar	44	15	660	1936	-2.223550151
document_term	40	21	840	1600	-9.149438076
data_process	16	10	160	256	-3.704765623
data_set	60	18	1080	3600	-1.519998453
data_collect	38	13	494	1444	-1.612382038
rule_base	16	9	144	256	-2.704765623
word_list	55	20	1100	3025	-4.677358359
train_model	35	9	315	1225	1.693202018
keyword_extract	80	5	400	6400	16.10944117
random_forest	6	2	12	36	1.980514566
base_method	51	14	714	2601	0.396753717
nearest_neighbor	52	12	624	2704	2.628225698
latent_dirichlet	26	11	286	676	-2.390045812
stem_word	31	13	403	961	-3.232685906
classif_algorithm	27	12	324	729	-3.158573831
porter_stemmer	104	8	832	10816	18.66476872
speech_tag	33	12	396	1089	-1.769741944
mine_techniqu	13	6	78	169	-0.399181566
knowledg_base	12	9	108	144	-3.630653548
scienc_technolog	41	14	574	1681	-1.917966095
electr_engin	5	4	20	25	-0.250957415
supervis_learn	20	11	220	400	-3.778877698
semant_similar	6	4	24	36	-0.019485434
model_base	47	21	987	2209	-7.529134208
base_featur	23	11	253	529	-3.084461755
engin_comput	5	4	20	25	-0.250957415
light_stem	36	7	252	1296	3.924674
text_file	21	12	252	441	-4.547405717
cloud_comput	9	2	18	81	2.674930509
data_analysi	22	10	220	484	-2.315933736
document_contain	45	22	990	2025	-8.99207817
dirichlet_alloc	24	11	264	576	-2.852989774

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
automat_text	46	17	782	2116	-3.760606189
remov_stop	26	16	416	676	-7.390045812
engin_technolog	9	4	36	81	0.674930509
cluster_cluster	36	11	396	1296	-0.075326
document_classif	29	18	522	841	-8.695629868
word_sentenc	20	9	180	400	-1.778877698
model_us	15	7	105	225	-0.936237604
word_frequenc	20	12	240	400	-4.778877698
languag_model	27	11	297	729	-2.158573831
classif_us	24	14	336	576	-5.852989774
solv_problem	21	16	336	441	-8.547405717
system_us	31	12	372	961	-2.232685906
recal_precis	22	12	264	484	-4.315933736
learn_approach	12	10	120	144	-4.630653548
document_summar	22	6	132	484	1.684066264
frequenc_word	21	12	252	441	-4.547405717
inform_scienc	37	20	740	1369	-8.843854019
word_text	24	18	432	576	-9.852989774
frequenc_term	41	21	861	1681	-8.917966095
frequenc_invers	23	15	345	529	-7.084461755
improv_perform	30	19	570	900	-9.464157887
relev_document	40	19	760	1600	-7.149438076
inform_process	20	17	340	400	-9.778877698
comput_applic	55	12	660	3025	3.322641641
document_word	31	17	527	961	-7.232685906
extract_featur	37	16	592	1369	-4.843854019
compar_studi	30	16	480	900	-6.464157887
method_base	30	14	420	900	-4.464157887
select_method	49	11	539	2401	2.933809754
recal_measur	18	11	198	324	-4.241821661
classif_accuraci	35	14	490	1225	-3.306797982
number_time	19	14	266	361	-7.01034968
topic_topic	46	9	414	2116	4.239393811
learn_model	29	6	174	841	3.304370132
document_repres	44	23	1012	1936	-10.22355015
languag_text	19	14	266	361	-7.01034968
learn_techniqu	18	11	198	324	-4.241821661
cluster_method	53	13	689	2809	1.859697679

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
similar_document	35	14	490	1225	-3.306797982
multi_document	31	3	93	961	6.767314094
base_model	31	10	310	961	-0.232685906
number_featur	30	13	390	900	-3.464157887
document_us	37	21	777	1369	-9.843854019
knowledg_discoveri	28	16	448	784	-6.927101849
word_appear	20	14	280	400	-6.778877698
word_featur	13	9	117	169	-3.399181566
document_vector	35	12	420	1225	-1.306797982
mean_word	16	10	160	256	-3.704765623
extract_text	14	10	140	196	-4.167709585
textual_data	19	11	209	361	-4.01034968
form_word	38	8	304	1444	3.387617962
model_inform	5	5	25	25	-1.250957415
repres_document	38	19	722	1444	-7.612382038
model_model	27	9	243	729	-0.158573831
process_step	18	15	270	324	-8.241821661
extract_inform	12	8	96	144	-2.630653548
base_similar	25	11	275	625	-2.621517793
languag_technolog	18	9	162	324	-2.241821661
word_base	14	8	112	196	-2.167709585
comput_engin	8	5	40	64	-0.556541472
scienc_inform	14	6	84	196	-0.167709585
right_reserv	12	5	60	144	0.369346452
opinion_mine	38	5	190	1444	6.387617962
process_text	17	14	238	289	-7.473293642
evalu_metric	7	5	35	49	-0.788013453
manag_system	6	4	24	36	-0.019485434
classif_task	36	13	468	1296	-2.075326
document_number	22	14	308	484	-6.315933736
stem_process	15	13	195	225	-6.936237604
test_dataset	13	4	52	169	1.600818434
document_represent	48	9	432	2304	4.702337773
noun_verb	11	7	77	121	-1.862125529
weight_term	29	16	464	841	-6.695629868
us_word	16	12	192	256	-5.704765623
amount_data	9	5	45	81	-0.325069491
word_model	18	10	180	324	-3.241821661

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
document_matrix	40	9	360	1600	2.850561924
number_topic	23	4	92	529	3.915538245
fold_cross	12	6	72	144	-0.630653548
similar_word	10	7	70	100	-2.09359751
word_vector	8	2	16	64	2.443458528
sentenc_document	35	10	350	1225	0.693202018
featur_space	33	15	495	1089	-4.769741944
averag_precis	25	11	275	625	-2.621517793
term_base	24	8	192	576	0.147010226
mean_cluster	19	9	171	361	-2.01034968
logist_regress	1	1	1	1	1.82315466
term_extract	29	10	290	841	-0.695629868
collect_document	27	20	540	729	-11.15857383
recal_score	6	3	18	36	0.980514566
us_data	6	5	30	36	-1.019485434
khoja_stemmer	3	1	3	9	2.286098622
text_content	3	3	9	9	0.286098622
stock_market	1	1	1	1	1.82315466
number_cluster	38	11	418	1444	0.387617962
morpholog_analysi	24	10	240	576	-1.852989774
pattern_recognit	14	13	182	196	-7.167709585
us_inform	9	8	72	81	-3.325069491
data_data	19	8	152	361	-1.01034968
contain_word	25	13	325	625	-4.621517793
classif_model	13	11	143	169	-5.399181566
base_text	10	7	70	100	-2.09359751
step_step	35	9	315	1225	1.693202018
user_queri	29	5	145	841	4.304370132
model_train	18	8	144	324	-1.241821661
train_document	54	12	648	2916	3.09116966
featur_featur	27	15	405	729	-6.158573831
index_term	23	14	322	529	-6.084461755
select_featur	18	7	126	324	-0.241821661
unstructur_data	37	11	407	1369	0.156145981
arab_document	33	7	231	1089	3.230258056
us_machin	8	7	56	64	-2.556541472
time_consum	23	16	368	529	-8.084461755
algorithm_base	14	8	112	196	-2.167709585

<b>Theme</b>	<b>2013 Tot</b>	<b>2013 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
analysi_retriev	5	5	25	25	-1.250957415
knowledg_manag	41	12	492	1681	0.082033905
cluster_base	25	12	300	625	-3.621517793
cluster_document	24	11	264	576	-2.852989774
learn_method	20	15	300	400	-7.778877698
improv_accuraci	18	13	234	324	-6.241821661
word_mean	15	7	105	225	-0.936237604
textual_content	2	2	4	4	1.054626641
cluster_us	22	12	264	484	-4.315933736
human_languag	12	8	96	144	-2.630653548
predict_model	9	5	45	81	-0.325069491
weight_scheme	27	12	324	729	-3.158573831
base_system	19	11	209	361	-4.01034968
intellig_system	12	8	96	144	-2.630653548
collect_data	5	4	20	25	-0.250957415
comput_inform	23	14	322	529	-6.084461755
mobil_devic	20	4	80	400	3.221122302
word_occurr	19	5	95	361	1.98965032
document_text	26	16	416	676	-7.390045812
classifi_classifi	24	8	192	576	0.147010226
cluster_techniqu	28	10	280	784	-0.927101849
term_occur	22	13	286	484	-5.315933736
gold_standard	7	5	35	49	-0.788013453
queri_term	4	2	8	16	1.517570603
mean_algorithm	19	9	171	361	-2.01034968
world_wide	19	12	228	361	-5.01034968
text_preprocess	17	11	187	289	-4.473293642
system_develop	15	4	60	225	2.063762396
term_term	27	14	378	729	-5.158573831
develop_inform	21	13	273	441	-5.547405717
point_view	16	5	80	256	1.295234377
word_root	9	8	72	81	-3.325069491
recommend_system	4	2	8	16	1.517570603
maximum_entropi	45	9	405	2025	4.00792183
stem_stem	27	10	270	729	-1.158573831
error_rate	24	6	144	576	2.147010226
plai_role	19	9	171	361	-2.01034968
singl_word	13	6	78	169	-0.399181566

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
prefix_suffix	10	7	70	100	-2.09359751
imag_process	7	3	21	49	1.211986547
root_word	5	5	25	25	-1.250957415
document_retriev	42	17	714	1764	-4.686494114
retriev_document	31	14	434	961	-4.232685906
spam_filter	26	7	182	676	1.609954188
occur_document	25	15	375	625	-6.621517793
increas_number	18	12	216	324	-5.241821661
system_base	17	10	170	289	-3.473293642
classif_method	9	7	63	81	-2.325069491
comput_system	3	2	6	9	1.286098622
inform_gain	18	8	144	324	-1.241821661
data_train	11	6	66	121	-0.862125529
document_similar	16	9	144	256	-2.704765623
us_text	10	9	90	100	-4.09359751
docu_ment	7	4	28	49	0.211986547
sourc_text	2	2	4	4	1.054626641
full_text	27	4	108	729	4.841426169
latent_topic	21	4	84	441	3.452594283
model_text	20	11	220	400	-3.778877698
advanc_comput	18	4	72	324	2.758178339
genet_algorithm	9	3	27	81	1.674930509
knowledg_data	5	4	20	25	-0.250957415
search_queri	5	2	10	25	1.749042585
frequent_word	13	9	117	169	-3.399181566
inform_text	12	11	132	144	-5.630653548
term_appear	33	14	462	1089	-3.769741944
class_label	16	10	160	256	-3.704765623
train_dataset	4	3	12	16	0.517570603
number_term	23	12	276	529	-4.084461755
probabl_distribut	23	8	184	529	-0.084461755
preprocess_step	16	12	192	256	-5.704765623
porter_stem	12	8	96	144	-2.630653548
issn_onlin	10	2	20	100	2.90640249
linguist_featur	7	4	28	49	0.211986547
similar_score	5	5	25	25	-1.250957415
text_retriev	21	11	231	441	-3.547405717
evalu_us	16	7	112	256	-0.704765623

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
word_occur	15	10	150	225	-3.936237604
condit_probabl	12	7	84	144	-1.630653548
data_engin	4	3	12	16	0.517570603
test_document	49	12	588	2401	1.933809754
process_manag	25	10	250	625	-1.621517793
exampl_word	17	10	170	289	-3.473293642
languag_resourc	15	13	195	225	-6.936237604
reduc_number	15	13	195	225	-6.936237604
base_term	12	9	108	144	-3.630653548
approach_base	11	7	77	121	-1.862125529
base_classifi	11	8	88	121	-2.862125529
process_techniqu	11	8	88	121	-2.862125529
fals_posit	10	5	50	100	-0.09359751
frequent_pattern	4	1	4	16	2.517570603
comput_commun	32	6	192	1024	3.998786075
extract_keyword	29	4	116	841	5.304370132
deep_learn	12	1	12	144	4.369346452
method_us	12	10	120	144	-4.630653548
phrase_base	39	4	156	1521	7.619089943
document_corpu	33	13	429	1089	-2.769741944
inform_knowledg	19	12	228	361	-5.01034968
classifi_text	16	11	176	256	-4.704765623
word_extract	11	8	88	121	-2.862125529
word_count	10	6	60	100	-1.09359751
retriev_inform	32	17	544	1024	-7.001213925
list_word	28	11	308	784	-1.927101849
structur_data	23	7	161	529	0.915538245
input_data	16	9	144	256	-2.704765623
appear_document	15	10	150	225	-3.936237604
train_classifi	13	8	104	169	-2.399181566
sentenc_sentenc	12	6	72	144	-0.630653548
classifi_us	10	8	80	100	-3.09359751
text_us	9	7	63	81	-2.325069491
combin_featur	4	3	12	16	0.517570603
classifi_train	21	8	168	441	-0.547405717
approach_us	19	11	209	361	-4.01034968
document_queri	16	5	80	256	1.295234377
classif_problem	14	13	182	196	-7.167709585

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
object_function	9	4	36	81	0.674930509
text_corpu	6	6	36	36	-2.019485434
process_inform	4	4	16	16	-0.482429397
document_base	21	12	252	441	-4.547405717
infor_mation	13	5	65	169	0.600818434
level_featur	13	3	39	169	2.600818434
system_perform	12	7	84	144	-1.630653548
program_languag	11	8	88	121	-2.862125529
system_applic	8	7	56	64	-2.556541472
queri_expans	3	3	9	9	0.286098622
word_order	18	8	144	324	-1.241821661
algorithm_algorithm	17	9	153	289	-2.473293642
text_base	14	8	112	196	-2.167709585
pattern_mine	13	5	65	169	0.600818434
issn_volum	10	3	30	100	1.90640249
remov_stem	10	9	90	100	-4.09359751
evalu_measur	12	9	108	144	-3.630653548
artifici_neural	5	3	15	25	0.749042585
document_featur	28	13	364	784	-3.927101849
view_project	12	6	72	144	-0.630653548
model_evalu	6	5	30	36	-1.019485434
media_text	1	1	1	1	1.82315466
euclidean_distanc	18	9	162	324	-2.241821661
contain_term	15	12	180	225	-5.936237604
algorithm_perform	11	8	88	121	-2.862125529
extract_us	9	6	54	81	-1.325069491
colleg_engin	6	3	18	36	0.980514566
build_model	5	3	15	25	0.749042585
linguist_analysi	2	2	4	4	1.054626641
engin_scien	1	1	1	1	1.82315466
contain_document	19	11	209	361	-4.01034968
singl_document	15	6	90	225	0.063762396
data_structur	12	10	120	144	-4.630653548
system_design	9	8	72	81	-3.325069491
soft_comput	7	6	42	49	-1.788013453
volum_number	1	1	1	1	1.82315466
relev_inform	19	13	247	361	-6.01034968
process_document	18	13	234	324	-6.241821661

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
text_featur	16	6	96	256	0.295234377
cluster_process	13	7	91	169	-1.399181566
word_us	12	11	132	144	-5.630653548
classif_process	11	9	99	121	-3.862125529
word_term	6	5	30	36	-1.019485434
perform_test	5	2	10	25	1.749042585
input_output	20	6	120	400	1.221122302
user_request	16	11	176	256	-4.704765623
word_embed	15	1	15	225	5.063762396
random_field	10	4	40	100	0.90640249
featur_base	9	7	63	81	-2.325069491
public_http	9	9	81	81	-4.325069491
word_topic	9	4	36	81	0.674930509
number_iter	8	5	40	64	-0.556541472
unigram_bigram	3	3	9	9	0.286098622
allow_user	17	9	153	289	-2.473293642
design_implement	15	8	120	225	-1.936237604
content_base	14	6	84	196	-0.167709585
semant_index	12	10	120	144	-4.630653548
cluster_text	8	6	48	64	-1.556541472
mathemat_model	3	3	9	9	0.286098622
document_process	18	15	270	324	-8.241821661
algorithm_us	15	10	150	225	-3.936237604
period_time	15	6	90	225	0.063762396
word_sens	12	10	120	144	-4.630653548
content_page	10	10	100	100	-5.09359751
wide_rang	9	6	54	81	-1.325069491
comput_time	6	6	36	36	-2.019485434
autom_text	30	10	300	900	-0.464157887
document_topic	15	6	90	225	0.063762396
syntact_semant	14	4	56	196	1.832290415
method_text	13	9	117	169	-3.399181566
unsupervis_learn	13	6	78	169	-0.399181566
discoveri_data	12	10	120	144	-4.630653548
informa_tion	11	6	66	121	-0.862125529
data_text	10	9	90	100	-4.09359751
topic_document	9	5	45	81	-0.325069491
emot_recognit	8	2	16	64	2.443458528

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
perform_us	6	6	36	36	-2.019485434
base_word	28	13	364	784	-3.927101849
vector_represent	16	6	96	256	0.295234377
us_featur	12	9	108	144	-3.630653548
measur_similar	11	9	99	121	-3.862125529
corpu_base	9	4	36	81	0.674930509
text_word	6	6	36	36	-2.019485434
graph_base	5	5	25	25	-1.250957415
semant_featur	4	3	12	16	0.517570603
confus_matrix	3	2	6	9	1.286098622
emot_classif	28	1	28	784	8.072898151
network_analysi	25	7	175	625	1.378482207
unstructur_text	17	5	85	289	1.526706358
origin_document	14	8	112	196	-2.167709585
proc_conf	13	8	104	169	-2.399181566
sentenc_word	12	7	84	144	-1.630653548
distanc_measur	9	4	36	81	0.674930509
berlin_heidelberg	5	4	20	25	-0.250957415
measur_precis	3	3	9	9	0.286098622
similar_sentenc	3	2	6	9	1.286098622
represent_document	19	8	152	361	-1.01034968
train_corpu	8	3	24	64	1.443458528
uniqu_word	7	6	42	49	-1.788013453
data_model	4	2	8	16	1.517570603
hierarch_cluster	20	9	180	400	-1.778877698
probabilist_model	14	7	98	196	-1.167709585
evalu_perform	11	9	99	121	-3.862125529
model_perform	11	6	66	121	-0.862125529
word_level	11	3	33	121	2.137874471
pattern_base	9	3	27	81	1.674930509
classif_techniqu	8	6	48	64	-1.556541472
calcul_us	7	5	35	49	-0.788013453
data_sourc	6	5	30	36	-1.019485434
occurr_word	6	6	36	36	-2.019485434
commun_technolog	24	7	168	576	1.147010226
stem_arab	10	5	50	100	-0.09359751
inform_commun	8	6	48	64	-1.556541472
taken_account	6	5	30	36	-1.019485434

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
fals_neg	3	3	9	9	0.286098622
tweet_contain	1	1	1	1	1.82315466
occur_term	23	10	230	529	-2.084461755
base_cluster	18	7	126	324	-0.241821661
reduc_dimension	15	7	105	225	-0.936237604
system_evalu	13	9	117	169	-3.399181566
word_given	13	11	143	169	-5.399181566
mine_text	11	9	99	121	-3.862125529
dataset_dataset	9	7	63	81	-2.325069491
process_time	9	6	54	81	-1.325069491
time_period	8	4	32	64	0.443458528
automat_extract	6	5	30	36	-1.019485434
dataset_consist	6	6	36	36	-2.019485434
file_contain	4	4	16	16	-0.482429397
test_perform	3	3	9	9	0.286098622
share_task	2	1	2	4	2.054626641
document_train	19	8	152	361	-1.01034968
word_cluster	17	6	102	289	0.526706358
user_gener	10	4	40	100	0.90640249
base_semant	8	6	48	64	-1.556541472
statist_analysi	6	3	18	36	0.980514566
transact_knowledg	4	3	12	16	0.517570603
model_built	3	2	6	9	1.286098622
twitter_user	2	1	2	4	2.054626641
model_document	23	13	299	529	-5.084461755
retriev_relev	21	9	189	441	-1.547405717
gram_gram	20	6	120	400	1.221122302
speech_recognit	5	5	25	25	-1.250957415
linear_regress	1	1	1	1	1.82315466
data_point	24	5	120	576	3.147010226
common_word	19	11	209	361	-4.01034968
signal_process	14	7	98	196	-1.167709585
calcul_similar	12	7	84	144	-1.630653548
system_system	11	7	77	121	-1.862125529
model_data	7	6	42	49	-1.788013453
standard_arab	6	4	24	36	-0.019485434
perform_system	4	2	8	16	1.517570603
valu_calcul	1	1	1	1	1.82315466

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
cluster_similar	20	10	200	400	-2.778877698
classif_text	15	10	150	225	-3.936237604
frequenc_document	15	10	150	225	-3.936237604
perform_evalu	12	10	120	144	-4.630653548
precis_measur	12	3	36	144	2.369346452
algorithm_appli	10	10	100	100	-5.09359751
text_classifi	10	8	80	100	-3.09359751
model_predict	6	3	18	36	0.980514566
analysi_method	5	5	25	25	-1.250957415
algo_rithm	4	2	8	16	1.517570603
distribut_topic	2	1	2	4	2.054626641
classifi_document	16	11	176	256	-4.704765623
text_collect	16	8	128	256	-1.704765623
extract_term	13	7	91	169	-1.399181566
repres_vector	13	10	130	169	-4.399181566
word_categori	13	7	91	169	-1.399181566
accuraci_precis	11	5	55	121	0.137874471
punctuat_mark	9	7	63	81	-2.325069491
test_set	9	6	54	81	-1.325069491
data_extract	8	8	64	64	-3.556541472
comput_technolog	7	6	42	49	-1.788013453
word_represent	6	3	18	36	0.980514566
tabl_perform	5	4	20	25	-0.250957415
neg_exampl	3	2	6	9	1.286098622
featur_word	2	2	4	4	1.054626641
rule_mine	2	2	4	4	1.054626641
test_test	2	2	4	4	1.054626641
us_porter	31	5	155	961	4.767314094
content_document	15	13	195	225	-6.936237604
word_gener	15	8	120	225	-1.936237604
document_model	7	6	42	49	-1.788013453
gener_word	7	3	21	49	1.211986547
featur_valu	6	4	24	36	-0.019485434
highest_accuraci	6	2	12	36	1.980514566
mine_method	6	3	18	36	0.980514566
develop_model	4	3	12	16	0.517570603
lexic_databas	4	4	16	16	-0.482429397
regress_model	4	3	12	16	0.517570603

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
tweet_user	1	1	1	1	1.82315466
class_class	17	6	102	289	0.526706358
classif_cluster	13	12	156	169	-6.399181566
featur_text	13	6	78	169	-0.399181566
stem_stop	12	10	120	144	-4.630653548
process_system	11	6	66	121	-0.862125529
process_extract	10	8	80	100	-3.09359751
develop_system	9	5	45	81	-0.325069491
implement_us	9	7	63	81	-2.325069491
request_enhanc	9	9	81	81	-4.325069491
dataset_contain	8	6	48	64	-1.556541472
extract_word	8	8	64	64	-3.556541472
model_featur	6	5	30	36	-1.019485434
comput_vision	4	3	12	16	0.517570603
us_classifi	4	2	8	16	1.517570603
train_exampl	21	12	252	441	-4.547405717
evalu_system	16	11	176	256	-4.704765623
word_contain	15	9	135	225	-2.936237604
method_appli	14	13	182	196	-7.167709585
extract_method	13	6	78	169	-0.399181566
token_token	12	5	60	144	0.369346452
repres_text	11	7	77	121	-1.862125529
retriev_text	11	10	110	121	-4.862125529
discuss_stat	9	9	81	81	-4.325069491
enhanc_download	9	9	81	81	-4.325069491
public_stat	9	9	81	81	-4.325069491
view_public	9	9	81	81	-4.325069491
word_dictionari	7	5	35	49	-0.788013453
cluster_number	5	5	25	25	-1.250957415
word_repres	4	3	12	16	0.517570603
correl_coeffici	3	2	6	9	1.286098622
statist_machin	21	2	42	441	5.452594283
porter_algorithm	15	8	120	225	-1.936237604
twitter_data	12	1	12	144	4.369346452
mine_algorithm	10	8	80	100	-3.09359751
extract_document	9	8	72	81	-3.325069491
sentenc_text	9	6	54	81	-1.325069491
semant_relationship	8	6	48	64	-1.556541472

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
techniqu_text	7	7	49	49	-2.788013453
make_process	6	5	30	36	-1.019485434
human_resourc	1	1	1	1	1.82315466
qualiti_cluster	18	5	90	324	1.758178339
relev_featur	16	9	144	256	-2.704765623
manual_label	15	2	30	225	4.063762396
represent_model	14	5	70	196	0.832290415
word_consid	14	11	154	196	-5.167709585
publiccli_avail	12	4	48	144	1.369346452
automat_index	11	9	99	121	-3.862125529
springer_verlag	11	8	88	121	-2.862125529
distribut_word	10	6	60	100	-1.09359751
keyword_text	10	6	60	100	-1.09359751
word_similar	10	7	70	100	-2.09359751
root_stem	7	7	49	49	-2.788013453
measur_accuraci	6	5	30	36	-1.019485434
cluster_approach	21	9	189	441	-1.547405717
classif_approach	15	7	105	225	-0.936237604
interest_includ	14	10	140	196	-4.167709585
inform_document	13	9	117	169	-3.399181566
mine_inform	12	11	132	144	-5.630653548
document_index	11	9	99	121	-3.862125529
featur_document	11	7	77	121	-1.862125529
model_repres	11	8	88	121	-2.862125529
neg_word	11	2	22	121	3.137874471
sequenc_word	9	7	63	81	-2.325069491
perform_model	7	4	28	49	0.211986547
sens_disambigu	6	5	30	36	-1.019485434
data_base	4	4	16	16	-0.482429397
model_select	4	2	8	16	1.517570603
search_space	4	3	12	16	0.517570603
tweet_tweet	3	2	6	9	1.286098622
predict_stock	1	1	1	1	1.82315466
classifi_base	14	12	168	196	-6.167709585
select_text	14	11	154	196	-5.167709585
bay_algorithm	13	9	117	169	-3.399181566
represent_text	13	8	104	169	-2.399181566
resourc_evalu	13	9	117	169	-3.399181566

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
dimension_space	11	9	99	121	-3.862125529
main_idea	11	5	55	121	0.137874471
tree_structur	11	7	77	121	-1.862125529
algorithm_cluster	9	6	54	81	-1.325069491
word_stop	9	9	81	81	-4.325069491
measur_measur	8	6	48	64	-1.556541472
extract_sentenc	7	5	35	49	-0.788013453
problem_solv	7	6	42	49	-1.788013453
word_corpu	6	5	30	36	-1.019485434
word_found	5	4	20	25	-0.250957415
base_search	3	3	9	9	0.286098622
data_store	2	2	4	4	1.054626641
neg_neutral	2	1	2	4	2.054626641
issu_march	1	1	1	1	1.82315466
search_algorithm	1	1	1	1	1.82315466
recal_valu	10	4	40	100	0.90640249
techniqu_base	9	8	72	81	-3.325069491
data_preprocess	6	3	18	36	0.980514566
method_perform	6	6	36	36	-2.019485434
obtain_us	6	6	36	36	-2.019485434
statist_model	6	6	36	36	-2.019485434
accuraci_rate	2	2	4	4	1.054626641
textual_inform	2	2	4	4	1.054626641
cluster_data	14	6	84	196	-0.167709585
test_collect	12	10	120	144	-4.630653548
semant_inform	11	7	77	121	-1.862125529
assist_professor	10	8	80	100	-3.09359751
weight_word	10	6	60	100	-1.09359751
bayesian_classifi	6	5	30	36	-1.019485434
given_text	6	4	24	36	-0.019485434
word_filter	4	4	16	16	-0.482429397
content_word	15	5	75	225	1.063762396
execut_time	13	3	39	169	2.600818434
highest_score	11	8	88	121	-2.862125529
repres_number	9	5	45	81	-0.325069491
analyz_data	7	7	49	49	-2.788013453
model_gener	6	5	30	36	-1.019485434
repres_word	6	4	24	36	-0.019485434

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
languag_word	5	4	20	25	-0.250957415
topic_word	3	2	6	9	1.286098622
represent_word	2	1	2	4	2.054626641
tweet_us	1	1	1	1	1.82315466
base_algorithm	13	6	78	169	-0.399181566
model_paramet	12	6	72	144	-0.630653548
document_sentenc	11	5	55	121	0.137874471
content_text	7	6	42	49	-1.788013453
method_automat	7	5	35	49	-0.788013453
user_user	7	6	42	49	-1.788013453
further_process	6	5	30	36	-1.019485434
system_implement	6	6	36	36	-2.019485434
process_perform	5	4	20	25	-0.250957415
springer_berlin	4	3	12	16	0.517570603
accuraci_us	3	3	9	9	0.286098622
technolog_comput	3	3	9	9	0.286098622
volum_page	1	1	1	1	1.82315466
featur_gener	17	5	85	289	1.526706358
perform_measur	17	9	153	289	-2.473293642
base_analysi	15	9	135	225	-2.936237604
amount_inform	14	8	112	196	-2.167709585
document_level	14	5	70	196	0.832290415
input_document	12	8	96	144	-2.630653548
sentenc_base	12	3	36	144	2.369346452
mine_applic	11	9	99	121	-3.862125529
valu_term	11	6	66	121	-0.862125529
word_cloud	11	4	44	121	1.137874471
root_form	10	8	80	100	-3.09359751
improv_qualiti	8	4	32	64	0.443458528
societi_inform	8	8	64	64	-3.556541472
us_algorithm	8	5	40	64	-0.556541472
model_develop	7	7	49	49	-2.788013453
previou_studi	6	3	18	36	0.980514566
posit_word	5	2	10	25	1.749042585
text_contain	5	3	15	25	0.749042585
detect_system	4	2	8	16	1.517570603
charact_recognit	3	3	9	9	0.286098622
model_test	2	1	2	4	2.054626641

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
frequent_itemset	1	1	1	1	1.82315466
measur_perform	11	6	66	121	-0.862125529
document_calcul	10	7	70	100	-2.09359751
gibb_sampl	8	3	24	64	1.443458528
solut_problem	8	4	32	64	0.443458528
avail_onlin	6	5	30	36	-1.019485434
weight_assign	6	4	24	36	-0.019485434
model_topic	5	3	15	25	0.749042585
measur_text	2	2	4	4	1.054626641
help_user	15	10	150	225	-3.936237604
cluster_perform	13	8	104	169	-2.399181566
rank_document	10	4	40	100	0.90640249
train_sampl	10	4	40	100	0.90640249
perform_experi	9	7	63	81	-2.325069491
previou_step	9	7	63	81	-2.325069491
step_process	8	8	64	64	-3.556541472
time_complex	8	6	48	64	-1.556541472
number_text	7	5	35	49	-0.788013453
us_techniqu	6	6	36	36	-2.019485434
find_similar	5	5	25	25	-1.250957415
correctli_classifi	4	4	16	16	-0.482429397
word_process	4	4	16	16	-0.482429397
languag_arab	3	2	6	9	1.286098622
type_data	3	3	9	9	0.286098622
data_avail	2	2	4	4	1.054626641
mine_data	2	2	4	4	1.054626641
number_user	1	1	1	1	1.82315466
extract_system	14	4	56	196	1.832290415
dimension_vector	13	6	78	169	-0.399181566
learn_text	12	9	108	144	-3.630653548
techniqu_appli	11	8	88	121	-2.862125529
semant_mean	10	4	40	100	0.90640249
similar_valu	10	5	50	100	-0.09359751
charact_word	9	5	45	81	-0.325069491
cluster_centroid	9	5	45	81	-0.325069491
function_word	7	6	42	49	-1.788013453
user_search	7	4	28	49	0.211986547
word_number	7	6	42	49	-1.788013453

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
order_reduc	6	6	36	36	-2.019485434
degre_comput	5	3	15	25	0.749042585
dimension_data	5	4	20	25	-0.250957415
exist_method	5	4	20	25	-0.250957415
extract_data	5	4	20	25	-0.250957415
vector_word	5	4	20	25	-0.250957415
knowledg_engin	4	4	16	16	-0.482429397
scienc_depart	4	4	16	16	-0.482429397
string_match	4	3	12	16	0.517570603
main_problem	3	3	9	9	0.286098622
model_classifi	3	3	9	9	0.286098622
measur_us	2	2	4	4	1.054626641
origin_text	2	2	4	4	1.054626641
statist_inform	20	4	80	400	3.221122302
measur_evalu	9	6	54	81	-1.325069491
find_relev	6	5	30	36	-1.019485434
arab_corpu	5	3	15	25	0.749042585
system_architectur	5	3	15	25	0.749042585
assign_weight	4	4	16	16	-0.482429397
mean_text	4	4	16	16	-0.482429397
addit_featur	3	2	6	9	1.286098622
topic_base	3	3	9	9	0.286098622
weight_averag	3	3	9	9	0.286098622
word_token	3	3	9	9	0.286098622
group_group	2	2	4	4	1.054626641
process_model	1	1	1	1	1.82315466
score_score	1	1	1	1	1.82315466
preprocess_text	13	5	65	169	0.600818434
algorithm_document	12	7	84	144	-1.630653548
classifi_perform	12	9	108	144	-3.630653548
word_semant	12	9	108	144	-3.630653548
analysi_document	11	6	66	121	-0.862125529
us_term	11	7	77	121	-1.862125529
combin_word	8	8	64	64	-3.556541472
network_base	7	7	49	49	-2.788013453
time_term	6	5	30	36	-1.019485434
gener_topic	5	4	20	25	-0.250957415
improv_effici	5	4	20	25	-0.250957415

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
data_contain	3	3	9	9	0.286098622
free_text	3	3	9	9	0.286098622
linear_combin	1	1	1	1	1.82315466
system_extract	14	3	42	196	2.832290415
classifi_test	12	6	72	144	-0.630653548
tech_niqu	11	5	55	121	0.137874471
us_train	10	10	100	100	-5.09359751
word_common	10	9	90	100	-4.09359751
count_number	9	6	54	81	-1.325069491
evalu_model	9	3	27	81	1.674930509
experi_perform	9	4	36	81	0.674930509
classif_base	8	5	40	64	-0.556541472
featur_train	8	5	40	64	-0.556541472
mine_us	8	5	40	64	-0.556541472
term_text	8	7	56	64	-2.556541472
model_method	7	7	49	49	-2.788013453
provid_inform	7	5	35	49	-0.788013453
start_point	7	4	28	49	0.211986547
process_method	6	2	12	36	1.980514566
textual_document	6	4	24	36	-0.019485434
applic_text	5	4	20	25	-0.250957415
corpu_document	5	5	25	25	-1.250957415
gener_model	5	5	25	25	-1.250957415
group_similar	5	5	25	25	-1.250957415
lexicon_base	5	2	10	25	1.749042585
valu_document	5	5	25	25	-1.250957415
data_test	3	3	9	9	0.286098622
word_select	3	3	9	9	0.286098622
base_topic	1	1	1	1	1.82315466
human_factor	1	1	1	1	1.82315466
predefin_categorii	22	8	176	484	-0.315933736
classifi_categorii	17	5	85	289	1.526706358
document_total	15	12	180	225	-5.936237604
sentenc_length	12	3	36	144	2.369346452
word_approach	12	11	132	144	-5.630653548
cluster_qualiti	11	5	55	121	0.137874471
collect_text	10	7	70	100	-2.09359751
maximum_likelihood	10	7	70	100	-2.09359751

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
measur_valu	9	5	45	81	-0.325069491
us_support	9	6	54	81	-1.325069491
word_includ	9	9	81	81	-4.325069491
document_consid	8	8	64	64	-3.556541472
empir_studi	8	7	56	64	-2.556541472
system_test	7	5	35	49	-0.788013453
comput_similar	6	5	30	36	-1.019485434
corpu_text	6	5	30	36	-1.019485434
morgan_kaufmann	6	6	36	36	-2.019485434
stem_us	6	6	36	36	-2.019485434
averag_number	5	3	15	25	0.749042585
frequenc_count	5	4	20	25	-0.250957415
includ_text	5	4	20	25	-0.250957415
techniqu_extract	5	2	10	25	1.749042585
develop_method	4	3	12	16	0.517570603
given_word	4	3	12	16	0.517570603
process_reduc	4	4	16	16	-0.482429397
train_us	4	4	16	16	-0.482429397
us_simpl	4	4	16	16	-0.482429397
word_context	4	3	12	16	0.517570603
wordnet_lexic	4	2	8	16	1.517570603
emot_categor	3	1	3	9	2.286098622
represent_us	3	2	6	9	1.286098622
time_word	3	3	9	9	0.286098622
word_exampl	3	3	9	9	0.286098622
issu_issn	2	2	4	4	1.054626641
posit_fals	1	1	1	1	1.82315466
user_tweet	1	1	1	1	1.82315466
weight_approach	18	8	144	324	-1.241821661
index_document	15	8	120	225	-1.936237604
perform_classifi	13	8	104	169	-2.399181566
address_problem	12	7	84	144	-1.630653548
document_rank	10	7	70	100	-2.09359751
pattern_analysi	10	6	60	100	-1.09359751
us_vector	9	7	63	81	-2.325069491
princip_compon	8	3	24	64	1.443458528
term_number	8	8	64	64	-3.556541472
mine_task	7	7	49	49	-2.788013453

<b>Theme</b>	<b>2013 Tot</b>	<b>2013 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
perform_cluster	7	5	35	49	-0.788013453
take_advantag	7	5	35	49	-0.788013453
algorithm_stem	6	6	36	36	-2.019485434
white_space	6	5	30	36	-1.019485434
featur_us	5	4	20	25	-0.250957415
graph_node	4	3	12	16	0.517570603
weight_calcul	4	4	16	16	-0.482429397
spam_detect	2	1	2	4	2.054626641
store_databas	2	2	4	4	1.054626641
mixtur_model	20	3	60	400	4.221122302
method_evalu	17	8	136	289	-1.473293642
inform_avail	16	8	128	256	-1.704765623
precis_valu	11	4	44	121	1.137874471
suffix_strip	11	8	88	121	-2.862125529
sourc_inform	10	4	40	100	0.90640249
featur_repres	8	8	64	64	-3.556541472
classifi_featur	7	5	35	49	-0.788013453
process_word	7	4	28	49	0.211986547
algorithm_develop	6	6	36	36	-2.019485434
main_reason	6	5	30	36	-1.019485434
base_stem	5	1	5	25	2.749042585
comput_approach	5	5	25	25	-1.250957415
given_queri	5	5	25	25	-1.250957415
perform_algorithm	5	2	10	25	1.749042585
stopword_remov	5	2	10	25	1.749042585
inform_word	4	4	16	16	-0.482429397
model_word	3	3	9	9	0.286098622
optic_charact	2	2	4	4	1.054626641
scienc_applic	1	1	1	1	1.82315466
learn_object	21	2	42	441	5.452594283
automat_evalu	12	2	24	144	3.369346452
vector_featur	11	8	88	121	-2.862125529
model_compar	10	6	60	100	-1.09359751
term_select	9	5	45	81	-0.325069491
us_gram	8	4	32	64	0.443458528
user_defin	8	6	48	64	-1.556541472
base_user	7	6	42	49	-1.788013453
index_process	7	3	21	49	1.211986547

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
similar_mean	7	5	35	49	-0.788013453
gram_base	6	2	12	36	1.980514566
sourc_data	6	5	30	36	-1.019485434
text_messag	6	3	18	36	0.980514566
technolog_volum	5	4	20	25	-0.250957415
analysi_social	4	3	12	16	0.517570603
base_techniqu	4	3	12	16	0.517570603
dataset_train	4	4	16	16	-0.482429397
select_algorithm	4	3	12	16	0.517570603
token_stop	3	2	6	9	1.286098622
us_wordnet	3	3	9	9	0.286098622
valu_pair	3	2	6	9	1.286098622
base_represent	2	2	4	4	1.054626641
facebook_twitter	2	1	2	4	2.054626641
us_wikipedia	2	2	4	4	1.054626641
class_number	1	1	1	1	1.82315466
dimension_featur	16	8	128	256	-1.704765623
extract_techniqu	15	6	90	225	0.063762396
model_automat	11	10	110	121	-4.862125529
european_languag	10	5	50	100	-0.09359751
text_repres	10	7	70	100	-2.09359751
comput_network	8	3	24	64	1.443458528
method_combin	8	4	32	64	0.443458528
word_match	8	6	48	64	-1.556541472
algorithm_find	7	5	35	49	-0.788013453
data_consist	7	6	42	49	-1.788013453
featur_includ	7	4	28	49	0.211986547
form_stem	7	6	42	49	-1.788013453
token_process	7	5	35	49	-0.788013453
weight_vector	7	5	35	49	-0.788013453
consist_document	6	4	24	36	-0.019485434
sentenc_structur	6	4	24	36	-0.019485434
system_consist	6	6	36	36	-2.019485434
test_model	6	3	18	36	0.980514566
analysi_machin	5	5	25	25	-1.250957415
frequenc_weight	5	4	20	25	-0.250957415
measur_calcul	5	5	25	25	-1.250957415
workshop_comput	5	5	25	25	-1.250957415

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
text_dataset	4	3	12	16	0.517570603
us_equat	4	4	16	16	-0.482429397
collect_corpu	3	2	6	9	1.286098622
lexic_featur	3	2	6	9	1.286098622
mean_valu	3	3	9	9	0.286098622
model_extract	3	3	9	9	0.286098622
perform_analysi	3	3	9	9	0.286098622
corpu_word	2	2	4	4	1.054626641
model_system	2	2	4	4	1.054626641
us_rule	1	1	1	1	1.82315466
concept_document	16	3	48	256	3.295234377
categori_categori	15	6	90	225	0.063762396
length_document	12	7	84	144	-1.630653548
north_chapter	11	5	55	121	0.137874471
overal_perform	11	3	33	121	2.137874471
document_length	10	6	60	100	-1.09359751
cluster_accuraci	9	4	36	81	0.674930509
good_perform	8	7	56	64	-2.556541472
list_stop	8	7	56	64	-2.556541472
index_html	6	4	24	36	-0.019485434
algorithm_implement	5	5	25	25	-1.250957415
convert_text	5	5	25	25	-1.250957415
word_elimin	5	5	25	25	-1.250957415
improv_text	4	3	12	16	0.517570603
collect_tweet	3	1	3	9	2.286098622
count_word	3	3	9	9	0.286098622
extract_knowledg	3	3	9	9	0.286098622
statist_signific	3	3	9	9	0.286098622
emot_text	2	1	2	4	2.054626641
knowledg_extract	2	2	4	4	1.054626641
term_queri	2	2	4	4	1.054626641
semant_evalu	1	1	1	1	1.82315466
method_extract	12	8	96	144	-2.630653548
overal_accuraci	12	4	48	144	1.369346452
repres_term	11	8	88	121	-2.862125529
approach_automat	10	7	70	100	-2.09359751
automat_classifi	9	6	54	81	-1.325069491
method_describ	9	7	63	81	-2.325069491

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
languag_specif	7	5	35	49	-0.788013453
node_repres	7	4	28	49	0.211986547
topic_text	7	4	28	49	0.211986547
difficult_task	6	4	24	36	-0.019485434
access_inform	5	4	20	25	-0.250957415
depart_inform	5	4	20	25	-0.250957415
naïv_bayesian	5	2	10	25	1.749042585
queri_word	5	3	15	25	0.749042585
caus_effect	4	1	4	16	2.517570603
comput_base	4	4	16	16	-0.482429397
fine_grain	4	4	16	16	-0.482429397
measur_defin	4	3	12	16	0.517570603
text_written	4	4	16	16	-0.482429397
distribut_document	3	3	9	9	0.286098622
lower_case	3	2	6	9	1.286098622
recognit_system	3	2	6	9	1.286098622
semi_automat	3	2	6	9	1.286098622
consist_word	2	2	4	4	1.054626641
context_base	2	2	4	4	1.054626641
dataset_us	2	2	4	4	1.054626641
process_phase	2	2	4	4	1.054626641
us_corpu	1	1	1	1	1.82315466
word_distribut	1	1	1	1	1.82315466
term_occurr	16	4	64	256	2.295234377
method_cluster	11	6	66	121	-0.862125529
token_text	11	9	99	121	-3.862125529
compon_analysi	10	4	40	100	0.90640249
gener_term	10	8	80	100	-3.09359751
semant_structur	10	5	50	100	-0.09359751
stem_reduc	10	10	100	100	-5.09359751
term_accuraci	10	6	60	100	-1.09359751
cluster_word	9	4	36	81	0.674930509
document_given	9	9	81	81	-4.325069491
system_text	9	7	63	81	-2.325069491
text_understand	9	3	27	81	1.674930509
us_mean	9	8	72	81	-3.325069491
document_extract	8	6	48	64	-1.556541472
frequenc_calcul	8	4	32	64	0.443458528

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
document_group	6	5	30	36	-1.019485434
domain_knowledg	6	4	24	36	-0.019485434
gener_content	6	2	12	36	1.980514566
learn_data	6	4	24	36	-0.019485434
retriev_base	6	3	18	36	0.980514566
algorithm_mean	5	3	15	25	0.749042585
approach_perform	5	5	25	25	-1.250957415
model_approach	5	4	20	25	-0.250957415
network_us	5	3	15	25	0.749042585
gram_word	4	3	12	16	0.517570603
model_combin	4	4	16	16	-0.482429397
stemmer_algorithm	4	4	16	16	-0.482429397
valu_paramet	4	4	16	16	-0.482429397
valu_word	4	4	16	16	-0.482429397
accuraci_tabl	3	2	6	9	1.286098622
assign_word	3	3	9	9	0.286098622
base_measur	3	3	9	9	0.286098622
process_approach	3	3	9	9	0.286098622
us_latent	3	3	9	9	0.286098622
gener_algorithm	2	2	4	4	1.054626641
preprocess_techniqu	2	2	4	4	1.054626641
rule_rule	2	1	2	4	2.054626641
level_text	1	1	1	1	1.82315466
process_base	1	1	1	1	1.82315466
relev_queri	13	7	91	169	-1.399181566
document_test	12	8	96	144	-2.630653548
document_accord	11	8	88	121	-2.862125529
order_evalu	11	9	99	121	-3.862125529
base_learn	9	9	81	81	-4.325069491
algorithm_suffix	8	5	40	64	-0.556541472
approach_featur	8	5	40	64	-0.556541472
time_process	8	6	48	64	-1.556541472
equal_number	7	7	49	49	-2.788013453
improv_cluster	7	6	42	49	-1.788013453
classif_document	6	6	36	36	-2.019485434
gener_process	6	3	18	36	0.980514566
jordan_latent	6	6	36	36	-2.019485434
label_train	6	6	36	36	-2.019485434

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
model_describ	6	6	36	36	-2.019485434
us_topic	6	4	24	36	-0.019485434
base_machin	5	5	25	25	-1.250957415
frequenc_number	5	4	20	25	-0.250957415
process_includ	5	4	20	25	-0.250957415
word_assign	5	4	20	25	-0.250957415
automat_classif	4	4	16	16	-0.482429397
calcul_term	4	3	12	16	0.517570603
signific_improv	4	4	16	16	-0.482429397
stage_process	4	4	16	16	-0.482429397
valu_indic	4	4	16	16	-0.482429397
analysi_tool	3	3	9	9	0.286098622
gener_method	3	3	9	9	0.286098622
vector_us	3	3	9	9	0.286098622
origin_data	2	2	4	4	1.054626641
comput_secur	1	1	1	1	1.82315466
engin_depart	1	1	1	1	1.82315466
frequent_item	1	1	1	1	1.82315466
http_github	1	1	1	1	1.82315466
increas_perform	1	1	1	1	1.82315466
occurr_document	11	6	66	121	-0.862125529
similar_cluster	10	5	50	100	-0.09359751
studi_featur	9	7	63	81	-2.325069491
token_stem	8	5	40	64	-0.556541472
us_weight	8	5	40	64	-0.556541472
word_reduc	8	8	64	64	-3.556541472
base_number	7	6	42	49	-1.788013453
data_includ	7	3	21	49	1.211986547
dataset_collect	7	4	28	49	0.211986547
find_word	7	5	35	49	-0.788013453
learn_train	7	2	14	49	2.211986547
reduc_time	7	6	42	49	-1.788013453
weight_document	7	5	35	49	-0.788013453
word_collect	7	6	42	49	-1.788013453
corpu_train	6	4	24	36	-0.019485434
learn_system	6	5	30	36	-1.019485434
accuraci_classif	5	4	20	25	-0.250957415
algorithm_compar	5	4	20	25	-0.250957415

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
base_form	5	5	25	25	-1.250957415
contain_text	5	5	25	25	-1.250957415
dataset_experi	5	3	15	25	0.749042585
pair_word	5	5	25	25	-1.250957415
approach_combin	4	3	12	16	0.517570603
includ_word	4	4	16	16	-0.482429397
problem_text	4	4	16	16	-0.482429397
reduct_techniqu	4	2	8	16	1.517570603
remov_punctuat	4	4	16	16	-0.482429397
score_system	4	2	8	16	1.517570603
select_document	4	4	16	16	-0.482429397
type_featur	4	3	12	16	0.517570603
us_model	4	4	16	16	-0.482429397
mobil_phone	3	3	9	9	0.286098622
select_relev	3	3	9	9	0.286098622
system_data	3	3	9	9	0.286098622
gener_us	2	1	2	4	2.054626641
order_extract	2	2	4	4	1.054626641
perfor_manc	2	2	4	4	1.054626641
recal_recal	2	2	4	4	1.054626641
rule_extract	2	2	4	4	1.054626641
structur_text	2	2	4	4	1.054626641
word_train	2	1	2	4	2.054626641
combin_model	1	1	1	1	1.82315466
data_classif	1	1	1	1	1.82315466
time_featur	12	6	72	144	-0.630653548
gener_categori	10	3	30	100	1.90640249
model_term	10	6	60	100	-1.09359751
probabilist_latent	10	5	50	100	-0.09359751
search_word	10	5	50	100	-0.09359751
order_word	9	7	63	81	-2.325069491
predict_class	8	5	40	64	-0.556541472
base_applic	7	5	35	49	-0.788013453
bay_classif	7	5	35	49	-0.788013453
binari_classif	7	4	28	49	0.211986547
learn_inform	7	6	42	49	-1.788013453
note_comput	7	6	42	49	-1.788013453
number_class	7	6	42	49	-1.788013453

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
perform_inform	7	6	42	49	-1.788013453
techniqu_find	7	7	49	49	-2.788013453
main_step	6	4	24	36	-0.019485434
make_difficult	6	6	36	36	-2.019485434
servic_servic	6	3	18	36	0.980514566
method_classif	5	4	20	25	-0.250957415
model_latent	5	4	20	25	-0.250957415
model_process	5	5	25	25	-1.250957415
statist_measur	5	4	20	25	-0.250957415
stem_method	5	3	15	25	0.749042585
topic_gener	5	3	15	25	0.749042585
tradit_approach	5	4	20	25	-0.250957415
data_format	4	3	12	16	0.517570603
featur_term	4	4	16	16	-0.482429397
posit_class	4	2	8	16	1.517570603
score_function	4	4	16	16	-0.482429397
term_precis	4	4	16	16	-0.482429397
total_word	4	3	12	16	0.517570603
divid_number	3	3	9	9	0.286098622
present_model	3	3	9	9	0.286098622
word_group	3	3	9	9	0.286098622
approach_develop	2	1	2	4	2.054626641
compar_word	2	2	4	4	1.054626641
find_optim	2	2	4	4	1.054626641
further_improv	2	2	4	4	1.054626641
probabl_word	2	2	4	4	1.054626641
proce_ing	2	2	4	4	1.054626641
data_form	1	1	1	1	1.82315466
neg_sentiment	1	1	1	1	1.82315466
servic_orient	1	1	1	1	1.82315466
cluster_gener	10	9	90	100	-4.09359751
train_phase	10	8	80	100	-3.09359751
cluster_mean	8	5	40	64	-0.556541472
document_set	8	4	32	64	0.443458528
file_file	7	4	28	49	0.211986547
inform_sourc	7	3	21	49	1.211986547
neighbor_algorithm	7	5	35	49	-0.788013453
preprocess_document	7	6	42	49	-1.788013453

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
structur_inform	6	6	36	36	-2.019485434
us_approach	6	4	24	36	-0.019485434
dataset_evalu	5	4	20	25	-0.250957415
mine_pattern	5	3	15	25	0.749042585
model_user	5	4	20	25	-0.250957415
model_vector	5	4	20	25	-0.250957415
size_data	5	3	15	25	0.749042585
struc_ture	5	4	20	25	-0.250957415
calcul_number	4	3	12	16	0.517570603
number_charact	4	3	12	16	0.517570603
system_support	4	4	16	16	-0.482429397
us_combin	4	3	12	16	0.517570603
user_interact	4	3	12	16	0.517570603
data_represent	3	2	6	9	1.286098622
experi_evalu	3	2	6	9	1.286098622
gener_purpos	3	3	9	9	0.286098622
linguist_human	3	3	9	9	0.286098622
tech_nologi	3	2	6	9	1.286098622
word_frequent	3	3	9	9	0.286098622
automat_process	2	2	4	4	1.054626641
remov_prefix	2	1	2	4	2.054626641
select_word	2	2	4	4	1.054626641
us_naïv	2	2	4	4	1.054626641
correct_word	1	1	1	1	1.82315466
perform_poorli	1	1	1	1	1.82315466
type_type	16	1	16	256	5.295234377
retriev_perform	14	6	84	196	-0.167709585
effect_featur	12	7	84	144	-1.630653548
data_gather	11	3	33	121	2.137874471
inform_filter	10	8	80	100	-3.09359751
overcom_problem	10	6	60	100	-1.09359751
method_arab	9	5	45	81	-0.325069491
reduc_size	8	7	56	64	-2.556541472
stem_techniqu	8	5	40	64	-0.556541472
us_document	8	8	64	64	-3.556541472
import_word	7	5	35	49	-0.788013453
perform_featur	7	6	42	49	-1.788013453
approach_classifi	6	4	24	36	-0.019485434

<b>Theme</b>	<b>2013 Tot</b>	<b>2013 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
perform_document	6	4	24	36	-0.019485434
algorithm_data	5	3	15	25	0.749042585
cluster_group	5	5	25	25	-1.250957415
estim_probabl	5	3	15	25	0.749042585
given_topic	5	3	15	25	0.749042585
model_implement	5	4	20	25	-0.250957415
order_achiev	5	4	20	25	-0.250957415
vector_model	5	5	25	25	-1.250957415
inform_data	4	4	16	16	-0.482429397
total_document	4	4	16	16	-0.482429397
document_comput	3	3	9	9	0.286098622
algorithm_test	2	2	4	4	1.054626641
fuzzi_set	2	1	2	4	2.054626641
system_process	2	2	4	4	1.054626641
term_semant	2	2	4	4	1.054626641
token_part	2	2	4	4	1.054626641
train_train	2	2	4	4	1.054626641
tree_algorithm	2	2	4	4	1.054626641
detect_us	1	1	1	1	1.82315466
help_identifi	1	1	1	1	1.82315466
input_word	1	1	1	1	1.82315466
contain_number	13	9	117	169	-3.399181566
group_document	11	3	33	121	2.137874471
approach_analyz	9	8	72	81	-3.325069491
method_consid	8	7	56	64	-2.556541472
document_user	7	4	28	49	0.211986547
languag_base	7	5	35	49	-0.788013453
commun_engin	6	2	12	36	1.980514566
corpu_number	6	5	30	36	-1.019485434
perform_term	6	5	30	36	-1.019485434
collect_word	5	4	20	25	-0.250957415
detail_descript	5	4	20	25	-0.250957415
inform_us	5	3	15	25	0.749042585
tree_classifi	5	3	15	25	0.749042585
word_exist	5	4	20	25	-0.250957415
analysi_opinion	4	3	12	16	0.517570603
effect_us	4	3	12	16	0.517570603
method_measur	4	4	16	16	-0.482429397

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
paramet_valu	4	3	12	16	0.517570603
supervis_unsupervis	4	3	12	16	0.517570603
text_consid	4	3	12	16	0.517570603
averag_valu	3	3	9	9	0.286098622
bay_theorem	3	3	9	9	0.286098622
evalu_classifi	3	3	9	9	0.286098622
pattern_gener	3	1	3	9	2.286098622
perform_improv	3	3	9	9	0.286098622
preprocess_data	3	3	9	9	0.286098622
test_system	3	2	6	9	1.286098622
word_search	3	3	9	9	0.286098622
faculti_scienc	2	2	4	4	1.054626641
form_us	2	2	4	4	1.054626641
linguist_resourc	2	2	4	4	1.054626641
semant_network	2	2	4	4	1.054626641
variou_featur	2	2	4	4	1.054626641
written_text	2	2	4	4	1.054626641
catégori_word	1	1	1	1	1.82315466
context_awar	1	1	1	1	1.82315466
extract_tweet	1	1	1	1	1.82315466
order_logic	1	1	1	1	1.82315466
select_term	1	1	1	1	1.82315466
simpl_word	1	1	1	1	1.82315466
appear_frequent	8	6	48	64	-1.556541472
method_select	8	6	48	64	-1.556541472
modern_inform	8	7	56	64	-2.556541472
term_gener	8	5	40	64	-0.556541472
evalu_evalu	7	5	35	49	-0.788013453
method_improv	7	6	42	49	-1.788013453
model_defin	7	4	28	49	0.211986547
multinomi_distribut	7	4	28	49	0.211986547
size_train	7	3	21	49	1.211986547
specif_topic	7	7	49	49	-2.788013453
approach_cluster	6	6	36	36	-2.019485434
describ_detail	6	3	18	36	0.980514566
document_thu	6	5	30	36	-1.019485434
gram_model	6	3	18	36	0.980514566
train_time	6	2	12	36	1.980514566

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
convert_word	5	5	25	25	-1.250957415
divid_total	5	4	20	25	-0.250957415
improv_precis	5	5	25	25	-1.250957415
document_order	4	4	16	16	-0.482429397
gram_featur	4	1	4	16	2.517570603
main_featur	4	2	8	16	1.517570603
mine_machin	4	3	12	16	0.517570603
repr_sent	4	3	12	16	0.517570603
test_evalu	4	1	4	16	2.517570603
websit_http	4	4	16	16	-0.482429397
calcul_frequenc	3	2	6	9	1.286098622
comput_semant	3	2	6	9	1.286098622
subset_featur	3	3	9	9	0.286098622
system_arab	3	2	6	9	1.286098622
algorithm_predict	2	1	2	4	2.054626641
gener_data	2	2	4	4	1.054626641
mine_natur	2	2	4	4	1.054626641
multi_label	2	2	4	4	1.054626641
node_graph	2	2	4	4	1.054626641
word_test	2	2	4	4	1.054626641
design_model	1	1	1	1	1.82315466
further_develop	1	1	1	1	1.82315466
model_construct	1	1	1	1	1.82315466
sampl_data	1	1	1	1	1.82315466
salton_bucklei	9	8	72	81	-3.325069491
applic_develop	8	1	8	64	3.443458528
automat_document	8	6	48	64	-1.556541472
document_avail	7	6	42	49	-1.788013453
model_consid	7	6	42	49	-1.788013453
stem_step	7	3	21	49	1.211986547
arxiv_preprint	6	1	6	36	2.980514566
classifi_classif	6	6	36	36	-2.019485434
classifi_support	6	3	18	36	0.980514566
mean_document	5	5	25	25	-1.250957415
method_comput	5	5	25	25	-1.250957415
technolog_issn	5	2	10	25	1.749042585
appear_time	4	3	12	16	0.517570603
auto_matic	4	4	16	16	-0.482429397

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
captur_semant	4	4	16	16	-0.482429397
linguist_structur	4	3	12	16	0.517570603
perform_base	4	3	12	16	0.517570603
word_refer	4	4	16	16	-0.482429397
data_obtain	3	2	6	9	1.286098622
describ_system	3	3	9	9	0.286098622
direct_graph	3	3	9	9	0.286098622
help_improv	3	2	6	9	1.286098622
linear_model	3	2	6	9	1.286098622
model_provid	3	3	9	9	0.286098622
multipl_word	3	3	9	9	0.286098622
probabl_document	3	2	6	9	1.286098622
topic_interest	3	3	9	9	0.286098622
word_total	3	2	6	9	1.286098622
accuraci_obtain	2	1	2	4	2.054626641
class_classifi	2	2	4	4	1.054626641
current_state	2	2	4	4	1.054626641
experi_experi	2	2	4	4	1.054626641
mathemat_comput	2	2	4	4	1.054626641
measur_cosin	2	2	4	4	1.054626641
messag_servic	2	1	2	4	2.054626641
similar_text	2	1	2	4	2.054626641
achiev_good	1	1	1	1	1.82315466
algorithm_term	1	1	1	1	1.82315466
method_model	1	1	1	1	1.82315466
metric_evalu	1	1	1	1	1.82315466
stemmer_arab	1	1	1	1	1.82315466
system_consid	1	1	1	1	1.82315466
system_requir	1	1	1	1	1.82315466
tweet_collect	1	1	1	1	1.82315466
word_user	1	1	1	1	1.82315466
appli_cluster	12	9	108	144	-3.630653548
learn_task	12	6	72	144	-0.630653548
document_organ	11	9	99	121	-3.862125529
measur_comput	10	3	30	100	1.90640249
term_given	8	7	56	64	-2.556541472
user_find	8	5	40	64	-0.556541472
bay_model	7	2	14	49	2.211986547

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
consid_term	7	7	49	49	-2.788013453
mcgraw_hill	7	6	42	49	-1.788013453
method_document	7	6	42	49	-1.788013453
model_cluster	7	3	21	49	1.211986547
retriev_data	7	6	42	49	-1.788013453
search_inform	7	7	49	49	-2.788013453
basic_idea	6	6	36	36	-2.019485434
blog_post	6	3	18	36	0.980514566
comput_survei	6	6	36	36	-2.019485434
deriv_word	6	5	30	36	-1.019485434
main_contribut	6	3	18	36	0.980514566
estim_paramet	5	3	15	25	0.749042585
form_cluster	5	2	10	25	1.749042585
method_name	5	3	15	25	0.749042585
model_techniqu	5	5	25	25	-1.250957415
neural_inform	5	2	10	25	1.749042585
binari_classifi	4	3	12	16	0.517570603
charact_token	4	4	16	16	-0.482429397
latent_variabl	4	3	12	16	0.517570603
system_comput	4	4	16	16	-0.482429397
task_automat	4	4	16	16	-0.482429397
text_includ	4	4	16	16	-0.482429397
us_neural	4	2	8	16	1.517570603
algorithm_describ	3	3	9	9	0.286098622
algorithm_method	3	3	9	9	0.286098622
algorithm_requir	3	2	6	9	1.286098622
applic_us	3	3	9	9	0.286098622
calcul_score	3	2	6	9	1.286098622
featur_number	3	1	3	9	2.286098622
inform_base	3	2	6	9	1.286098622
method_achiev	3	3	9	9	0.286098622
studi_focus	3	2	6	9	1.286098622
comput_program	2	2	4	4	1.054626641
dataset_test	2	2	4	4	1.054626641
identifi_emot	2	1	2	4	2.054626641
replac_word	2	2	4	4	1.054626641
statist_data	2	2	4	4	1.054626641
automat_detect	1	1	1	1	1.82315466

<b>Theme</b>	<b>2013 Tot</b>	<b>2013 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
calcul_word	1	1	1	1	1.82315466
commun_system	1	1	1	1	1.82315466
develop_tool	1	1	1	1	1.82315466
featur_classif	1	1	1	1	1.82315466
graphic_model	1	1	1	1	1.82315466
process_term	1	1	1	1	1.82315466
semant_resourc	1	1	1	1	1.82315466
text_analyt	1	1	1	1	1.82315466
word_weight	1	1	1	1	1.82315466
match_match	11	4	44	121	1.137874471
valu_obtain	11	4	44	121	1.137874471
defin_term	9	8	72	81	-3.325069491
us_maximum	9	6	54	81	-1.325069491
cluster_comput	8	6	48	64	-1.556541472
space_word	8	6	48	64	-1.556541472
token_document	8	3	24	64	1.443458528
model_dataset	7	4	28	49	0.211986547
novel_approach	7	4	28	49	0.211986547
vocabulari_word	7	4	28	49	0.211986547
frequenc_measur	6	5	30	36	-1.019485434
ground_truth	6	3	18	36	0.980514566
levelRepresent	6	2	12	36	1.980514566
process_select	6	4	24	36	-0.019485434
algorithm_automat	5	3	15	25	0.749042585
index_word	5	2	10	25	1.749042585
proc_sigir	5	3	15	25	0.749042585
algorithm_achiev	4	3	12	16	0.517570603
appli_algorithm	4	3	12	16	0.517570603
averag_length	4	3	12	16	0.517570603
evalu_base	4	4	16	16	-0.482429397
form_term	4	4	16	16	-0.482429397
machin_intellig	4	4	16	16	-0.482429397
mine_base	4	4	16	16	-0.482429397
professor_comput	4	4	16	16	-0.482429397
techniqu_reduc	4	4	16	16	-0.482429397
us_tool	4	4	16	16	-0.482429397
vector_term	4	4	16	16	-0.482429397
evalu_dataset	3	3	9	9	0.286098622

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
extract_semant	3	3	9	9	0.286098622
process_machin	3	3	9	9	0.286098622
adject_noun	2	2	4	4	1.054626641
collect_process	2	1	2	4	2.054626641
gradient_descent	2	2	4	4	1.054626641
inform_structur	2	2	4	4	1.054626641
languag_world	2	2	4	4	1.054626641
learn_us	2	2	4	4	1.054626641
model_make	2	2	4	4	1.054626641
text_form	2	2	4	4	1.054626641
analysi_natur	1	1	1	1	1.82315466
complex_system	1	1	1	1	1.82315466
levenshtein_distanc	1	1	1	1	1.82315466
million_peopl	1	1	1	1	1.82315466
model_structur	1	1	1	1	1.82315466
remain_word	1	1	1	1	1.82315466
search_data	9	4	36	81	0.674930509
approach_solv	8	2	16	64	2.443458528
document_convert	8	6	48	64	-1.556541472
extern_knowledg	8	5	40	64	-0.556541472
appli_document	7	5	35	49	-0.788013453
assign_categori	7	6	42	49	-1.788013453
distribut_data	7	3	21	49	1.211986547
network_commun	7	2	14	49	2.211986547
tree_base	7	3	21	49	1.211986547
larger_number	6	5	30	36	-1.019485434
novel_method	6	5	30	36	-1.019485434
preprint_arxiv	6	1	6	36	2.980514566
represent_vector	6	6	36	36	-2.019485434
us_keyword	6	6	36	36	-2.019485434
data_classifi	5	4	20	25	-0.250957415
distribut_term	5	4	20	25	-0.250957415
group_base	5	4	20	25	-0.250957415
relev_user	5	2	10	25	1.749042585
summar_task	5	2	10	25	1.749042585
type_word	5	3	15	25	0.749042585
vector_weight	5	5	25	25	-1.250957415
weight_weight	5	4	20	25	-0.250957415

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
approach_method	4	2	8	16	1.517570603
column_repres	4	2	8	16	1.517570603
dept_comput	4	4	16	16	-0.482429397
keyword_search	4	4	16	16	-0.482429397
measur_word	4	4	16	16	-0.482429397
model_analysi	4	2	8	16	1.517570603
perform_comparison	4	4	16	16	-0.482429397
user_input	4	3	12	16	0.517570603
approach_gener	3	3	9	9	0.286098622
base_keyword	3	3	9	9	0.286098622
base_multi	3	3	9	9	0.286098622
base_score	3	2	6	9	1.286098622
base_valu	3	2	6	9	1.286098622
data_size	3	2	6	9	1.286098622
data_social	3	2	6	9	1.286098622
perform_variou	3	3	9	9	0.286098622
reduc_comput	3	3	9	9	0.286098622
studi_us	3	3	9	9	0.286098622
us_measur	3	2	6	9	1.286098622
word_input	3	3	9	9	0.286098622
workshop_text	3	2	6	9	1.286098622
accuraci_score	2	2	4	4	1.054626641
approach_identifi	2	2	4	4	1.054626641
base_queri	2	2	4	4	1.054626641
determin_word	2	2	4	4	1.054626641
maximum_valu	2	2	4	4	1.054626641
model_creat	2	2	4	4	1.054626641
take_time	2	2	4	4	1.054626641
us_number	2	2	4	4	1.054626641
user_us	2	2	4	4	1.054626641
averag_time	1	1	1	1	1.82315466
classifi_predict	1	1	1	1	1.82315466
knowledg_inform	1	1	1	1	1.82315466
perform_stem	1	1	1	1	1.82315466
valu_given	1	1	1	1	1.82315466
word_replac	1	1	1	1	1.82315466
document_appear	9	5	45	81	-0.325069491
kullback_leibler	8	4	32	64	0.443458528

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
number_distinct	8	6	48	64	-1.556541472
learn_autom	7	7	49	49	-2.788013453
requir_number	7	4	28	49	0.211986547
becom_popular	6	6	36	36	-2.019485434
process_call	6	5	30	36	-1.019485434
similar_featur	6	4	24	36	-0.019485434
singl_term	6	6	36	36	-2.019485434
term_calcul	6	6	36	36	-2.019485434
term_topic	6	3	18	36	0.980514566
type_document	6	5	30	36	-1.019485434
appli_mathemat	5	4	20	25	-0.250957415
creat_word	5	5	25	25	-1.250957415
decreas_number	5	4	20	25	-0.250957415
master_degre	5	5	25	25	-1.250957415
test_train	5	5	25	25	-1.250957415
text_evalu	5	5	25	25	-1.250957415
cosin_angl	4	4	16	16	-0.482429397
evalu_cluster	4	2	8	16	1.517570603
evalu_lrec	4	4	16	16	-0.482429397
given_user	4	2	8	16	1.517570603
includ_step	4	4	16	16	-0.482429397
likelihood_estim	4	3	12	16	0.517570603
mine_icdm	4	2	8	16	1.517570603
model_experi	4	2	8	16	1.517570603
optim_number	4	3	12	16	0.517570603
process_order	4	4	16	16	-0.482429397
queri_queri	4	3	12	16	0.517570603
recent_studi	4	4	16	16	-0.482429397
similar_concept	4	3	12	16	0.517570603
strip_program	4	4	16	16	-0.482429397
classifi_emot	3	1	3	9	2.286098622
consid_word	3	3	9	9	0.286098622
inform_featur	3	3	9	9	0.286098622
measur_combin	3	2	6	9	1.286098622
model_number	3	1	3	9	2.286098622
refer_word	3	3	9	9	0.286098622
techniqu_stem	3	2	6	9	1.286098622
word_letter	3	1	3	9	2.286098622

<b>Theme</b>	<b>2013 Tot</b>	<b>2013 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
approach_present	2	2	4	4	1.054626641
integr_data	2	2	4	4	1.054626641
method_data	2	2	4	4	1.054626641
model_present	2	2	4	4	1.054626641
multi_dimension	2	1	2	4	2.054626641
select_select	2	2	4	4	1.054626641
system_abl	2	1	2	4	2.054626641
text_exampl	2	2	4	4	1.054626641
base_function	1	1	1	1	1.82315466
develop_base	1	1	1	1	1.82315466
emot_analysi	1	1	1	1	1.82315466
mine_introduct	1	1	1	1	1.82315466
morpholog_syntact	1	1	1	1	1.82315466
score_evalu	1	1	1	1	1.82315466
servic_name	10	1	10	100	3.90640249
precis_rate	9	5	45	81	-0.325069491
order_compar	8	6	48	64	-1.556541472
similar_function	8	7	56	64	-2.556541472
step_algorithm	7	4	28	49	0.211986547
neg_emot	6	3	18	36	0.980514566
particular_categori	6	5	30	36	-1.019485434
advanc_neural	5	2	10	25	1.749042585
cluster_form	5	4	20	25	-0.250957415
html_http	5	2	10	25	1.749042585
particular_document	5	5	25	25	-1.250957415
reduc_dimens	5	4	20	25	-0.250957415
stem_approach	5	2	10	25	1.749042585
twitter_social	5	2	10	25	1.749042585
accuraci_text	4	4	16	16	-0.482429397
learn_theori	4	2	8	16	1.517570603
select_appropri	4	4	16	16	-0.482429397
task_document	4	3	12	16	0.517570603
term_index	4	3	12	16	0.517570603
text_model	4	3	12	16	0.517570603
time_frame	4	3	12	16	0.517570603
analysi_determin	3	3	9	9	0.286098622
classifi_class	3	3	9	9	0.286098622
creativ_common	3	2	6	9	1.286098622

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
lower_valu	3	3	9	9	0.286098622
match_algorithm	3	3	9	9	0.286098622
problem_data	3	1	3	9	2.286098622
techniqu_term	3	3	9	9	0.286098622
word_algorithm	3	2	6	9	1.286098622
class_cluster	2	2	4	4	1.054626641
evalu_topic	2	2	4	4	1.054626641
process_describ	2	2	4	4	1.054626641
system_inform	2	2	4	4	1.054626641
tion_retriev	2	2	4	4	1.054626641
total_score	2	1	2	4	2.054626641
user_select	2	1	2	4	2.054626641
word_defin	2	2	4	4	1.054626641
word_find	2	2	4	4	1.054626641
collect_us	1	1	1	1	1.82315466
data_perform	1	1	1	1	1.82315466
dice_similar	1	1	1	1	1.82315466
formal_defin	1	1	1	1	1.82315466
respons_time	1	1	1	1	1.82315466
techniqu_order	1	1	1	1	1.82315466
distribut_similar	11	1	11	121	4.137874471
probabl_term	9	6	54	81	-1.325069491
document_assign	8	7	56	64	-2.556541472
leibler_diverg	7	4	28	49	0.211986547
bucklei_term	6	6	36	36	-2.019485434
categor_comput	5	5	25	25	-1.250957415
collect_dataset	5	5	25	25	-1.250957415
introduct_modern	5	5	25	25	-1.250957415
keyword_arab	5	4	20	25	-0.250957415
search_us	5	4	20	25	-0.250957415
size_document	5	4	20	25	-0.250957415
system_page	5	2	10	25	1.749042585
time_document	5	5	25	25	-1.250957415
charact_number	4	4	16	16	-0.482429397
document_select	4	4	16	16	-0.482429397
effect_method	4	4	16	16	-0.482429397
languag_complex	4	4	16	16	-0.482429397
method_take	4	4	16	16	-0.482429397

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
signific_amount	4	3	12	16	0.517570603
analysi_classif	3	3	9	9	0.286098622
appli_comput	3	3	9	9	0.286098622
document_obtain	3	2	6	9	1.286098622
main_focu	3	3	9	9	0.286098622
model_outperform	3	3	9	9	0.286098622
probabl_class	3	2	6	9	1.286098622
represent_method	3	2	6	9	1.286098622
term_mean	3	2	6	9	1.286098622
word_singl	3	3	9	9	0.286098622
algorithm_present	2	2	4	4	1.054626641
approach_comput	2	2	4	4	1.054626641
corpu_includ	2	2	4	4	1.054626641
data_analyz	2	2	4	4	1.054626641
data_experi	2	2	4	4	1.054626641
depend_word	2	1	2	4	2.054626641
describ_method	2	2	4	4	1.054626641
distribu_tion	2	2	4	4	1.054626641
frequenc_featur	2	2	4	4	1.054626641
good_accuraci	2	2	4	4	1.054626641
human_behavior	2	2	4	4	1.054626641
lucen_apach	2	2	4	4	1.054626641
main_advantag	2	2	4	4	1.054626641
saudi_arabia	2	2	4	4	1.054626641
tag_tag	2	2	4	4	1.054626641
us_automat	2	2	4	4	1.054626641
word_inform	2	2	4	4	1.054626641
analysi_identifi	1	1	1	1	1.82315466
common_attribut	1	1	1	1	1.82315466
exampl_tweet	1	1	1	1	1.82315466
model_find	1	1	1	1	1.82315466
normal_term	1	1	1	1	1.82315466
polar_text	1	1	1	1	1.82315466
preci_sion	1	1	1	1	1.82315466
system_includ	1	1	1	1	1.82315466
text_therefor	1	1	1	1	1.82315466
theori_applic	1	1	1	1	1.82315466
us_linguist	1	1	1	1	1.82315466

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
word_correspond	1	1	1	1	1.82315466
neg_train	8	3	24	64	1.443458528
cluster_hierarch	6	1	6	36	2.980514566
document_reduc	6	5	30	36	-1.019485434
index_databas	6	1	6	36	2.980514566
stage_text	6	5	30	36	-1.019485434
class_repres	5	3	15	25	0.749042585
cluster_evalu	5	4	20	25	-0.250957415
document_includ	5	4	20	25	-0.250957415
experiment_studi	5	3	15	25	0.749042585
identifi_topic	5	4	20	25	-0.250957415
social_interact	5	2	10	25	1.749042585
user_label	5	1	5	25	2.749042585
vector_similar	5	4	20	25	-0.250957415
word_normal	5	5	25	25	-1.250957415
descend_order	4	4	16	16	-0.482429397
form_verb	4	4	16	16	-0.482429397
semant_represent	4	3	12	16	0.517570603
stem_gener	4	4	16	16	-0.482429397
stem_porter	4	4	16	16	-0.482429397
term_contain	4	4	16	16	-0.482429397
text_obtain	4	4	16	16	-0.482429397
us_languag	4	3	12	16	0.517570603
us_queri	4	2	8	16	1.517570603
document_content	3	3	9	9	0.286098622
document_increas	3	2	6	9	1.286098622
evalu_qualiti	3	3	9	9	0.286098622
filter_us	3	3	9	9	0.286098622
huge_number	3	3	9	9	0.286098622
match_user	3	3	9	9	0.286098622
remov_letter	3	3	9	9	0.286098622
step_preprocess	3	3	9	9	0.286098622
weight_score	3	2	6	9	1.286098622
word_vocabulari	3	2	6	9	1.286098622
avail_abl	2	1	2	4	2.054626641
document_distribut	2	1	2	4	2.054626641
extract_task	2	2	4	4	1.054626641
imag_analysi	2	2	4	4	1.054626641

<b>Theme</b>	<b>2013 Tot</b>	<b>2013 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
languag_make	2	2	4	4	1.054626641
obtain_cluster	2	2	4	4	1.054626641
process_identifi	2	2	4	4	1.054626641
significantli_reduc	2	2	4	4	1.054626641
step_extract	2	2	4	4	1.054626641
step_identifi	2	2	4	4	1.054626641
system_term	2	2	4	4	1.054626641
us_graph	2	2	4	4	1.054626641
us_knowledg	2	2	4	4	1.054626641
approach_machin	1	1	1	1	1.82315466
independ_assumpt	1	1	1	1	1.82315466
method_mean	1	1	1	1	1.82315466
number_sampl	1	1	1	1	1.82315466
origin_dataset	1	1	1	1	1.82315466
problem_automat	1	1	1	1	1.82315466
twitter_stream	1	1	1	1	1.82315466
user_system	1	1	1	1	1.82315466
data_distribut	8	4	32	64	0.443458528
document_call	6	4	24	36	-0.019485434
avail_document	5	4	20	25	-0.250957415
calcul_distanc	5	3	15	25	0.749042585
input_train	5	3	15	25	0.749042585
base_emot	4	1	4	16	2.517570603
develop_evalu	4	1	4	16	2.517570603
featur_evalu	4	2	8	16	1.517570603
linear_function	4	4	16	16	-0.482429397
particular_domain	4	1	4	16	2.517570603
randomli_chosen	4	4	16	16	-0.482429397
valu_measur	4	4	16	16	-0.482429397
algorithm_mine	3	3	9	9	0.286098622
analyz_tweet	3	1	3	9	2.286098622
imag_video	3	2	6	9	1.286098622
measur_find	3	3	9	9	0.286098622
number_retriev	3	3	9	9	0.286098622
process_automat	3	3	9	9	0.286098622
process_take	3	3	9	9	0.286098622
requir_user	3	3	9	9	0.286098622
rule_combin	3	2	6	9	1.286098622

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
signific_word	3	2	6	9	1.286098622
appli_stem	2	1	2	4	2.054626641
applic_servic	2	2	4	4	1.054626641
base_structur	2	2	4	4	1.054626641
calcu_late	2	1	2	4	2.054626641
correspond_sentenc	2	2	4	4	1.054626641
experi_text	2	2	4	4	1.054626641
featur_calcul	2	2	4	4	1.054626641
interact_user	2	2	4	4	1.054626641
map_word	2	2	4	4	1.054626641
order_understand	2	2	4	4	1.054626641
search_retriev	2	2	4	4	1.054626641
token_remov	2	2	4	4	1.054626641
us_gener	2	1	2	4	2.054626641
vector_train	2	2	4	4	1.054626641
weight_obtain	2	1	2	4	2.054626641
class_posit	1	1	1	1	1.82315466
commun_comput	1	1	1	1	1.82315466
consist_phase	1	1	1	1	1.82315466
correctli_identifi	1	1	1	1	1.82315466
document_form	1	1	1	1	1.82315466
experi_dataset	1	1	1	1	1.82315466
knowledg_resourc	1	1	1	1	1.82315466
languag_social	1	1	1	1	1.82315466
system_measur	1	1	1	1	1.82315466
text_method	1	1	1	1	1.82315466
word_chang	1	1	1	1	1.82315466
engin_issu	8	4	32	64	0.443458528
identifi_us	7	6	42	49	-1.788013453
determin_number	6	6	36	36	-2.019485434
normal_word	6	6	36	36	-2.019485434
text_identifi	6	4	24	36	-0.019485434
world_congress	6	2	12	36	1.980514566
comparison_method	5	3	15	25	0.749042585
document_improv	5	5	25	25	-1.250957415
precis_calcul	5	5	25	25	-1.250957415
stem_document	5	5	25	25	-1.250957415
centroid_cluster	4	2	8	16	1.517570603

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
data_approach	4	3	12	16	0.517570603
indic_word	3	2	6	9	1.286098622
interest_user	3	2	6	9	1.286098622
punctuat_remov	3	3	9	9	0.286098622
set_featur	3	3	9	9	0.286098622
twitter_facebook	3	2	6	9	1.286098622
variou_techniqu	3	3	9	9	0.286098622
word_ad	3	2	6	9	1.286098622
accu_raci	2	2	4	4	1.054626641
algorithm_accuraci	2	2	4	4	1.054626641
algorithm_consist	2	2	4	4	1.054626641
algorithm_naiv	2	2	4	4	1.054626641
collect_collect	2	2	4	4	1.054626641
compar_us	2	2	4	4	1.054626641
comparison_document	2	2	4	4	1.054626641
comparison_precis	2	2	4	4	1.054626641
describ_process	2	2	4	4	1.054626641
develop_develop	2	1	2	4	2.054626641
equal_length	2	2	4	4	1.054626641
featur_perform	2	2	4	4	1.054626641
frequenc_corpu	2	1	2	4	2.054626641
http_lucen	2	2	4	4	1.054626641
keyword_queri	2	2	4	4	1.054626641
measur_estim	2	1	2	4	2.054626641
model_take	2	2	4	4	1.054626641
obtain_word	2	2	4	4	1.054626641
probabilist_classifi	2	2	4	4	1.054626641
process_activ	2	2	4	4	1.054626641
score_comput	2	2	4	4	1.054626641
step_select	2	2	4	4	1.054626641
system_learn	2	2	4	4	1.054626641
term_relev	2	2	4	4	1.054626641
word_structur	2	2	4	4	1.054626641
word_type	2	2	4	4	1.054626641
algorithm_classif	1	1	1	1	1.82315466
base_mean	1	1	1	1	1.82315466
clean_data	1	1	1	1	1.82315466
document_creat	1	1	1	1	1.82315466

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
document_remov	1	1	1	1	1.82315466
extract_name	1	1	1	1	1.82315466
func_tion	1	1	1	1	1.82315466
issn_issn	1	1	1	1	1.82315466
matrix_term	1	1	1	1	1.82315466
meaning_inform	1	1	1	1	1.82315466
method_detect	1	1	1	1	1.82315466
output_process	1	1	1	1	1.82315466
system_avail	1	1	1	1	1.82315466
system_detect	1	1	1	1	1.82315466
text_sourc	1	1	1	1	1.82315466
time_base	1	1	1	1	1.82315466
remov_step	7	3	21	49	1.211986547
parent_node	6	3	18	36	0.980514566
perform_obtain	6	3	18	36	0.980514566
word_lead	6	2	12	36	1.980514566
appear_text	5	5	25	25	-1.250957415
cluster_repres	5	3	15	25	0.749042585
inform_servic	5	1	5	25	2.749042585
predefin_class	5	3	15	25	0.749042585
applic_inform	4	4	16	16	-0.482429397
becom_increasingli	4	4	16	16	-0.482429397
classif_data	4	2	8	16	1.517570603
inform_social	4	1	4	16	2.517570603
lower_number	4	4	16	16	-0.482429397
techniqu_featur	4	2	8	16	1.517570603
affix_word	3	3	9	9	0.286098622
classif_arab	3	3	9	9	0.286098622
dataset_avail	3	2	6	9	1.286098622
dataset_creat	3	3	9	9	0.286098622
featur_semant	3	2	6	9	1.286098622
function_similar	3	3	9	9	0.286098622
perform_step	3	3	9	9	0.286098622
repres_singl	3	3	9	9	0.286098622
step_gener	3	3	9	9	0.286098622
time_number	3	3	9	9	0.286098622
token_us	3	2	6	9	1.286098622
vector_number	3	3	9	9	0.286098622

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
approach_pattern	2	2	4	4	1.054626641
contain_topic	2	2	4	4	1.054626641
content_type	2	1	2	4	2.054626641
degre_similar	2	1	2	4	2.054626641
form_inform	2	2	4	4	1.054626641
improv_us	2	2	4	4	1.054626641
inform_form	2	2	4	4	1.054626641
interest_pattern	2	2	4	4	1.054626641
model_produc	2	2	4	4	1.054626641
present_text	2	2	4	4	1.054626641
score_precis	2	2	4	4	1.054626641
stem_exampl	2	2	4	4	1.054626641
text_appli	2	2	4	4	1.054626641
valu_chosen	2	1	2	4	2.054626641
automat_emot	1	1	1	1	1.82315466
base_perform	1	1	1	1	1.82315466
cluster_topic	1	1	1	1	1.82315466
contain_specif	1	1	1	1	1.82315466
data_describ	1	1	1	1	1.82315466
data_estim	1	1	1	1	1.82315466
data_user	1	1	1	1	1.82315466
electron_commun	1	1	1	1	1.82315466
exist_techniqu	1	1	1	1	1.82315466
frequenc_text	1	1	1	1	1.82315466
languag_stem	1	1	1	1	1.82315466
method_topic	1	1	1	1	1.82315466
model_increas	1	1	1	1	1.82315466
object_base	1	1	1	1	1.82315466
produc_cluster	1	1	1	1	1.82315466
rela_tionship	1	1	1	1	1.82315466
signific_number	1	1	1	1	1.82315466
similar_semant	1	1	1	1	1.82315466
system_creat	1	1	1	1	1.82315466
time_accuraci	1	1	1	1	1.82315466
topic_us	1	1	1	1	1.82315466
train_word	1	1	1	1	1.82315466
word_valu	1	1	1	1	1.82315466
semant_concept	8	1	8	64	3.443458528

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
languag_form	6	2	12	36	1.980514566
stemmer_compar	6	2	12	36	1.980514566
distribut_class	5	2	10	25	1.749042585
binari_valu	4	4	16	16	-0.482429397
consid_number	4	3	12	16	0.517570603
document_therefor	4	4	16	16	-0.482429397
gener_train	4	1	4	16	2.517570603
higher_weight	4	3	12	16	0.517570603
method_present	4	2	8	16	1.517570603
word_preposit	4	2	8	16	1.517570603
approach_select	3	3	9	9	0.286098622
assign_cluster	3	3	9	9	0.286098622
cluster_compar	3	3	9	9	0.286098622
form_form	3	3	9	9	0.286098622
grow_rapidli	3	3	9	9	0.286098622
matrix_contain	3	2	6	9	1.286098622
method_semant	3	2	6	9	1.286098622
term_identifi	3	1	3	9	2.286098622
text_present	3	2	6	9	1.286098622
topic_similar	3	1	3	9	2.286098622
vector_input	3	3	9	9	0.286098622
analysi_comput	2	2	4	4	1.054626641
analysi_problem	2	1	2	4	2.054626641
approach_compar	2	2	4	4	1.054626641
emerg_technolog	2	2	4	4	1.054626641
exist_algorithm	2	2	4	4	1.054626641
graph_model	2	2	4	4	1.054626641
luhn_automat	2	2	4	4	1.054626641
method_construct	2	2	4	4	1.054626641
order_measur	2	2	4	4	1.054626641
perform_fold	2	2	4	4	1.054626641
remov_nois	2	2	4	4	1.054626641
similar_approach	2	2	4	4	1.054626641
system_refer	2	2	4	4	1.054626641
tool_provid	2	1	2	4	2.054626641
transact_pattern	2	2	4	4	1.054626641
analysi_knowledg	1	1	1	1	1.82315466
base_appli	1	1	1	1	1.82315466

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
base_rank	1	1	1	1	1.82315466
classifi_term	1	1	1	1	1.82315466
crucial_role	1	1	1	1	1.82315466
featur_learn	1	1	1	1	1.82315466
field_data	1	1	1	1	1.82315466
function_defin	1	1	1	1	1.82315466
gener_architectur	1	1	1	1	1.82315466
good_featur	1	1	1	1	1.82315466
lemmat_word	1	1	1	1	1.82315466
mathemat_scienc	1	1	1	1	1.82315466
media_content	1	1	1	1	1.82315466
model_machin	1	1	1	1	1.82315466
morpho_syntact	1	1	1	1	1.82315466
number_attribut	1	1	1	1	1.82315466
number_concept	1	1	1	1	1.82315466
perform_dataset	1	1	1	1	1.82315466
similar_group	1	1	1	1	1.82315466
simpl_probabilist	1	1	1	1	1.82315466
solv_issu	1	1	1	1	1.82315466
split_text	1	1	1	1	1.82315466
step_find	1	1	1	1	1.82315466
stochast_gradient	1	1	1	1	1.82315466
text_step	1	1	1	1	1.82315466
third_type	1	1	1	1	1.82315466
type_system	1	1	1	1	1.82315466
cluster_correspond	6	4	24	36	-0.019485434
compar_origin	6	4	24	36	-0.019485434
sequenc_model	6	1	6	36	2.980514566
rule_defin	5	3	15	25	0.749042585
correspond_featur	4	3	12	16	0.517570603
process_search	4	4	16	16	-0.482429397
therefor_develop	4	4	16	16	-0.482429397
word_indic	4	3	12	16	0.517570603
categori_us	3	3	9	9	0.286098622
classif_new	3	1	3	9	2.286098622
correspond_topic	3	2	6	9	1.286098622
dictionari_dictionari	3	3	9	9	0.286098622
document_normal	3	3	9	9	0.286098622

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
engin_retriev	3	3	9	9	0.286098622
inquiri_word	3	3	9	9	0.286098622
remov_arab	3	3	9	9	0.286098622
requir_addit	3	3	9	9	0.286098622
step_token	3	2	6	9	1.286098622
us_normal	3	3	9	9	0.286098622
alphabet_charact	2	2	4	4	1.054626641
base_implement	2	2	4	4	1.054626641
base_pattern	2	1	2	4	2.054626641
base_probabl	2	2	4	4	1.054626641
case_text	2	2	4	4	1.054626641
charact_punctuat	2	2	4	4	1.054626641
engin_inform	2	2	4	4	1.054626641
extract_phrase	2	2	4	4	1.054626641
initi_step	2	2	4	4	1.054626641
measur_qualiti	2	2	4	4	1.054626641
method_effect	2	2	4	4	1.054626641
model_calcul	2	2	4	4	1.054626641
particular_case	2	1	2	4	2.054626641
rapid_develop	2	2	4	4	1.054626641
string_number	2	1	2	4	2.054626641
system_make	2	2	4	4	1.054626641
toulous_franc	2	2	4	4	1.054626641
us_resourc	2	2	4	4	1.054626641
valu_model	2	2	4	4	1.054626641
vector_length	2	2	4	4	1.054626641
word_porter	2	2	4	4	1.054626641
approach_found	1	1	1	1	1.82315466
call_term	1	1	1	1	1.82315466
classifi_decis	1	1	1	1	1.82315466
content_tweet	1	1	1	1	1.82315466
database_commun	1	1	1	1	1.82315466
document_specif	1	1	1	1	1.82315466
human_social	1	1	1	1	1.82315466
inform_analysi	1	1	1	1	1.82315466
linguist_volum	1	1	1	1	1.82315466
method_case	1	1	1	1	1.82315466
model_thu	1	1	1	1	1.82315466

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
page_contain	1	1	1	1	1.82315466
partial_support	1	1	1	1	1.82315466
plai_crucial	1	1	1	1	1.82315466
problem_includ	1	1	1	1	1.82315466
scienc_softwar	1	1	1	1	1.82315466
step_approach	1	1	1	1	1.82315466
step_featur	1	1	1	1	1.82315466
studi_comput	1	1	1	1	1.82315466
system_capabl	1	1	1	1	1.82315466
system_project	1	1	1	1	1.82315466
techniqu_help	1	1	1	1	1.82315466
techniqu_perform	1	1	1	1	1.82315466
text_twitter	1	1	1	1	1.82315466
time_exampl	1	1	1	1	1.82315466
tool_gener	1	1	1	1	1.82315466
us_preprocess	1	1	1	1	1.82315466
vector_contain	1	1	1	1	1.82315466
document_phrase	5	1	5	25	2.749042585
text_vector	5	4	20	25	-0.250957415
algorithm_given	4	3	12	16	0.517570603
method_word	4	4	16	16	-0.482429397
problem_word	4	3	12	16	0.517570603
spend_time	4	3	12	16	0.517570603
state_model	4	1	4	16	2.517570603
combin_term	3	3	9	9	0.286098622
effici_search	3	3	9	9	0.286098622
enorm_amount	3	2	6	9	1.286098622
further_increas	3	3	9	9	0.286098622
model_addit	3	3	9	9	0.286098622
model_requir	3	3	9	9	0.286098622
select_topic	3	3	9	9	0.286098622
term_search	3	1	3	9	2.286098622
test_compar	3	3	9	9	0.286098622
addit_word	2	2	4	4	1.054626641
analysi_applic	2	2	4	4	1.054626641
approach_reli	2	1	2	4	2.054626641
databas_search	2	1	2	4	2.054626641
elimin_stem	2	2	4	4	1.054626641

<b>Theme</b>	<b>2013 Tot</b>	<b>2013 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
eval_uation	2	2	4	4	1.054626641
identifi_similar	2	2	4	4	1.054626641
knowledg_document	2	2	4	4	1.054626641
network_machin	2	2	4	4	1.054626641
split_data	2	1	2	4	2.054626641
steinbach_karypi	2	1	2	4	2.054626641
store_file	2	1	2	4	2.054626641
topic_exampl	2	2	4	4	1.054626641
user_data	2	2	4	4	1.054626641
valu_posit	2	2	4	4	1.054626641
accord_word	1	1	1	1	1.82315466
algorithm_determin	1	1	1	1	1.82315466
anger_fear	1	1	1	1	1.82315466
approach_consist	1	1	1	1	1.82315466
approach_outperform	1	1	1	1	1.82315466
candid_gener	1	1	1	1	1.82315466
choos_number	1	1	1	1	1.82315466
collect_period	1	1	1	1	1.82315466
compar_number	1	1	1	1	1.82315466
construct_graph	1	1	1	1	1.82315466
count_time	1	1	1	1	1.82315466
descrip_tion	1	1	1	1	1.82315466
design_algorithm	1	1	1	1	1.82315466
document_view	1	1	1	1	1.82315466
extract_textual	1	1	1	1	1.82315466
featur_preprocess	1	1	1	1	1.82315466
filter_step	1	1	1	1	1.82315466
help_classifi	1	1	1	1	1.82315466
independ_given	1	1	1	1	1.82315466
knowledg_sourc	1	1	1	1	1.82315466
label_class	1	1	1	1	1.82315466
method_produc	1	1	1	1	1.82315466
overal_score	1	1	1	1	1.82315466
process_human	1	1	1	1	1.82315466
step_construct	1	1	1	1	1.82315466
strength_weak	1	1	1	1	1.82315466
test_purpos	1	1	1	1	1.82315466
us_extern	1	1	1	1	1.82315466

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
word_divid	1	1	1	1	1.82315466
word_system	1	1	1	1	1.82315466
topic_categor	5	4	20	25	-0.250957415
consid_time	3	3	9	9	0.286098622
data_partit	3	2	6	9	1.286098622
exist_document	3	3	9	9	0.286098622
featur_name	3	2	6	9	1.286098622
iter_step	3	1	3	9	2.286098622
label_base	3	3	9	9	0.286098622
media_platform	3	2	6	9	1.286098622
method_keyword	3	3	9	9	0.286098622
base_frequent	2	2	4	4	1.054626641
cate_gori	2	1	2	4	2.054626641
comparison_baselin	2	2	4	4	1.054626641
comput_perform	2	2	4	4	1.054626641
consid_case	2	2	4	4	1.054626641
dataset_method	2	2	4	4	1.054626641
distribut_represent	2	1	2	4	2.054626641
introduc_concept	2	2	4	4	1.054626641
level_document	2	2	4	4	1.054626641
metric_text	2	2	4	4	1.054626641
queri_gener	2	2	4	4	1.054626641
support_grant	2	2	4	4	1.054626641
user_perform	2	2	4	4	1.054626641
variou_approach	2	2	4	4	1.054626641
accuraci_number	1	1	1	1	1.82315466
affect_user	1	1	1	1	1.82315466
analysi_emot	1	1	1	1	1.82315466
analysi_featur	1	1	1	1	1.82315466
analysi_order	1	1	1	1	1.82315466
averag_sentenc	1	1	1	1	1.82315466
categori_tweet	1	1	1	1	1.82315466
contain_singl	1	1	1	1	1.82315466
discoveri_databas	1	1	1	1	1.82315466
distanc_calcul	1	1	1	1	1.82315466
experi_featur	1	1	1	1	1.82315466
graph_structur	1	1	1	1	1.82315466
increas_precis	1	1	1	1	1.82315466

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
keyword_cluster	1	1	1	1	1.82315466
level_system	1	1	1	1	1.82315466
main_sourc	1	1	1	1	1.82315466
neg_affect	1	1	1	1	1.82315466
network_data	1	1	1	1	1.82315466
order_base	1	1	1	1	1.82315466
process_construct	1	1	1	1	1.82315466
sampl_test	1	1	1	1	1.82315466
step_build	1	1	1	1	1.82315466
us_exampl	1	1	1	1	1.82315466
user_give	1	1	1	1	1.82315466
vector_calcul	1	1	1	1	1.82315466
word_retriev	1	1	1	1	1.82315466
written_java	1	1	1	1	1.82315466
ad_word	3	3	9	9	0.286098622
extern_sourc	3	3	9	9	0.286098622
featur_posit	3	3	9	9	0.286098622
overal_system	3	3	9	9	0.286098622
stem_languag	3	3	9	9	0.286098622
algorithm_consid	2	2	4	4	1.054626641
automat_creation	2	2	4	4	1.054626641
cluster_unsupervis	2	2	4	4	1.054626641
dataset_compar	2	2	4	4	1.054626641
describ_algorithm	2	2	4	4	1.054626641
effici_cluster	2	1	2	4	2.054626641
full_word	2	1	2	4	2.054626641
model_human	2	2	4	4	1.054626641
punctuat_stop	2	2	4	4	1.054626641
rang_valu	2	2	4	4	1.054626641
remov_frequent	2	2	4	4	1.054626641
sampl_word	2	2	4	4	1.054626641
time_text	2	2	4	4	1.054626641
word_affect	2	2	4	4	1.054626641
algorithm_obtain	1	1	1	1	1.82315466
approach_provid	1	1	1	1	1.82315466
calcul_step	1	1	1	1	1.82315466
difficult_languag	1	1	1	1	1.82315466
document_arab	1	1	1	1	1.82315466

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
equat_calcul	1	1	1	1	1.82315466
extract_variou	1	1	1	1	1.82315466
famili_member	1	1	1	1	1.82315466
index_base	1	1	1	1	1.82315466
indic_cluster	1	1	1	1	1.82315466
inform_becom	1	1	1	1	1.82315466
manual_extract	1	1	1	1	1.82315466
metric_base	1	1	1	1	1.82315466
miller_wordnet	1	1	1	1	1.82315466
perform_supervis	1	1	1	1	1.82315466
process_design	1	1	1	1	1.82315466
process_part	1	1	1	1	1.82315466
score_method	1	1	1	1	1.82315466
stream_text	1	1	1	1	1.82315466
system_conclus	1	1	1	1	1.82315466
test_split	1	1	1	1	1.82315466
topic_cover	1	1	1	1	1.82315466
uniqu_featur	1	1	1	1	1.82315466
user_send	1	1	1	1	1.82315466
predict_categor	4	4	16	16	-0.482429397
annual_symposium	3	3	9	9	0.286098622
model_respect	3	1	3	9	2.286098622
analysi_time	2	2	4	4	1.054626641
approach_deal	2	2	4	4	1.054626641
base_natur	2	2	4	4	1.054626641
collect_user	2	1	2	4	2.054626641
creation_literatur	2	2	4	4	1.054626641
data_group	2	2	4	4	1.054626641
document_pars	2	2	4	4	1.054626641
exampl_queri	2	2	4	4	1.054626641
normal_us	2	1	2	4	2.054626641
topic_refer	2	2	4	4	1.054626641
complet_text	1	1	1	1	1.82315466
context_process	1	1	1	1	1.82315466
correl_topic	1	1	1	1	1.82315466
data_chang	1	1	1	1	1.82315466
help_peopl	1	1	1	1	1.82315466
inform_thu	1	1	1	1	1.82315466

Theme	2013 Tot	2013 Doc	XY	X^2	Distance
limit_word	1	1	1	1	1.82315466
method_exampl	1	1	1	1	1.82315466
mine_word	1	1	1	1	1.82315466
model_prove	1	1	1	1	1.82315466
model_singl	1	1	1	1	1.82315466
nois_data	1	1	1	1	1.82315466
perform_find	1	1	1	1	1.82315466
term_process	1	1	1	1	1.82315466
time_make	1	1	1	1	1.82315466
us_collect	1	1	1	1	1.82315466
us_determin	1	1	1	1	1.82315466
user_accord	1	1	1	1	1.82315466
valu_text	1	1	1	1	1.82315466
word_correl	1	1	1	1	1.82315466
mean_approach	3	2	6	9	1.286098622
current_version	2	2	4	4	1.054626641
martin_porter	2	2	4	4	1.054626641
obtain_relev	2	2	4	4	1.054626641
refer_mean	2	2	4	4	1.054626641
term_obtain	2	2	4	4	1.054626641
approach_discov	1	1	1	1	1.82315466
approach_estim	1	1	1	1	1.82315466
catégori_classif	1	1	1	1	1.82315466
classifi_built	1	1	1	1	1.82315466
classifi_simpl	1	1	1	1	1.82315466
data_initi	1	1	1	1	1.82315466
featur_input	1	1	1	1	1.82315466
function_determin	1	1	1	1	1.82315466
improv_document	1	1	1	1	1.82315466
measur_emot	1	1	1	1	1.82315466
preprocess_token	1	1	1	1	1.82315466
problem_lack	1	1	1	1	1.82315466
process_complet	1	1	1	1	1.82315466
provid_signific	1	1	1	1	1.82315466
select_group	1	1	1	1	1.82315466
system_stem	1	1	1	1	1.82315466
thousand_document	1	1	1	1	1.82315466
train_remain	1	1	1	1	1.82315466

<b>Theme</b>	<b>2013 Tot</b>	<b>2013 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
contain_user	2	1	2	4	2.054626641
email_address	2	2	4	4	1.054626641
account_order	1	1	1	1	1.82315466
accuraci_significantli	1	1	1	1	1.82315466
base_lexic	1	1	1	1	1.82315466
base_theori	1	1	1	1	1.82315466
becom_time	1	1	1	1	1.82315466
featur_task	1	1	1	1	1.82315466
limit_term	1	1	1	1	1.82315466
process_break	1	1	1	1	1.82315466
public_date	1	1	1	1	1.82315466
retriev_semant	1	1	1	1	1.82315466
space_number	1	1	1	1	1.82315466
studi_analysi	1	1	1	1	1.82315466
symposium_document	1	1	1	1	1.82315466
tree_approach	1	1	1	1	1.82315466
apach_core	1	1	1	1	1.82315466

## APPENDIX 5-I

This appendix contains the distance from trend calculations for 2014.

Column H	Column I
SUM x	22684.0
SUM Y	11411.0
SUM XY	285722
SUM X^2	975788
n	2202
a	2.847645988
b	0.226612746
Trend Formula	$Y = 2.84764598750844 + 0.226612746231106X$

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
machin_learn	239	40	9560	57121	17.00809234
text_mine	242	50	12100	58564	7.687930575
natur_languag	265	49	12985	70225	13.90002374
inform_retriev	214	48	10272	45796	3.342773681
data_mine	179	38	6802	32041	5.411327563
stop_word	142	45	6390	20164	-9.973344048
naiv_bay	115	28	3220	13225	0.908111804
text_classif	181	34	6154	32761	9.864553055
languag_process	172	43	7396	29584	-1.174961661
featur_select	84	20	1680	7056	1.883116671
text_document	150	36	5400	22500	0.839557922
sentiment_analysi	138	16	2208	19044	18.12020497
neural_network	103	15	1545	10609	11.18875885
social_media	171	14	2394	29241	27.59842559
precis_recal	92	25	2300	8464	-1.303981359
social_network	58	17	986	3364	-1.008814731
document_cluster	75	17	1275	5625	2.843601955
part_speech	109	21	2289	11881	6.548435327
comput_linguist	125	22	2750	15625	9.174239266

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
arab_text	59	9	531	3481	7.217798015
topic_model	110	7	770	12100	20.77504807
term_frequenc	97	33	3201	9409	-8.170917628
text_categor	115	23	2645	13225	5.908111804
support_vector	69	23	1587	4761	-4.516074523
vector_space	68	21	1428	4624	-2.742687269
train_data	85	24	2040	7225	-1.890270583
vector_machin	66	22	1452	4356	-4.195912761
name_entiti	62	9	558	3844	7.897636254
search_engin	61	19	1159	3721	-2.328976492
similar_measur	86	23	1978	7396	-0.663657837
document_frequenc	91	31	2821	8281	-7.530594105
featur_extract	36	17	612	1296	-5.994295148
posit_neg	68	17	1156	4624	1.257312731
base_approach	80	21	1680	6400	-0.023334314
term_weight	95	23	2185	9025	1.375856879
text_process	56	19	1064	3136	-3.462040224
text_analysi	37	22	814	1369	-10.7676824
learn_algorithm	59	23	1357	3481	-6.782201985
word_remov	67	28	1876	4489	-9.969300015
space_model	39	18	702	1521	-6.314456909
artifici_intellig	63	25	1575	3969	-7.875751
cross_valid	38	10	380	1444	1.458930344
arab_languag	51	10	510	2601	4.404896045
featur_vector	27	12	324	729	-3.033809864
stem_algorithm	66	22	1452	4356	-4.195912761
cluster_algorithm	54	14	756	2916	1.084734284
word_document	57	29	1653	3249	-13.23542748
train_test	43	16	688	1849	-3.408005925
scienc_engin	64	20	1280	4096	-2.649138254
number_word	54	22	1188	2916	-6.915265716
word_stem	58	28	1624	3364	-12.00881473
inform_extract	46	17	782	2116	-3.728167686
decis_tree	86	18	1548	7396	4.336342163
document_collect	51	28	1428	2601	-13.59510395
semant_analysi	50	14	700	2500	0.178283299
softwar_engin	50	15	750	2500	-0.821716701
document_document	33	21	693	1089	-10.67413339

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
latent_semant	44	14	616	1936	-1.181393178
invers_document	52	25	1300	2704	-10.36849121
retriev_system	25	14	350	625	-5.487035357
depart_comput	34	19	646	1156	-8.447520641
bay_classifi	35	12	420	1225	-1.220907894
test_data	45	17	765	2025	-3.954780432
cosin_similar	46	15	690	2116	-1.728167686
document_term	40	19	760	1600	-7.087844163
data_process	54	9	486	2916	6.084734284
data_set	24	14	336	576	-5.713648103
data_collect	45	24	1080	2025	-10.95478043
rule_base	37	14	518	1369	-2.767682402
word_list	14	10	140	196	-3.979775565
train_model	20	6	120	400	1.379900912
keyword_extract	31	7	217	961	2.872641121
random_forest	19	5	95	361	2.153288166
base_method	43	17	731	1849	-4.408005925
nearest_neighbor	51	16	816	2601	-1.595103955
latent_dirichlet	56	9	504	3136	6.537959776
stem_word	28	18	504	784	-8.807197118
classif_algorithm	31	15	465	961	-5.127358879
porter_stemmer	17	9	153	289	-2.299937327
speech_tag	42	11	462	1764	1.365381329
mine_techniqu	35	11	385	1225	-0.220907894
knowledg_base	36	15	540	1296	-3.994295148
scienc_technolog	57	21	1197	3249	-5.235427477
electr_engin	17	6	102	289	0.700062673
supervis_learn	42	17	714	1764	-4.634618671
semant_similar	51	14	714	2601	0.404896045
model_base	17	10	170	289	-3.299937327
base_featur	74	12	888	5476	7.616989209
engin_comput	10	9	90	100	-3.88622655
light_stem	24	7	168	576	1.286351897
text_file	17	10	170	289	-3.299937327
cloud_comput	3	3	9	9	0.527484226
data_analysi	32	12	384	1024	-1.900746133
document_contain	39	22	858	1521	-10.31445691
dirichlet_alloc	48	8	384	2304	5.725057807

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
automat_text	31	16	496	961	-6.127358879
remov_stop	32	26	832	1024	-15.90074613
engin_technolog	33	9	297	1089	1.325866613
cluster_cluster	16	11	176	256	-4.526550073
document_classif	31	9	279	961	0.872641121
word_sentenc	62	20	1240	3844	-3.102363746
model_us	14	12	168	196	-5.979775565
word_frequenc	36	12	432	1296	-0.994295148
languag_model	59	7	413	3481	9.217798015
classif_us	49	17	833	2401	-3.048329447
solv_problem	29	15	435	841	-5.580584372
system_us	26	15	390	676	-6.26042261
recal_precis	26	11	286	676	-2.26042261
learn_approach	47	12	564	2209	1.49844506
document_summar	61	7	427	3721	9.671023508
frequenc_word	42	15	630	1764	-2.634618671
inform_scienc	30	23	690	900	-13.35397163
word_text	34	21	714	1156	-10.44752064
frequenc_term	29	15	435	841	-5.580584372
frequenc_invers	40	21	840	1600	-9.087844163
improv_perform	25	13	325	625	-4.487035357
relev_document	25	8	200	625	0.512964643
inform_process	36	20	720	1296	-8.994295148
comput_applic	20	13	260	400	-5.620099088
document_word	22	17	374	484	-9.166873595
extract_featur	17	11	187	289	-4.299937327
compar_studi	30	13	390	900	-3.353971626
method_base	32	13	416	1024	-2.900746133
select_method	22	13	286	484	-5.166873595
recal_measur	36	13	468	1296	-1.994295148
classif_accuraci	21	10	210	441	-2.393486342
number_time	25	17	425	625	-8.487035357
topic_topic	28	7	196	784	2.192802882
learn_model	14	8	112	196	-1.979775565
document_repres	34	15	510	1156	-4.447520641
languag_text	47	15	705	2209	-1.50155494
learn_techniqu	20	15	300	400	-7.620099088
cluster_method	22	12	264	484	-4.166873595

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
similar_document	26	15	390	676	-6.26042261
multi_document	64	6	384	4096	11.35086175
base_model	27	13	351	729	-4.033809864
number_featur	33	11	363	1089	-0.674133387
document_us	33	21	693	1089	-10.67413339
knowledg_discoveri	25	18	450	625	-9.487035357
word_appear	25	14	350	625	-5.487035357
word_featur	17	6	102	289	0.700062673
document_vector	15	9	135	225	-2.753162819
mean_word	45	20	900	2025	-6.954780432
extract_text	31	23	713	961	-13.12735888
textual_data	23	15	345	529	-6.940260849
form_word	11	7	77	121	-1.659613804
model_inform	13	8	104	169	-2.206388311
repres_document	31	15	465	961	-5.127358879
model_model	17	6	102	289	0.700062673
process_step	14	11	154	196	-4.979775565
extract_inform	31	17	527	961	-7.127358879
base_similar	16	11	176	256	-4.526550073
languag_technolog	43	8	344	1849	4.591994075
word_base	60	16	960	3600	0.444410761
comput_engin	23	11	253	529	-2.940260849
scienc_inform	7	6	42	49	-1.566064789
right_reserv	56	9	504	3136	6.537959776
opinion_mine	24	8	192	576	0.286351897
process_text	24	17	408	576	-8.713648103
evalu_metric	14	7	98	196	-0.979775565
manag_system	6	4	24	36	0.207322465
classif_task	25	16	400	625	-7.487035357
document_number	14	12	168	196	-5.979775565
stem_process	25	13	325	625	-4.487035357
test_dataset	20	5	100	400	2.379900912
document_represent	18	9	162	324	-2.07332458
noun_verb	29	15	435	841	-5.580584372
weight_term	32	17	544	1024	-6.900746133
us_word	25	17	425	625	-8.487035357
amount_data	14	8	112	196	-1.979775565
word_model	21	8	168	441	-0.393486342

<b>Theme</b>	<b>2014 Tot</b>	<b>2014 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
document_matrix	15	7	105	225	-0.753162819
number_topic	11	4	44	121	1.340386196
fold_cross	21	6	126	441	1.606513658
similar_word	37	10	370	1369	1.232317598
word_vector	13	7	91	169	-1.206388311
sentenc_document	23	11	253	529	-2.940260849
featur_space	18	8	144	324	-1.07332458
averag_precis	22	5	110	484	2.833126405
term_base	38	8	304	1444	3.458930344
mean_cluster	20	6	120	400	1.379900912
logist_regress	5	3	15	25	0.980709719
term_extract	19	8	152	361	-0.846711834
collect_document	19	16	304	361	-8.846711834
recal_score	22	7	154	484	0.833126405
us_data	11	7	77	121	-1.659613804
khoja_stemmer	26	4	104	676	4.73957739
text_content	39	12	468	1521	-0.314456909
stock_market	2	2	4	4	1.30087148
number_cluster	20	11	220	400	-3.620099088
morpholog_analysi	26	8	208	676	0.73957739
pattern_recognit	28	13	364	784	-3.807197118
us_inform	19	15	285	361	-7.846711834
data_data	16	11	176	256	-4.526550073
contain_word	22	13	286	484	-5.166873595
classif_model	12	8	96	144	-2.433001058
base_text	22	13	286	484	-5.166873595
step_step	23	5	115	529	3.059739151
user_queri	10	9	90	100	-3.88622655
model_train	10	6	60	100	-0.88622655
train_document	13	11	143	169	-5.206388311
featur_featur	15	8	120	225	-1.753162819
index_term	19	13	247	361	-5.846711834
select_featur	18	10	180	324	-3.07332458
unstructur_data	20	14	280	400	-6.620099088
arab_document	21	7	147	441	0.606513658
us_machin	29	13	377	841	-3.580584372
time_consum	35	17	595	1225	-6.220907894
algorithm_base	15	6	90	225	0.246837181

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
analysi_retriev	1	1	1	1	2.074258734
knowledg_manag	11	9	99	121	-3.659613804
cluster_base	21	9	189	441	-1.393486342
cluster_document	24	11	264	576	-2.713648103
learn_method	23	17	391	529	-8.940260849
improv_accuraci	18	13	234	324	-6.07332458
word_mean	25	12	300	625	-3.487035357
textual_content	35	8	280	1225	2.779092106
cluster_us	13	7	91	169	-1.206388311
human_languag	24	12	288	576	-3.713648103
predict_model	6	5	30	36	-0.792677535
weight_scheme	8	7	56	64	-2.339452043
base_system	11	8	88	121	-2.659613804
intellig_system	20	14	280	400	-6.620099088
collect_data	22	15	330	484	-7.166873595
comput_inform	16	12	192	256	-5.526550073
mobil_devic	15	5	75	225	1.246837181
word_occurr	45	10	450	2025	3.045219568
document_text	25	15	375	625	-6.487035357
classifi_classifi	18	6	108	324	0.92667542
cluster_techniqu	13	7	91	169	-1.206388311
term_occur	23	11	253	529	-2.940260849
gold_standard	9	4	36	81	0.887160704
queri_term	17	4	68	289	2.700062673
mean_algorithm	17	5	85	289	1.700062673
world_wide	21	9	189	441	-1.393486342
text_preprocess	13	10	130	169	-4.206388311
system_develop	13	9	117	169	-3.206388311
term_term	21	11	231	441	-3.393486342
develop_inform	25	18	450	625	-9.487035357
point_view	10	6	60	100	-0.88622655
word_root	31	16	496	961	-6.127358879
recommend_system	40	5	200	1600	6.912155837
maximum_entropi	15	7	105	225	-0.753162819
stem_stem	19	13	247	361	-5.846711834
error_rate	38	11	418	1444	0.458930344
plai_role	11	8	88	121	-2.659613804
singl_word	18	12	216	324	-5.07332458

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
prefix_suffix	18	6	108	324	0.92667542
imag_process	19	5	95	361	2.153288166
root_word	33	10	330	1089	0.325866613
document_retriev	18	8	144	324	-1.07332458
retriev_document	17	9	153	289	-2.299937327
spam_filter	36	4	144	1296	7.005704852
occur_document	18	13	234	324	-6.07332458
increas_number	11	11	121	121	-5.659613804
system_base	25	13	325	625	-4.487035357
classif_method	25	17	425	625	-8.487035357
comput_system	25	11	275	625	-2.487035357
inform_gain	20	11	220	400	-3.620099088
data_train	17	12	204	289	-5.299937327
document_similar	13	8	104	169	-2.206388311
us_text	23	14	322	529	-5.940260849
docu_ment	24	6	144	576	2.286351897
sourc_text	6	5	30	36	-0.792677535
full_text	11	5	55	121	0.340386196
latent_topic	47	3	141	2209	10.49844506
model_text	21	10	210	441	-2.393486342
advanc_comput	11	5	55	121	0.340386196
genet_algorithm	1	1	1	1	2.074258734
knowledg_data	37	17	629	1369	-5.767682402
search_queri	63	6	378	3969	11.124249
frequent_word	19	12	228	361	-4.846711834
inform_text	15	12	180	225	-5.753162819
term_appear	19	11	209	361	-3.846711834
class_label	22	10	220	484	-2.166873595
train_dataset	15	6	90	225	0.246837181
number_term	16	7	112	256	-0.526550073
probabl_distribut	10	7	70	100	-1.88622655
preprocess_step	15	9	135	225	-2.753162819
porter_stem	15	9	135	225	-2.753162819
issn_onlin	15	4	60	225	2.246837181
linguist_featur	30	5	150	900	4.646028374
similar_score	22	6	132	484	1.833126405
text_retriev	15	13	195	225	-6.753162819
evalu_us	7	4	28	49	0.433935211

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
word_occur	17	8	136	289	-1.299937327
condit_probabl	6	5	30	36	-0.792677535
data_engin	33	14	462	1089	-3.674133387
test_document	5	5	25	25	-1.019290281
process_manag	9	9	81	81	-4.112839296
exampl_word	19	10	190	361	-2.846711834
languag_resourc	24	8	192	576	0.286351897
reduc_number	23	15	345	529	-6.940260849
base_term	22	9	198	484	-1.166873595
approach_base	12	8	96	144	-2.433001058
base_classifi	7	4	28	49	0.433935211
process_techniqu	13	9	117	169	-3.206388311
fals_posit	23	10	230	529	-1.940260849
frequent_pattern	31	4	124	961	5.872641121
comput_commun	12	4	48	144	1.566998942
extract_keyword	20	8	160	400	-0.620099088
deep_learn	3	2	6	9	1.527484226
method_us	15	7	105	225	-0.753162819
phrase_base	10	4	40	100	1.11377345
document_corpu	12	6	72	144	-0.433001058
inform_knowledg	30	15	450	900	-5.353971626
classifi_text	16	10	160	256	-3.526550073
word_extract	33	13	429	1089	-2.674133387
word_count	15	7	105	225	-0.753162819
retriev_inform	20	16	320	400	-8.620099088
list_word	11	8	88	121	-2.659613804
structur_data	13	10	130	169	-4.206388311
input_data	8	7	56	64	-2.339452043
appear_document	21	11	231	441	-3.393486342
train_classifi	18	10	180	324	-3.07332458
sentenc_sentenc	39	10	390	1521	1.685543091
classifi_us	16	10	160	256	-3.526550073
text_us	16	14	224	256	-7.526550073
combin_featur	33	8	264	1089	2.325866613
classifi_train	11	9	99	121	-3.659613804
approach_us	21	16	336	441	-8.393486342
document_queri	11	7	77	121	-1.659613804
classif_problem	16	11	176	256	-4.526550073

<b>Theme</b>	<b>2014 Tot</b>	<b>2014 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
object_function	2	2	4	4	1.30087148
text_corpu	16	9	144	256	-2.526550073
process_inform	26	15	390	676	-6.26042261
document_base	12	10	120	144	-4.433001058
infor_mation	21	5	105	441	2.606513658
level_featur	6	2	12	36	2.207322465
system_perform	13	7	91	169	-1.206388311
program_languag	5	5	25	25	-1.019290281
system_applic	7	6	42	49	-1.566064789
queri_expans	8	5	40	64	-0.339452043
word_order	18	12	216	324	-5.07332458
algorithm_algorithm	13	9	117	169	-3.206388311
text_base	15	12	180	225	-5.753162819
pattern_mine	23	5	115	529	3.059739151
issn_volum	19	4	76	361	3.153288166
remov_stem	23	18	414	529	-9.940260849
evalu_measur	11	8	88	121	-2.659613804
artifici_neural	18	3	54	324	3.92667542
document_featur	7	5	35	49	-0.566064789
view_project	22	12	264	484	-4.166873595
model_evalu	3	3	9	9	0.527484226
media_text	43	5	215	1849	7.591994075
euclidean_distanc	9	6	54	81	-1.112839296
contain_term	20	13	260	400	-5.620099088
algorithm_perform	9	8	72	81	-3.112839296
extract_us	8	7	56	64	-2.339452043
colleg_engin	25	11	275	625	-2.487035357
build_model	18	4	72	324	2.92667542
linguist_analysi	21	6	126	441	1.606513658
engin_scien	18	2	36	324	4.92667542
contain_document	11	7	77	121	-1.659613804
singl_document	19	9	171	361	-1.846711834
data_structur	10	6	60	100	-0.88622655
system_design	11	10	110	121	-4.659613804
soft_comput	9	5	45	81	-0.112839296
volum_number	19	6	114	361	1.153288166
relev_inform	11	9	99	121	-3.659613804
process_document	14	10	140	196	-3.979775565

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
text_featur	10	7	70	100	-1.88622655
cluster_process	9	8	72	81	-3.112839296
word_us	25	11	275	625	-2.487035357
classif_process	21	11	231	441	-3.393486342
word_term	8	6	48	64	-1.339452043
perform_test	1	1	1	1	2.074258734
input_output	13	8	104	169	-2.206388311
user_request	18	18	324	324	-11.07332458
word_embed	3	1	3	9	2.527484226
random_field	8	3	24	64	1.660547957
featur_base	26	6	156	676	2.73957739
public_http	17	17	289	289	-10.29993733
word_topic	16	3	48	256	3.473449927
number_iter	3	3	9	9	0.527484226
unigram_bigram	16	8	128	256	-1.526550073
allow_user	4	4	16	16	-0.245903028
design_implement	6	3	18	36	1.207322465
content_base	22	11	242	484	-3.166873595
semant_index	15	9	135	225	-2.753162819
cluster_text	24	12	288	576	-3.713648103
mathemat_model	18	2	36	324	4.92667542
document_process	16	10	160	256	-3.526550073
algorithm_us	20	11	220	400	-3.620099088
period_time	2	2	4	4	1.30087148
word_sens	14	4	56	196	2.020224435
content_page	29	21	609	841	-11.58058437
wide_rang	13	9	117	169	-3.206388311
comput_time	8	7	56	64	-2.339452043
autom_text	11	10	110	121	-4.659613804
document_topic	14	5	70	196	1.020224435
syntact_semant	19	7	133	361	0.153288166
method_text	14	12	168	196	-5.979775565
unsupervis_learn	14	9	126	196	-2.979775565
discoveri_data	12	9	108	144	-3.433001058
informa_tion	5	4	20	25	-0.019290281
data_text	11	8	88	121	-2.659613804
topic_document	10	3	30	100	2.11377345
emot_recognit	1	1	1	1	2.074258734

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
perform_us	15	12	180	225	-5.753162819
base_word	14	10	140	196	-3.979775565
vector_represent	25	6	150	625	2.512964643
us_featur	12	9	108	144	-3.433001058
measur_similar	21	16	336	441	-8.393486342
corpu_base	15	3	45	225	3.246837181
text_word	23	14	322	529	-5.940260849
graph_base	39	6	234	1521	5.685543091
semant_featur	8	5	40	64	-0.339452043
confus_matrix	15	6	90	225	0.246837181
emot_classif	4	1	4	16	2.754096972
network_analysi	10	6	60	100	-0.88622655
unstructur_text	9	8	72	81	-3.112839296
origin_document	6	3	18	36	1.207322465
proc_conf	27	5	135	729	3.966190136
sentenc_word	28	13	364	784	-3.807197118
distanc_measur	9	6	54	81	-1.112839296
berlin_heidelberg	14	8	112	196	-1.979775565
measur_precis	8	5	40	64	-0.339452043
similar_sentenc	18	7	126	324	-0.07332458
represent_document	12	7	84	144	-1.433001058
train_corpu	9	5	45	81	-0.112839296
uniqu_word	17	5	85	289	1.700062673
data_model	4	3	12	16	0.754096972
hierarch_cluster	9	7	63	81	-2.112839296
probabilist_model	16	8	128	256	-1.526550073
evalu_perform	13	10	130	169	-4.206388311
model_perform	6	4	24	36	0.207322465
word_level	33	4	132	1089	6.325866613
pattern_base	19	7	133	361	0.153288166
classif_techniqu	6	5	30	36	-0.792677535
calcul_us	18	8	144	324	-1.07332458
data_sourc	9	6	54	81	-1.112839296
occurr_word	16	13	208	256	-6.526550073
commun_technolog	6	4	24	36	0.207322465
stem_arab	20	6	120	400	1.379900912
inform_commun	11	8	88	121	-2.659613804
taken_account	10	6	60	100	-0.88622655

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
fals_neg	13	8	104	169	-2.206388311
tweet_contain	13	4	52	169	1.793611689
occur_term	17	14	238	289	-7.299937327
base_cluster	10	7	70	100	-1.88622655
reduc_dimension	10	6	60	100	-0.88622655
system_evalu	4	2	8	16	1.754096972
word_given	10	7	70	100	-1.88622655
mine_text	10	10	100	100	-4.88622655
dataset_dataset	9	5	45	81	-0.112839296
process_time	15	8	120	225	-1.753162819
time_period	10	6	60	100	-0.88622655
automat_extract	17	9	153	289	-2.299937327
dataset_consist	15	9	135	225	-2.753162819
file_contain	11	8	88	121	-2.659613804
test_perform	8	6	48	64	-1.339452043
share_task	32	2	64	1024	8.099253867
document_train	7	6	42	49	-1.566064789
word_cluster	23	10	230	529	-1.940260849
user_gener	14	6	84	196	0.020224435
base_semant	11	5	55	121	0.340386196
statist_analysi	12	9	108	144	-3.433001058
transact_knowledg	29	12	348	841	-2.580584372
model_built	3	3	9	9	0.527484226
twitter_user	2	1	2	4	2.30087148
model_document	8	5	40	64	-0.339452043
retriev_relev	11	8	88	121	-2.659613804
gram_gram	5	4	20	25	-0.019290281
speech_recognit	29	4	116	841	5.419415628
linear_regress	2	2	4	4	1.30087148
data_point	7	4	28	49	0.433935211
common_word	10	9	90	100	-3.88622655
signal_process	30	8	240	900	1.646028374
calcul_similar	21	11	231	441	-3.393486342
system_system	9	8	72	81	-3.112839296
model_data	15	5	75	225	1.246837181
standard_arab	9	5	45	81	-0.112839296
perform_system	8	5	40	64	-0.339452043
valu_calcul	19	10	190	361	-2.846711834

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
cluster_similar	11	8	88	121	-2.659613804
classif_text	11	9	99	121	-3.659613804
frequenc_document	22	15	330	484	-7.166873595
perform_evalu	18	11	198	324	-4.07332458
precis_measur	6	5	30	36	-0.792677535
algorithm_appli	14	9	126	196	-2.979775565
text_classifi	16	9	144	256	-2.526550073
model_predict	1	1	1	1	2.074258734
analysi_method	16	6	96	256	0.473449927
algo_rithm	9	5	45	81	-0.112839296
distribut_topic	13	4	52	169	1.793611689
classifi_document	8	7	56	64	-2.339452043
text_collect	8	5	40	64	-0.339452043
extract_term	12	6	72	144	-0.433001058
repres_vector	9	7	63	81	-2.112839296
word_categori	2	2	4	4	1.30087148
accuraci_precis	3	2	6	9	1.527484226
punctuat_mark	19	7	133	361	0.153288166
test_set	4	3	12	16	0.754096972
data_extract	14	10	140	196	-3.979775565
comput_technolog	10	6	60	100	-0.88622655
word_represent	18	3	54	324	3.92667542
tabl_perform	7	5	35	49	-0.566064789
neg_exampl	10	5	50	100	0.11377345
featur_word	19	8	152	361	-0.846711834
rule_mine	4	4	16	16	-0.245903028
test_test	5	3	15	25	0.980709719
us_porter	5	4	20	25	-0.019290281
content_document	13	11	143	169	-5.206388311
word_gener	10	9	90	100	-3.88622655
document_model	3	3	9	9	0.527484226
gener_word	6	6	36	36	-1.792677535
featur_valu	24	8	192	576	0.286351897
highest_accuraci	19	9	171	361	-1.846711834
mine_method	12	8	96	144	-2.433001058
develop_model	8	6	48	64	-1.339452043
lexic_databas	17	9	153	289	-2.299937327
regress_model	7	4	28	49	0.433935211

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
tweet_user	5	2	10	25	1.980709719
class_class	10	8	80	100	-2.88622655
classif_cluster	16	10	160	256	-3.526550073
featur_text	9	6	54	81	-1.112839296
stem_stop	12	8	96	144	-2.433001058
process_system	12	7	84	144	-1.433001058
process_extract	15	11	165	225	-4.753162819
develop_system	10	6	60	100	-0.88622655
implement_us	10	6	60	100	-0.88622655
request_enhanc	18	17	306	324	-10.07332458
dataset_contain	7	6	42	49	-1.566064789
extract_word	16	10	160	256	-3.526550073
model_featur	6	6	36	36	-1.792677535
comput_vision	12	4	48	144	1.566998942
us_classifi	9	6	54	81	-1.112839296
train_exampl	10	6	60	100	-0.88622655
evalu_system	3	3	9	9	0.527484226
word_contain	8	5	40	64	-0.339452043
method_appli	12	9	108	144	-3.433001058
extract_method	4	3	12	16	0.754096972
token_token	14	8	112	196	-1.979775565
repres_text	16	13	208	256	-6.526550073
retriev_text	12	11	132	144	-5.433001058
discuss_stat	17	17	289	289	-10.29993733
enhanc_download	17	17	289	289	-10.29993733
public_stat	17	17	289	289	-10.29993733
view_public	17	17	289	289	-10.29993733
word_dictionari	16	7	112	256	-0.526550073
cluster_number	11	5	55	121	0.340386196
word_repres	21	15	315	441	-7.393486342
correl_coeffici	8	4	32	64	0.660547957
statist_machin	7	6	42	49	-1.566064789
porter_algorithm	11	9	99	121	-3.659613804
twitter_data	8	5	40	64	-0.339452043
mine_algorithm	14	5	70	196	1.020224435
extract_document	21	11	231	441	-3.393486342
sentenc_text	15	8	120	225	-1.753162819
semant_relationship	28	8	224	784	1.192802882

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
techniqu_text	6	6	36	36	-1.792677535
make_process	2	2	4	4	1.30087148
human_resourc	1	1	1	1	2.074258734
qualiti_cluster	5	3	15	25	0.980709719
relev_featur	9	3	27	81	1.887160704
manual_label	10	5	50	100	0.11377345
represent_model	14	3	42	196	3.020224435
word_consid	10	7	70	100	-1.88622655
publiccli_avail	9	5	45	81	-0.112839296
automat_index	35	5	175	1225	5.779092106
springer_verlag	15	10	150	225	-3.753162819
distribut_word	13	5	65	169	0.793611689
keyword_text	15	11	165	225	-4.753162819
word_similar	19	8	152	361	-0.846711834
root_stem	20	6	120	400	1.379900912
measur_accuraci	14	7	98	196	-0.979775565
cluster_approach	8	5	40	64	-0.339452043
classif_approach	4	4	16	16	-0.245903028
interest_includ	20	9	180	400	-1.620099088
inform_document	15	11	165	225	-4.753162819
mine_inform	12	8	96	144	-2.433001058
document_index	15	8	120	225	-1.753162819
featur_document	12	8	96	144	-2.433001058
model_repres	12	9	108	144	-3.433001058
neg_word	8	4	32	64	0.660547957
sequenc_word	11	7	77	121	-1.659613804
perform_model	6	4	24	36	0.207322465
sens_disambigu	9	3	27	81	1.887160704
data_base	14	7	98	196	-0.979775565
model_select	8	4	32	64	0.660547957
search_space	14	7	98	196	-0.979775565
tweet_tweet	24	4	96	576	4.286351897
predict_stock	1	1	1	1	2.074258734
classifi_base	7	7	49	49	-2.566064789
select_text	10	8	80	100	-2.88622655
bay_algorithm	5	4	20	25	-0.019290281
represent_text	7	6	42	49	-1.566064789
resourc_evalu	15	7	105	225	-0.753162819

<b>Theme</b>	<b>2014 Tot</b>	<b>2014 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
dimension_space	8	7	56	64	-2.339452043
main_idea	7	7	49	49	-2.566064789
tree_structur	7	5	35	49	-0.566064789
algorithm_cluster	14	9	126	196	-2.979775565
word_stop	13	9	117	169	-3.206388311
measur_measur	8	6	48	64	-1.339452043
extract_sentenc	24	6	144	576	2.286351897
problem_solv	8	5	40	64	-0.339452043
word_corpu	11	8	88	121	-2.659613804
word_found	13	11	143	169	-5.206388311
base_search	4	3	12	16	0.754096972
data_store	18	11	198	324	-4.07332458
neg_neutral	6	6	36	36	-1.792677535
issu_march	2	1	2	4	2.30087148
search_algorithm	16	7	112	256	-0.526550073
recal_valu	9	6	54	81	-1.112839296
techniqu_base	4	4	16	16	-0.245903028
data_preprocess	6	3	18	36	1.207322465
method_perform	7	7	49	49	-2.566064789
obtain_us	5	5	25	25	-1.019290281
statist_model	17	10	170	289	-3.299937327
accuraci_rate	4	3	12	16	0.754096972
textual_inform	25	8	200	625	0.512964643
cluster_data	10	8	80	100	-2.88622655
test_collect	1	1	1	1	2.074258734
semant_inform	22	10	220	484	-2.166873595
assist_professor	22	11	242	484	-3.166873595
weight_word	10	7	70	100	-1.88622655
bayesian_classifi	9	7	63	81	-2.112839296
given_text	13	10	130	169	-4.206388311
word_filter	3	3	9	9	0.527484226
content_word	12	7	84	144	-1.433001058
execut_time	2	2	4	4	1.30087148
highest_score	7	6	42	49	-1.566064789
repres_number	9	8	72	81	-3.112839296
analyz_data	8	4	32	64	0.660547957
model_gener	10	8	80	100	-2.88622655
repres_word	15	11	165	225	-4.753162819

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
languag_word	18	6	108	324	0.92667542
topic_word	7	3	21	49	1.433935211
represent_word	23	7	161	529	1.059739151
tweet_us	10	5	50	100	0.11377345
base_algorithm	9	6	54	81	-1.112839296
model_paramet	14	5	70	196	1.020224435
document_sentenc	14	7	98	196	-0.979775565
content_text	10	8	80	100	-2.88622655
method_automat	11	7	77	121	-1.659613804
user_user	5	3	15	25	0.980709719
further_process	10	8	80	100	-2.88622655
system_implement	9	7	63	81	-2.112839296
process_perform	8	7	56	64	-2.339452043
springer_berlin	11	6	66	121	-0.659613804
accuraci_us	7	6	42	49	-1.566064789
technolog_comput	11	5	55	121	0.340386196
volum_page	2	2	4	4	1.30087148
featur_gener	8	3	24	64	1.660547957
perform_measur	6	5	30	36	-0.792677535
base_analysi	9	5	45	81	-0.112839296
amount_inform	9	7	63	81	-2.112839296
document_level	5	4	20	25	-0.019290281
input_document	16	10	160	256	-3.526550073
sentenc_base	10	7	70	100	-1.88622655
mine_applic	12	6	72	144	-0.433001058
valu_term	7	3	21	49	1.433935211
word_cloud	7	2	14	49	2.433935211
root_form	13	11	143	169	-5.206388311
improv_qualiti	7	6	42	49	-1.566064789
societi_inform	13	11	143	169	-5.206388311
us_algorithm	12	8	96	144	-2.433001058
model_develop	6	4	24	36	0.207322465
previou_studi	8	6	48	64	-1.339452043
posit_word	14	5	70	196	1.020224435
text_contain	7	4	28	49	0.433935211
detect_system	7	3	21	49	1.433935211
charact_recognit	3	1	3	9	2.527484226
model_test	3	3	9	9	0.527484226

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
frequent_itemset	1	1	1	1	2.074258734
measur_perform	11	8	88	121	-2.659613804
document_calcul	9	7	63	81	-2.112839296
gibb_sampl	10	4	40	100	1.11377345
solut_problem	9	5	45	81	-0.112839296
avail_onlin	7	4	28	49	0.433935211
weight_assign	6	4	24	36	0.207322465
model_topic	12	3	36	144	2.566998942
measur_text	9	6	54	81	-1.112839296
help_user	8	8	64	64	-3.339452043
cluster_perform	8	4	32	64	0.660547957
rank_document	3	3	9	9	0.527484226
train_sampl	5	3	15	25	0.980709719
perform_experi	7	5	35	49	-0.566064789
previou_step	7	3	21	49	1.433935211
step_process	10	10	100	100	-4.88622655
time_complex	12	5	60	144	0.566998942
number_text	18	7	126	324	-0.07332458
us_techniqu	4	4	16	16	-0.245903028
find_similar	11	6	66	121	-0.659613804
correctli_classifi	15	6	90	225	0.246837181
word_process	6	5	30	36	-0.792677535
languag_arab	9	7	63	81	-2.112839296
type_data	5	5	25	25	-1.019290281
data_avail	8	4	32	64	0.660547957
mine_data	9	7	63	81	-2.112839296
number_user	2	2	4	4	1.30087148
extract_system	6	5	30	36	-0.792677535
dimension_vector	13	7	91	169	-1.206388311
learn_text	11	9	99	121	-3.659613804
techniqu_appli	4	4	16	16	-0.245903028
semant_mean	11	9	99	121	-3.659613804
similar_valu	12	8	96	144	-2.433001058
charact_word	11	5	55	121	0.340386196
cluster_centroid	4	2	8	16	1.754096972
function_word	5	4	20	25	-0.019290281
user_search	24	6	144	576	2.286351897
word_number	10	10	100	100	-4.88622655

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
order_reduc	13	9	117	169	-3.206388311
degre_comput	17	7	119	289	-0.299937327
dimension_data	11	7	77	121	-1.659613804
exist_method	10	6	60	100	-0.88622655
extract_data	9	7	63	81	-2.112839296
vector_word	4	3	12	16	0.754096972
knowledg_engin	7	6	42	49	-1.566064789
scienc_depart	10	6	60	100	-0.88622655
string_match	3	2	6	9	1.527484226
main_problem	9	9	81	81	-4.112839296
model_classifi	6	4	24	36	0.207322465
measur_us	10	6	60	100	-0.88622655
origin_text	10	7	70	100	-1.88622655
statist_inform	5	2	10	25	1.980709719
measur_evalu	2	2	4	4	1.30087148
find_relev	15	8	120	225	-1.753162819
arab_corpu	4	4	16	16	-0.245903028
system_architectur	7	4	28	49	0.433935211
assign_weight	4	3	12	16	0.754096972
mean_text	12	9	108	144	-3.433001058
addit_featur	2	2	4	4	1.30087148
topic_base	28	7	196	784	2.192802882
weight_averag	19	6	114	361	1.153288166
word_token	11	4	44	121	1.340386196
group_group	8	7	56	64	-2.339452043
process_model	5	4	20	25	-0.019290281
score_score	3	2	6	9	1.527484226
preprocess_text	7	3	21	49	1.433935211
algorithm_document	5	5	25	25	-1.019290281
classifi_perform	6	5	30	36	-0.792677535
word_semant	12	7	84	144	-1.433001058
analysi_document	7	3	21	49	1.433935211
us_term	9	9	81	81	-4.112839296
combin_word	13	8	104	169	-2.206388311
network_base	8	6	48	64	-1.339452043
time_term	11	8	88	121	-2.659613804
gener_topic	11	4	44	121	1.340386196
improv_effici	10	7	70	100	-1.88622655

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
data_contain	13	10	130	169	-4.206388311
free_text	15	5	75	225	1.246837181
linear_combin	7	5	35	49	-0.566064789
system_extract	5	5	25	25	-1.019290281
classifi_test	9	5	45	81	-0.112839296
tech_niqu	5	4	20	25	-0.019290281
us_train	6	4	24	36	0.207322465
word_common	5	5	25	25	-1.019290281
count_number	10	9	90	100	-3.88622655
evalu_model	3	3	9	9	0.527484226
experi_perform	6	4	24	36	0.207322465
classif_base	8	7	56	64	-2.339452043
featur_train	8	5	40	64	-0.339452043
mine_us	9	6	54	81	-1.112839296
term_text	8	5	40	64	-0.339452043
model_method	7	5	35	49	-0.566064789
provid_inform	7	3	21	49	1.433935211
start_point	8	8	64	64	-3.339452043
process_method	7	6	42	49	-1.566064789
textual_document	14	5	70	196	1.020224435
applic_text	9	8	72	81	-3.112839296
corpu_document	6	6	36	36	-1.792677535
gener_model	9	5	45	81	-0.112839296
group_similar	12	10	120	144	-4.433001058
lexicon_base	6	3	18	36	1.207322465
valu_document	8	5	40	64	-0.339452043
data_test	7	4	28	49	0.433935211
word_select	12	7	84	144	-1.433001058
base_topic	16	3	48	256	3.473449927
human_factor	4	3	12	16	0.754096972
predefin_categorii	8	5	40	64	-0.339452043
classifi_categorii	7	6	42	49	-1.566064789
document_total	6	5	30	36	-0.792677535
sentenc_length	8	6	48	64	-1.339452043
word_approach	3	2	6	9	1.527484226
cluster_qualiti	3	3	9	9	0.527484226
collect_text	4	4	16	16	-0.245903028
maximum_likelihood	9	4	36	81	0.887160704

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
measur_valu	4	4	16	16	-0.245903028
us_support	12	9	108	144	-3.433001058
word_includ	8	8	64	64	-3.339452043
document_consid	15	9	135	225	-2.753162819
empir_studi	5	5	25	25	-1.019290281
system_test	9	7	63	81	-2.112839296
comput_similar	11	5	55	121	0.340386196
corpu_text	6	4	24	36	0.207322465
morgan_kaufmann	12	9	108	144	-3.433001058
stem_us	9	9	81	81	-4.112839296
averag_number	9	5	45	81	-0.112839296
frequenc_count	6	4	24	36	0.207322465
includ_text	9	8	72	81	-3.112839296
techniqu_extract	10	5	50	100	0.11377345
develop_method	6	6	36	36	-1.792677535
given_word	13	7	91	169	-1.206388311
process_reduc	14	10	140	196	-3.979775565
train_us	6	5	30	36	-0.792677535
us_simpl	5	4	20	25	-0.019290281
word_context	11	6	66	121	-0.659613804
wordnet_lexic	9	6	54	81	-1.112839296
emot_categor	8	1	8	64	3.660547957
represent_us	8	4	32	64	0.660547957
time_word	10	8	80	100	-2.88622655
word_exampl	9	7	63	81	-2.112839296
issu_issn	17	4	68	289	2.700062673
posit_fals	12	8	96	144	-2.433001058
user_tweet	1	1	1	1	2.074258734
weight_approach	4	4	16	16	-0.245903028
index_document	9	7	63	81	-2.112839296
perform_classifi	7	7	49	49	-2.566064789
address_problem	5	5	25	25	-1.019290281
document_rank	11	4	44	121	1.340386196
pattern_analysi	4	4	16	16	-0.245903028
us_vector	3	3	9	9	0.527484226
princip_compon	6	4	24	36	0.207322465
term_number	7	6	42	49	-1.566064789
mine_task	10	7	70	100	-1.88622655

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
perform_cluster	7	4	28	49	0.433935211
take_advantag	9	6	54	81	-1.112839296
algorithm_stem	5	5	25	25	-1.019290281
white_space	3	3	9	9	0.527484226
featur_us	2	2	4	4	1.30087148
graph_node	1	1	1	1	2.074258734
weight_calcul	4	4	16	16	-0.245903028
spam_detect	30	2	60	900	7.646028374
store_databas	8	5	40	64	-0.339452043
mixtur_model	5	4	20	25	-0.019290281
method_evalu	2	2	4	4	1.30087148
inform_avail	7	6	42	49	-1.566064789
precis_valu	5	2	10	25	1.980709719
suffix_strip	10	7	70	100	-1.88622655
sourc_inform	7	7	49	49	-2.566064789
featur_repres	6	5	30	36	-0.792677535
classifi_featur	8	4	32	64	0.660547957
process_word	9	8	72	81	-3.112839296
algorithm_develop	4	4	16	16	-0.245903028
main_reason	2	2	4	4	1.30087148
base_stem	8	3	24	64	1.660547957
comput_approach	10	7	70	100	-1.88622655
given_queri	8	5	40	64	-0.339452043
perform_algorithm	9	5	45	81	-0.112839296
stopword_remov	8	7	56	64	-2.339452043
inform_word	10	4	40	100	1.11377345
model_word	11	6	66	121	-0.659613804
optic_charact	3	1	3	9	2.527484226
scienc_applic	4	3	12	16	0.754096972
learn_object	2	1	2	4	2.30087148
automat_evalu	1	1	1	1	2.074258734
vector_featur	7	5	35	49	-0.566064789
model_compar	2	2	4	4	1.30087148
term_select	4	2	8	16	1.754096972
us_gram	3	2	6	9	1.527484226
user_defin	3	3	9	9	0.527484226
base_user	10	8	80	100	-2.88622655
index_process	14	2	28	196	4.020224435

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
similar_mean	4	2	8	16	1.754096972
gram_base	4	3	12	16	0.754096972
sourc_data	3	3	9	9	0.527484226
text_messag	9	4	36	81	0.887160704
technolog_volum	8	4	32	64	0.660547957
analysi_social	7	4	28	49	0.433935211
base_techniqu	11	9	99	121	-3.659613804
dataset_train	5	4	20	25	-0.019290281
select_algorithm	3	2	6	9	1.527484226
token_stop	8	7	56	64	-2.339452043
us_wordnet	13	6	78	169	-0.206388311
valu_pair	6	5	30	36	-0.792677535
base_represent	17	6	102	289	0.700062673
facebook_twitter	6	5	30	36	-0.792677535
us_wikipedia	13	5	65	169	0.793611689
class_number	5	4	20	25	-0.019290281
dimension_featur	1	1	1	1	2.074258734
extract_techniqu	3	3	9	9	0.527484226
model_automat	4	2	8	16	1.754096972
european_languag	4	4	16	16	-0.245903028
text_repres	12	9	108	144	-3.433001058
comput_network	2	2	4	4	1.30087148
method_combin	6	6	36	36	-1.792677535
word_match	13	7	91	169	-1.206388311
algorithm_find	11	8	88	121	-2.659613804
data_consist	9	7	63	81	-2.112839296
featur_includ	11	5	55	121	0.340386196
form_stem	8	6	48	64	-1.339452043
token_process	8	7	56	64	-2.339452043
weight_vector	7	2	14	49	2.433935211
consist_document	10	5	50	100	0.11377345
sentenc_structur	9	5	45	81	-0.112839296
system_consist	8	7	56	64	-2.339452043
test_model	4	4	16	16	-0.245903028
analysi_machin	3	2	6	9	1.527484226
frequenc_weight	6	4	24	36	0.207322465
measur_calcul	6	5	30	36	-0.792677535
workshop_comput	11	8	88	121	-2.659613804

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
text_dataset	3	2	6	9	1.527484226
us_equat	18	6	108	324	0.92667542
collect_corpu	11	9	99	121	-3.659613804
lexic_featur	12	5	60	144	0.566998942
mean_valu	13	5	65	169	0.793611689
model_extract	8	6	48	64	-1.339452043
perform_analysi	5	5	25	25	-1.019290281
corpu_word	4	4	16	16	-0.245903028
model_system	6	3	18	36	1.207322465
us_rule	7	6	42	49	-1.566064789
concept_document	12	6	72	144	-0.433001058
categori_categori	5	4	20	25	-0.019290281
length_document	8	6	48	64	-1.339452043
north_chapter	10	6	60	100	-0.88622655
overal_perform	10	6	60	100	-0.88622655
document_length	4	3	12	16	0.754096972
cluster_accuraci	3	3	9	9	0.527484226
good_perform	3	3	9	9	0.527484226
list_stop	7	3	21	49	1.433935211
index_html	5	3	15	25	0.980709719
algorithm_implement	7	7	49	49	-2.566064789
convert_text	13	10	130	169	-4.206388311
word_elimin	9	8	72	81	-3.112839296
improv_text	10	7	70	100	-1.88622655
collect_tweet	15	5	75	225	1.246837181
count_word	5	5	25	25	-1.019290281
extract_knowledg	6	4	24	36	0.207322465
statist_signific	4	4	16	16	-0.245903028
emot_text	7	1	7	49	3.433935211
knowledg_extract	6	5	30	36	-0.792677535
term_queri	8	6	48	64	-1.339452043
semant_evalu	5	4	20	25	-0.019290281
method_extract	8	7	56	64	-2.339452043
overal_accuraci	6	2	12	36	2.207322465
repres_term	8	5	40	64	-0.339452043
approach_automat	9	9	81	81	-4.112839296
automat_classifi	3	3	9	9	0.527484226
method_describ	4	4	16	16	-0.245903028

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
languag_specif	11	5	55	121	0.340386196
node_repres	6	4	24	36	0.207322465
topic_text	4	2	8	16	1.754096972
difficult_task	8	4	32	64	0.660547957
access_inform	2	2	4	4	1.30087148
depart_inform	5	3	15	25	0.980709719
naïv_bayesian	7	4	28	49	0.433935211
queri_word	5	2	10	25	1.980709719
caus_effect	8	2	16	64	2.660547957
comput_base	2	2	4	4	1.30087148
fine_grain	12	5	60	144	0.566998942
measur_defin	5	4	20	25	-0.019290281
text_written	7	6	42	49	-1.566064789
distribut_document	8	5	40	64	-0.339452043
lower_case	3	3	9	9	0.527484226
recognit_system	11	5	55	121	0.340386196
semi_automat	15	8	120	225	-1.753162819
consist_word	11	7	77	121	-1.659613804
context_base	8	6	48	64	-1.339452043
dataset_us	5	3	15	25	0.980709719
process_phase	15	9	135	225	-2.753162819
us_corpu	4	3	12	16	0.754096972
word_distribut	6	2	12	36	2.207322465
term_occurr	5	4	20	25	-0.019290281
method_cluster	6	5	30	36	-0.792677535
token_text	5	2	10	25	1.980709719
compon_analysi	6	5	30	36	-0.792677535
gener_term	11	11	121	121	-5.659613804
semant_structur	11	9	99	121	-3.659613804
stem_reduc	8	8	64	64	-3.339452043
term_accuraci	5	4	20	25	-0.019290281
cluster_word	5	5	25	25	-1.019290281
document_given	10	7	70	100	-1.88622655
system_text	6	6	36	36	-1.792677535
text_understand	3	3	9	9	0.527484226
us_mean	6	4	24	36	0.207322465
document_extract	6	4	24	36	0.207322465
frequenc_calcul	10	8	80	100	-2.88622655

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
document_group	7	4	28	49	0.433935211
domain_knowledg	4	4	16	16	-0.245903028
gener_content	6	4	24	36	0.207322465
learn_data	8	6	48	64	-1.339452043
retriev_base	4	3	12	16	0.754096972
algorithm_mean	5	3	15	25	0.980709719
approach_perform	6	5	30	36	-0.792677535
model_approach	2	2	4	4	1.30087148
network_us	3	2	6	9	1.527484226
gram_word	1	1	1	1	2.074258734
model_combin	6	5	30	36	-0.792677535
stemmer_algorithm	6	3	18	36	1.207322465
valu_paramet	5	4	20	25	-0.019290281
valu_word	5	5	25	25	-1.019290281
accuraci_tabl	6	4	24	36	0.207322465
assign_word	13	5	65	169	0.793611689
base_measur	4	3	12	16	0.754096972
process_approach	3	3	9	9	0.527484226
us_latent	18	5	90	324	1.92667542
gener_algorithm	3	3	9	9	0.527484226
preprocess_techniqu	7	5	35	49	-0.566064789
rule_rule	2	2	4	4	1.30087148
level_text	18	3	54	324	3.92667542
process_base	9	6	54	81	-1.112839296
relev_queri	5	3	15	25	0.980709719
document_test	4	4	16	16	-0.245903028
document_accord	10	8	80	100	-2.88622655
order_evalu	4	4	16	16	-0.245903028
base_learn	4	4	16	16	-0.245903028
algorithm_suffix	8	6	48	64	-1.339452043
approach_featur	1	1	1	1	2.074258734
time_process	3	3	9	9	0.527484226
equal_number	5	4	20	25	-0.019290281
improv_cluster	4	4	16	16	-0.245903028
classif_document	8	5	40	64	-0.339452043
gener_process	6	2	12	36	2.207322465
jordan_latent	8	6	48	64	-1.339452043
label_train	8	4	32	64	0.660547957

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
model_describ	7	5	35	49	-0.566064789
us_topic	2	2	4	4	1.30087148
base_machin	1	1	1	1	2.074258734
frequenc_number	6	5	30	36	-0.792677535
process_includ	9	6	54	81	-1.112839296
word_assign	9	4	36	81	0.887160704
automat_classif	5	5	25	25	-1.019290281
calcul_term	5	5	25	25	-1.019290281
signific_improv	11	6	66	121	-0.659613804
stage_process	12	3	36	144	2.566998942
valu_indic	3	3	9	9	0.527484226
analysi_tool	4	4	16	16	-0.245903028
gener_method	16	4	64	256	2.473449927
vector_us	7	6	42	49	-1.566064789
origin_data	6	4	24	36	0.207322465
comput_secur	2	1	2	4	2.30087148
engin_depart	7	4	28	49	0.433935211
frequent_item	4	2	8	16	1.754096972
http_github	3	3	9	9	0.527484226
increas_perform	3	3	9	9	0.527484226
occurr_document	6	6	36	36	-1.792677535
similar_cluster	2	2	4	4	1.30087148
studi_featur	5	5	25	25	-1.019290281
token_stem	6	5	30	36	-0.792677535
us_weight	2	1	2	4	2.30087148
word_reduc	6	6	36	36	-1.792677535
base_number	4	3	12	16	0.754096972
data_includ	6	5	30	36	-0.792677535
dataset_collect	4	3	12	16	0.754096972
find_word	9	8	72	81	-3.112839296
learn_train	7	7	49	49	-2.566064789
reduc_time	5	4	20	25	-0.019290281
weight_document	5	5	25	25	-1.019290281
word_collect	5	4	20	25	-0.019290281
corpu_train	1	1	1	1	2.074258734
learn_system	3	3	9	9	0.527484226
accuraci_classif	10	7	70	100	-1.88622655
algorithm_compar	5	4	20	25	-0.019290281

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
base_form	7	6	42	49	-1.566064789
contain_text	8	6	48	64	-1.339452043
dataset_experi	9	7	63	81	-2.112839296
pair_word	11	5	55	121	0.340386196
approach_combin	3	3	9	9	0.527484226
includ_word	8	6	48	64	-1.339452043
problem_text	4	4	16	16	-0.245903028
reduct_techniqu	6	5	30	36	-0.792677535
remov_punctuat	3	2	6	9	1.527484226
score_system	2	2	4	4	1.30087148
select_document	10	7	70	100	-1.88622655
type_featur	10	7	70	100	-1.88622655
us_model	4	2	8	16	1.754096972
mobil_phone	3	1	3	9	2.527484226
select_relev	4	4	16	16	-0.245903028
system_data	15	8	120	225	-1.753162819
gener_us	5	4	20	25	-0.019290281
order_extract	11	8	88	121	-2.659613804
perfor_manc	8	3	24	64	1.660547957
recal_recal	21	5	105	441	2.606513658
rule_extract	1	1	1	1	2.074258734
structur_text	8	4	32	64	0.660547957
word_train	2	2	4	4	1.30087148
combin_model	5	4	20	25	-0.019290281
data_classif	4	3	12	16	0.754096972
time_featur	3	3	9	9	0.527484226
gener_categor	2	2	4	4	1.30087148
model_term	8	6	48	64	-1.339452043
probabilist_latent	3	1	3	9	2.527484226
search_word	2	1	2	4	2.30087148
order_word	3	3	9	9	0.527484226
predict_class	5	4	20	25	-0.019290281
base_applic	8	5	40	64	-0.339452043
bay_classif	1	1	1	1	2.074258734
binari_classif	3	3	9	9	0.527484226
learn_inform	8	5	40	64	-0.339452043
note_comput	10	3	30	100	2.11377345
number_class	7	4	28	49	0.433935211

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
perform_inform	2	2	4	4	1.30087148
techniqu_find	8	8	64	64	-3.339452043
main_step	10	7	70	100	-1.88622655
make_difficult	5	5	25	25	-1.019290281
servic_servic	1	1	1	1	2.074258734
method_classif	4	3	12	16	0.754096972
model_latent	6	5	30	36	-0.792677535
model_process	6	6	36	36	-1.792677535
statist_measur	10	3	30	100	2.11377345
stem_method	8	5	40	64	-0.339452043
topic_gener	6	3	18	36	1.207322465
tradit_approach	4	3	12	16	0.754096972
data_format	8	6	48	64	-1.339452043
featur_term	3	3	9	9	0.527484226
posit_class	3	3	9	9	0.527484226
score_function	4	2	8	16	1.754096972
term_precis	4	4	16	16	-0.245903028
total_word	9	3	27	81	1.887160704
divid_number	1	1	1	1	2.074258734
present_model	1	1	1	1	2.074258734
word_group	2	2	4	4	1.30087148
approach_develop	3	3	9	9	0.527484226
compar_word	15	7	105	225	-0.753162819
find_optim	4	4	16	16	-0.245903028
further_improv	5	4	20	25	-0.019290281
probabl_word	9	3	27	81	1.887160704
proce_ing	6	2	12	36	2.207322465
data_form	4	4	16	16	-0.245903028
neg_sentiment	5	2	10	25	1.980709719
servic_orient	1	1	1	1	2.074258734
cluster_gener	5	5	25	25	-1.019290281
train_phase	2	2	4	4	1.30087148
cluster_mean	4	4	16	16	-0.245903028
document_set	1	1	1	1	2.074258734
file_file	3	3	9	9	0.527484226
inform_sourc	8	4	32	64	0.660547957
neighbor_algorithm	9	3	27	81	1.887160704
preprocess_document	6	6	36	36	-1.792677535

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
structur_inform	8	5	40	64	-0.339452043
us_approach	4	4	16	16	-0.245903028
dataset_evalu	5	5	25	25	-1.019290281
mine_pattern	8	3	24	64	1.660547957
model_user	2	1	2	4	2.30087148
model_vector	3	3	9	9	0.527484226
size_data	5	4	20	25	-0.019290281
struc_ture	11	4	44	121	1.340386196
calcul_number	8	8	64	64	-3.339452043
number_charact	9	6	54	81	-1.112839296
system_support	8	7	56	64	-2.339452043
us_combin	6	5	30	36	-0.792677535
user_interact	4	3	12	16	0.754096972
data_represent	9	5	45	81	-0.112839296
experi_evalu	2	2	4	4	1.30087148
gener_purpos	9	2	18	81	2.887160704
linguist_human	5	4	20	25	-0.019290281
tech_nologi	8	2	16	64	2.660547957
word_frequent	6	5	30	36	-0.792677535
automat_process	11	8	88	121	-2.659613804
remov_prefix	7	3	21	49	1.433935211
select_word	8	6	48	64	-1.339452043
us_naïv	1	1	1	1	2.074258734
correct_word	1	1	1	1	2.074258734
perform_poorli	6	1	6	36	3.207322465
type_type	4	3	12	16	0.754096972
retriev_perform	2	2	4	4	1.30087148
effect_featur	7	5	35	49	-0.566064789
data_gather	3	3	9	9	0.527484226
inform_filter	5	5	25	25	-1.019290281
overcom_problem	3	3	9	9	0.527484226
method_arab	1	1	1	1	2.074258734
reduc_size	3	3	9	9	0.527484226
stem_techniqu	6	4	24	36	0.207322465
us_document	6	5	30	36	-0.792677535
import_word	3	3	9	9	0.527484226
perform_featur	4	3	12	16	0.754096972
approach_classifi	8	5	40	64	-0.339452043

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
perform_document	1	1	1	1	2.074258734
algorithm_data	3	3	9	9	0.527484226
cluster_group	2	2	4	4	1.30087148
estim_probabl	3	2	6	9	1.527484226
given_topic	5	3	15	25	0.980709719
model_implement	3	3	9	9	0.527484226
order_achiev	4	4	16	16	-0.245903028
vector_model	4	3	12	16	0.754096972
inform_data	5	4	20	25	-0.019290281
total_document	4	4	16	16	-0.245903028
document_comput	11	9	99	121	-3.659613804
algorithm_test	6	5	30	36	-0.792677535
fuzzi_set	7	2	14	49	2.433935211
system_process	9	8	72	81	-3.112839296
term_semant	9	6	54	81	-1.112839296
token_part	4	3	12	16	0.754096972
train_train	4	3	12	16	0.754096972
tree_algorithm	6	4	24	36	0.207322465
detect_us	6	5	30	36	-0.792677535
help_identifi	6	5	30	36	-0.792677535
input_word	6	5	30	36	-0.792677535
contain_number	4	3	12	16	0.754096972
group_document	2	2	4	4	1.30087148
approach_analyz	4	4	16	16	-0.245903028
method_consid	1	1	1	1	2.074258734
document_user	5	5	25	25	-1.019290281
languag_base	7	5	35	49	-0.566064789
commun_engin	6	3	18	36	1.207322465
corpu_number	8	7	56	64	-2.339452043
perform_term	8	7	56	64	-2.339452043
collect_word	7	7	49	49	-2.566064789
detail_descript	8	5	40	64	-0.339452043
inform_us	8	8	64	64	-3.339452043
tree_classifi	6	3	18	36	1.207322465
word_exist	2	2	4	4	1.30087148
analysi_opinion	13	4	52	169	1.793611689
effect_us	4	3	12	16	0.754096972
method_measur	8	2	16	64	2.660547957

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
paramet_valu	6	4	24	36	0.207322465
supervis_unsupervis	6	5	30	36	-0.792677535
text_consid	8	7	56	64	-2.339452043
averag_valu	2	2	4	4	1.30087148
bay_theorem	2	2	4	4	1.30087148
evalu_classifi	2	2	4	4	1.30087148
pattern_gener	13	9	117	169	-3.206388311
perform_improv	7	5	35	49	-0.566064789
preprocess_data	2	2	4	4	1.30087148
test_system	1	1	1	1	2.074258734
word_search	9	6	54	81	-1.112839296
faculti_scienc	8	3	24	64	1.660547957
form_us	3	3	9	9	0.527484226
linguist_resourc	4	3	12	16	0.754096972
semant_network	7	3	21	49	1.433935211
variou_featur	6	4	24	36	0.207322465
written_text	2	2	4	4	1.30087148
catégori_word	10	8	80	100	-2.88622655
context_awar	4	4	16	16	-0.245903028
extract_tweet	3	2	6	9	1.527484226
order_logic	1	1	1	1	2.074258734
select_term	10	8	80	100	-2.88622655
simpl_word	5	4	20	25	-0.019290281
appear_frequent	2	2	4	4	1.30087148
method_select	2	2	4	4	1.30087148
modern_inform	6	6	36	36	-1.792677535
term_gener	4	2	8	16	1.754096972
evalu_evalu	2	2	4	4	1.30087148
method_improv	4	4	16	16	-0.245903028
model_defin	1	1	1	1	2.074258734
multinomi_distribut	6	3	18	36	1.207322465
size_train	8	4	32	64	0.660547957
specif_topic	8	3	24	64	1.660547957
approach_cluster	3	3	9	9	0.527484226
describ_detail	3	3	9	9	0.527484226
document_thu	7	7	49	49	-2.566064789
gram_model	2	2	4	4	1.30087148
train_time	3	1	3	9	2.527484226

<b>Theme</b>	<b>2014 Tot</b>	<b>2014 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
convert_word	4	4	16	16	-0.245903028
divid_total	2	2	4	4	1.30087148
improv_precis	6	2	12	36	2.207322465
document_order	5	3	15	25	0.980709719
gram_featur	7	6	42	49	-1.566064789
main_featur	1	1	1	1	2.074258734
mine_machin	8	6	48	64	-1.339452043
repr_sent	3	2	6	9	1.527484226
test_evalu	4	3	12	16	0.754096972
websit_http	2	2	4	4	1.30087148
calcul_frequenc	4	4	16	16	-0.245903028
comput_semant	7	5	35	49	-0.566064789
subset_featur	3	2	6	9	1.527484226
system_arab	7	3	21	49	1.433935211
algorithm_predict	2	2	4	4	1.30087148
gener_data	4	4	16	16	-0.245903028
mine_natur	4	3	12	16	0.754096972
multi_label	8	6	48	64	-1.339452043
node_graph	4	3	12	16	0.754096972
word_test	5	3	15	25	0.980709719
design_model	2	2	4	4	1.30087148
further_develop	10	4	40	100	1.11377345
model_construct	6	4	24	36	0.207322465
sampl_data	3	2	6	9	1.527484226
salton_bucklei	3	3	9	9	0.527484226
applic_develop	1	1	1	1	2.074258734
automat_document	8	3	24	64	1.660547957
document_avail	2	2	4	4	1.30087148
model_consid	3	3	9	9	0.527484226
stem_step	5	4	20	25	-0.019290281
arxiv_preprint	2	2	4	4	1.30087148
classifi_classif	7	5	35	49	-0.566064789
classifi_support	4	2	8	16	1.754096972
mean_document	4	4	16	16	-0.245903028
method_comput	11	2	22	121	3.340386196
technolog_issn	2	2	4	4	1.30087148
appear_time	3	2	6	9	1.527484226
auto_matic	5	4	20	25	-0.019290281

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
captur_semant	8	4	32	64	0.660547957
linguist_structur	8	3	24	64	1.660547957
perform_base	5	5	25	25	-1.019290281
word_refer	5	3	15	25	0.980709719
data_obtain	6	5	30	36	-0.792677535
describ_system	5	3	15	25	0.980709719
direct_graph	2	1	2	4	2.30087148
help_improv	3	3	9	9	0.527484226
linear_model	6	2	12	36	2.207322465
model_provid	7	6	42	49	-1.566064789
multipl_word	9	4	36	81	0.887160704
probabl_document	1	1	1	1	2.074258734
topic_interest	1	1	1	1	2.074258734
word_total	5	4	20	25	-0.019290281
accuraci_obtain	8	5	40	64	-0.339452043
class_classifi	3	1	3	9	2.527484226
current_state	5	3	15	25	0.980709719
experi_experi	1	1	1	1	2.074258734
mathemat_comput	5	3	15	25	0.980709719
measur_cosin	11	8	88	121	-2.659613804
messag_servic	3	2	6	9	1.527484226
similar_text	5	4	20	25	-0.019290281
achiev_good	6	5	30	36	-0.792677535
algorithm_term	5	4	20	25	-0.019290281
method_model	1	1	1	1	2.074258734
metric_evalu	5	4	20	25	-0.019290281
stemmer_arab	7	4	28	49	0.433935211
system_consid	7	5	35	49	-0.566064789
system_requir	3	3	9	9	0.527484226
tweet_collect	17	5	85	289	1.700062673
word_user	7	3	21	49	1.433935211
appli_cluster	2	2	4	4	1.30087148
learn_task	3	3	9	9	0.527484226
document_organ	1	1	1	1	2.074258734
measur_comput	4	3	12	16	0.754096972
term_given	3	2	6	9	1.527484226
user_find	3	3	9	9	0.527484226
bay_model	6	5	30	36	-0.792677535

<b>Theme</b>	<b>2014 Tot</b>	<b>2014 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
consid_term	6	5	30	36	-0.792677535
mcgraw_hill	5	5	25	25	-1.019290281
method_document	6	5	30	36	-0.792677535
model_cluster	2	2	4	4	1.30087148
retriev_data	4	4	16	16	-0.245903028
search_inform	7	4	28	49	0.433935211
basic_idea	2	2	4	4	1.30087148
blog_post	6	3	18	36	1.207322465
comput_survei	6	6	36	36	-1.792677535
deriv_word	5	3	15	25	0.980709719
main_contribut	7	4	28	49	0.433935211
estim_paramet	6	2	12	36	2.207322465
form_cluster	4	4	16	16	-0.245903028
method_name	1	1	1	1	2.074258734
model_techniqu	3	2	6	9	1.527484226
neural_inform	3	3	9	9	0.527484226
binari_classifi	2	2	4	4	1.30087148
charact_token	3	2	6	9	1.527484226
latent_variabl	2	1	2	4	2.30087148
system_comput	3	3	9	9	0.527484226
task_automat	8	6	48	64	-1.339452043
text_includ	8	8	64	64	-3.339452043
us_neural	3	1	3	9	2.527484226
algorithm_describ	6	6	36	36	-1.792677535
algorithm_method	9	8	72	81	-3.112839296
algorithm_requir	2	2	4	4	1.30087148
applic_us	1	1	1	1	2.074258734
calcul_score	2	2	4	4	1.30087148
featur_number	4	4	16	16	-0.245903028
inform_base	4	3	12	16	0.754096972
method_achiev	4	3	12	16	0.754096972
studi_focus	4	3	12	16	0.754096972
comput_program	8	5	40	64	-0.339452043
dataset_test	5	4	20	25	-0.019290281
identifi_emot	4	1	4	16	2.754096972
replac_word	2	2	4	4	1.30087148
statist_data	2	1	2	4	2.30087148
automat_detect	6	5	30	36	-0.792677535

<b>Theme</b>	<b>2014 Tot</b>	<b>2014 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
calcul_word	6	5	30	36	-0.792677535
commun_system	1	1	1	1	2.074258734
develop_tool	1	1	1	1	2.074258734
featur_classif	7	4	28	49	0.433935211
graphic_model	7	3	21	49	1.433935211
process_term	8	6	48	64	-1.339452043
semant_resourc	3	2	6	9	1.527484226
text_analyt	10	5	50	100	0.11377345
word_weight	4	3	12	16	0.754096972
match_match	1	1	1	1	2.074258734
valu_obtain	2	2	4	4	1.30087148
defin_term	2	2	4	4	1.30087148
us_maximum	4	4	16	16	-0.245903028
cluster_comput	2	2	4	4	1.30087148
space_word	3	1	3	9	2.527484226
token_document	4	4	16	16	-0.245903028
model_dataset	5	3	15	25	0.980709719
novel_approach	3	3	9	9	0.527484226
vocabulari_word	7	3	21	49	1.433935211
frequenc_measur	2	2	4	4	1.30087148
ground_truth	4	2	8	16	1.754096972
levelRepresent	12	2	24	144	3.566998942
process_select	4	4	16	16	-0.245903028
algorithm_automat	5	2	10	25	1.980709719
index_word	2	1	2	4	2.30087148
proc_sigir	8	5	40	64	-0.339452043
algorithm_achiev	3	1	3	9	2.527484226
appli_algorithm	6	5	30	36	-0.792677535
averag_length	5	4	20	25	-0.019290281
evalu_base	3	2	6	9	1.527484226
form_term	6	4	24	36	0.207322465
machin_intellig	2	2	4	4	1.30087148
mine_base	5	3	15	25	0.980709719
professor_comput	10	6	60	100	-0.88622655
techniqu_reduc	5	4	20	25	-0.019290281
us_tool	4	4	16	16	-0.245903028
vector_term	2	2	4	4	1.30087148
evalu_dataset	7	4	28	49	0.433935211

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
extract_semant	8	6	48	64	-1.339452043
process_machin	6	4	24	36	0.207322465
adject_noun	1	1	1	1	2.074258734
collect_process	8	5	40	64	-0.339452043
gradient_descent	9	4	36	81	0.887160704
inform_structur	6	5	30	36	-0.792677535
languag_world	4	3	12	16	0.754096972
learn_us	2	2	4	4	1.30087148
model_make	2	2	4	4	1.30087148
text_form	1	1	1	1	2.074258734
analysi_natur	4	3	12	16	0.754096972
complex_system	2	2	4	4	1.30087148
levenshtein_distanc	3	2	6	9	1.527484226
million_peopl	2	2	4	4	1.30087148
model_structur	5	2	10	25	1.980709719
remain_word	4	4	16	16	-0.245903028
search_data	3	3	9	9	0.527484226
approach_solv	3	3	9	9	0.527484226
document_convert	4	4	16	16	-0.245903028
extern_knowledg	2	2	4	4	1.30087148
appli_document	2	2	4	4	1.30087148
assign_categori	2	2	4	4	1.30087148
distribut_data	3	3	9	9	0.527484226
network_commun	2	2	4	4	1.30087148
tree_base	2	2	4	4	1.30087148
larger_number	2	2	4	4	1.30087148
novel_method	4	4	16	16	-0.245903028
preprint_arxiv	2	2	4	4	1.30087148
represent_vector	6	3	18	36	1.207322465
us_keyword	6	5	30	36	-0.792677535
data_classifi	6	5	30	36	-0.792677535
distribut_term	6	4	24	36	0.207322465
group_base	4	3	12	16	0.754096972
relev_user	2	2	4	4	1.30087148
summar_task	8	3	24	64	1.660547957
type_word	3	1	3	9	2.527484226
vector_weight	7	6	42	49	-1.566064789
weight_weight	6	5	30	36	-0.792677535

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
approach_method	3	2	6	9	1.527484226
column_repres	3	3	9	9	0.527484226
dept_comput	7	4	28	49	0.433935211
keyword_search	8	4	32	64	0.660547957
measur_word	6	5	30	36	-0.792677535
model_analysi	3	1	3	9	2.527484226
perform_comparison	6	5	30	36	-0.792677535
user_input	2	2	4	4	1.30087148
approach_gener	1	1	1	1	2.074258734
base_keyword	1	1	1	1	2.074258734
base_multi	6	2	12	36	2.207322465
base_score	8	3	24	64	1.660547957
base_valu	7	5	35	49	-0.566064789
data_size	3	2	6	9	1.527484226
data_social	3	3	9	9	0.527484226
perform_variou	5	3	15	25	0.980709719
reduc_comput	1	1	1	1	2.074258734
studi_us	3	3	9	9	0.527484226
us_measur	7	6	42	49	-1.566064789
word_input	4	4	16	16	-0.245903028
workshop_text	4	4	16	16	-0.245903028
accuraci_score	4	2	8	16	1.754096972
approach_identifi	6	3	18	36	1.207322465
base_queri	6	4	24	36	0.207322465
determin_word	6	4	24	36	0.207322465
maximum_valu	5	5	25	25	-1.019290281
model_creat	1	1	1	1	2.074258734
take_time	7	5	35	49	-0.566064789
us_number	3	3	9	9	0.527484226
user_us	1	1	1	1	2.074258734
averag_time	5	2	10	25	1.980709719
classifi_predict	5	2	10	25	1.980709719
knowledg_inform	5	5	25	25	-1.019290281
perform_stem	4	3	12	16	0.754096972
valu_given	6	4	24	36	0.207322465
word_replac	1	1	1	1	2.074258734
document_appear	1	1	1	1	2.074258734
kullback_leibler	1	1	1	1	2.074258734

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
number_distinct	6	5	30	36	-0.792677535
learn_autom	6	6	36	36	-1.792677535
requir_number	6	5	30	36	-0.792677535
becom_popular	2	2	4	4	1.30087148
process_call	4	4	16	16	-0.245903028
similar_featur	3	3	9	9	0.527484226
singl_term	2	2	4	4	1.30087148
term_calcul	3	3	9	9	0.527484226
term_topic	6	5	30	36	-0.792677535
type_document	5	3	15	25	0.980709719
appli_mathemat	4	3	12	16	0.754096972
creat_word	7	7	49	49	-2.566064789
decreas_number	5	3	15	25	0.980709719
master_degre	2	2	4	4	1.30087148
test_train	3	3	9	9	0.527484226
text_evalu	4	4	16	16	-0.245903028
cosin_angl	7	7	49	49	-2.566064789
evalu_cluster	3	1	3	9	2.527484226
evalu_lrec	7	5	35	49	-0.566064789
given_user	1	1	1	1	2.074258734
includ_step	7	6	42	49	-1.566064789
likelihood_estim	4	4	16	16	-0.245903028
mine_icdm	3	3	9	9	0.527484226
model_experi	1	1	1	1	2.074258734
optim_number	1	1	1	1	2.074258734
process_order	1	1	1	1	2.074258734
queri_queri	1	1	1	1	2.074258734
recent_studi	6	4	24	36	0.207322465
similar_concept	4	4	16	16	-0.245903028
strip_program	5	5	25	25	-1.019290281
classifi_emot	4	1	4	16	2.754096972
consid_word	5	4	20	25	-0.019290281
inform_featur	3	2	6	9	1.527484226
measur_combin	4	3	12	16	0.754096972
model_number	4	4	16	16	-0.245903028
refer_word	5	5	25	25	-1.019290281
techniqu_stem	2	2	4	4	1.30087148
word_letter	11	5	55	121	0.340386196

<b>Theme</b>	<b>2014 Tot</b>	<b>2014 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
approach_present	3	3	9	9	0.527484226
integr_data	1	1	1	1	2.074258734
method_data	2	2	4	4	1.30087148
model_present	4	3	12	16	0.754096972
multi_dimension	5	4	20	25	-0.019290281
select_select	3	3	9	9	0.527484226
system_abl	2	2	4	4	1.30087148
text_exampl	5	5	25	25	-1.019290281
base_function	3	3	9	9	0.527484226
develop_base	3	3	9	9	0.527484226
emot_analysi	1	1	1	1	2.074258734
mine_introduct	2	2	4	4	1.30087148
morpholog_syntact	6	4	24	36	0.207322465
score_evalu	1	1	1	1	2.074258734
servic_name	1	1	1	1	2.074258734
precis_rate	6	2	12	36	2.207322465
order_compar	1	1	1	1	2.074258734
similar_function	5	4	20	25	-0.019290281
step_algorithm	1	1	1	1	2.074258734
neg_emot	4	2	8	16	1.754096972
particular_categori	1	1	1	1	2.074258734
advanc_neural	3	3	9	9	0.527484226
cluster_form	6	6	36	36	-1.792677535
html_http	4	3	12	16	0.754096972
particular_document	7	5	35	49	-0.566064789
reduc_dimens	5	5	25	25	-1.019290281
stem_approach	4	4	16	16	-0.245903028
twitter_social	1	1	1	1	2.074258734
accuraci_text	2	2	4	4	1.30087148
learn_theori	2	2	4	4	1.30087148
select_appropri	5	4	20	25	-0.019290281
task_document	4	3	12	16	0.754096972
term_index	4	4	16	16	-0.245903028
text_model	1	1	1	1	2.074258734
time_frame	5	5	25	25	-1.019290281
analysi_determin	4	4	16	16	-0.245903028
classifi_class	4	2	8	16	1.754096972
creativ_common	1	1	1	1	2.074258734

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
lower_valu	3	2	6	9	1.527484226
match_algorithm	4	3	12	16	0.754096972
problem_data	2	1	2	4	2.30087148
techniqu_term	6	4	24	36	0.207322465
word_algorithm	6	5	30	36	-0.792677535
class_cluster	2	2	4	4	1.30087148
evalu_topic	4	1	4	16	2.754096972
process_describ	8	6	48	64	-1.339452043
system_inform	5	4	20	25	-0.019290281
tion_retriev	2	2	4	4	1.30087148
total_score	1	1	1	1	2.074258734
user_select	3	2	6	9	1.527484226
word_defin	7	6	42	49	-1.566064789
word_find	8	8	64	64	-3.339452043
collect_us	2	2	4	4	1.30087148
data_perform	2	2	4	4	1.30087148
dice_similar	2	2	4	4	1.30087148
formal_defin	4	4	16	16	-0.245903028
respons_time	5	3	15	25	0.980709719
techniqu_order	2	2	4	4	1.30087148
distribut_similar	2	2	4	4	1.30087148
probabl_term	1	1	1	1	2.074258734
document_assign	4	4	16	16	-0.245903028
leibler_diverg	1	1	1	1	2.074258734
bucklei_term	4	4	16	16	-0.245903028
categor_comput	8	7	56	64	-2.339452043
collect_dataset	3	3	9	9	0.527484226
introduct_modern	4	4	16	16	-0.245903028
keyword_arab	4	4	16	16	-0.245903028
search_us	2	2	4	4	1.30087148
size_document	3	3	9	9	0.527484226
system_page	1	1	1	1	2.074258734
time_document	2	2	4	4	1.30087148
charact_number	3	3	9	9	0.527484226
document_select	3	3	9	9	0.527484226
effect_method	5	4	20	25	-0.019290281
languag_complex	1	1	1	1	2.074258734
method_take	3	3	9	9	0.527484226

<b>Theme</b>	<b>2014 Tot</b>	<b>2014 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
signific_amount	2	2	4	4	1.30087148
analysi_classif	3	2	6	9	1.527484226
appli_comput	6	6	36	36	-1.792677535
document_obtain	5	4	20	25	-0.019290281
main_focu	6	6	36	36	-1.792677535
model_outperform	1	1	1	1	2.074258734
probabl_class	7	5	35	49	-0.566064789
represent_method	8	3	24	64	1.660547957
term_mean	4	4	16	16	-0.245903028
word_singl	2	2	4	4	1.30087148
algorithm_present	7	5	35	49	-0.566064789
approach_comput	3	3	9	9	0.527484226
corpu_includ	6	6	36	36	-1.792677535
data_analyz	4	4	16	16	-0.245903028
data_experi	6	6	36	36	-1.792677535
depend_word	5	4	20	25	-0.019290281
describ_method	7	6	42	49	-1.566064789
distribu_tion	6	3	18	36	1.207322465
frequenc_featur	4	4	16	16	-0.245903028
good_accuraci	2	2	4	4	1.30087148
human_behavior	2	2	4	4	1.30087148
lucen_apach	5	2	10	25	1.980709719
main_advantag	4	4	16	16	-0.245903028
saudi_arabia	1	1	1	1	2.074258734
tag_tag	2	2	4	4	1.30087148
us_automat	5	3	15	25	0.980709719
word_inform	5	5	25	25	-1.019290281
analysi_identifi	5	5	25	25	-1.019290281
common_attribut	4	2	8	16	1.754096972
exampl_tweet	1	1	1	1	2.074258734
model_find	2	2	4	4	1.30087148
normal_term	4	2	8	16	1.754096972
polar_text	1	1	1	1	2.074258734
preci_sion	1	1	1	1	2.074258734
system_includ	7	6	42	49	-1.566064789
text_therefor	4	4	16	16	-0.245903028
theori_applic	4	3	12	16	0.754096972
us_linguist	3	2	6	9	1.527484226

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
word_correspond	2	2	4	4	1.30087148
neg_train	1	1	1	1	2.074258734
cluster_hierarch	3	2	6	9	1.527484226
document_reduc	3	3	9	9	0.527484226
index_databas	2	1	2	4	2.30087148
stage_text	1	1	1	1	2.074258734
class_repres	1	1	1	1	2.074258734
cluster_evalu	2	1	2	4	2.30087148
document_includ	5	5	25	25	-1.019290281
experiment_studi	2	2	4	4	1.30087148
identifi_topic	3	3	9	9	0.527484226
social_interact	3	2	6	9	1.527484226
user_label	2	2	4	4	1.30087148
vector_similar	1	1	1	1	2.074258734
word_normal	4	4	16	16	-0.245903028
descend_order	4	4	16	16	-0.245903028
form_verb	3	3	9	9	0.527484226
semant_represent	6	2	12	36	2.207322465
stem_gener	3	3	9	9	0.527484226
stem_porter	3	2	6	9	1.527484226
term_contain	3	2	6	9	1.527484226
text_obtain	2	2	4	4	1.30087148
us_languag	4	2	8	16	1.754096972
us_queri	4	3	12	16	0.754096972
document_content	5	4	20	25	-0.019290281
document_increas	3	3	9	9	0.527484226
evalu_qualiti	1	1	1	1	2.074258734
filter_us	2	2	4	4	1.30087148
huge_number	5	5	25	25	-1.019290281
match_user	4	4	16	16	-0.245903028
remov_letter	8	3	24	64	1.660547957
step_preprocess	4	4	16	16	-0.245903028
weight_score	1	1	1	1	2.074258734
word_vocabulari	3	2	6	9	1.527484226
avail_abl	1	1	1	1	2.074258734
document_distribut	2	2	4	4	1.30087148
extract_task	2	2	4	4	1.30087148
imag_analysi	4	3	12	16	0.754096972

<b>Theme</b>	<b>2014 Tot</b>	<b>2014 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
languag_make	3	3	9	9	0.527484226
obtain_cluster	7	3	21	49	1.433935211
process_identifi	4	3	12	16	0.754096972
significantli_reduc	3	2	6	9	1.527484226
step_extract	6	5	30	36	-0.792677535
step_identifi	5	4	20	25	-0.019290281
system_term	4	4	16	16	-0.245903028
us_graph	6	3	18	36	1.207322465
us_knowledg	4	2	8	16	1.754096972
approach_machin	1	1	1	1	2.074258734
independ_assumpt	5	4	20	25	-0.019290281
method_mean	3	3	9	9	0.527484226
number_sampl	3	2	6	9	1.527484226
origin_dataset	2	1	2	4	2.30087148
problem_automat	4	4	16	16	-0.245903028
twitter_stream	7	4	28	49	0.433935211
user_system	2	2	4	4	1.30087148
data_distribut	2	2	4	4	1.30087148
document_call	4	4	16	16	-0.245903028
avail_document	2	2	4	4	1.30087148
calcul_distanc	3	3	9	9	0.527484226
input_train	3	3	9	9	0.527484226
base_emot	2	1	2	4	2.30087148
develop_evalu	4	4	16	16	-0.245903028
featur_evalu	1	1	1	1	2.074258734
linear_function	2	2	4	4	1.30087148
particular_domain	2	2	4	4	1.30087148
randomli_chosen	2	2	4	4	1.30087148
valu_measur	5	5	25	25	-1.019290281
algorithm_mine	3	2	6	9	1.527484226
analyz_tweet	2	2	4	4	1.30087148
imag_video	1	1	1	1	2.074258734
measur_find	5	3	15	25	0.980709719
number_retriev	1	1	1	1	2.074258734
process_automat	4	3	12	16	0.754096972
process_take	3	3	9	9	0.527484226
requir_user	2	2	4	4	1.30087148
rule_combin	2	2	4	4	1.30087148

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
signific_word	4	4	16	16	-0.245903028
appli_stem	3	2	6	9	1.527484226
applic_servic	7	2	14	49	2.433935211
base_structur	3	2	6	9	1.527484226
calcu_late	4	4	16	16	-0.245903028
correspond_sentenc	3	3	9	9	0.527484226
experi_text	4	4	16	16	-0.245903028
featur_calcul	3	1	3	9	2.527484226
interact_user	3	2	6	9	1.527484226
map_word	6	4	24	36	0.207322465
order_understand	1	1	1	1	2.074258734
search_retriev	3	3	9	9	0.527484226
token_remov	5	5	25	25	-1.019290281
us_gener	3	3	9	9	0.527484226
vector_train	2	2	4	4	1.30087148
weight_obtain	2	2	4	4	1.30087148
class_posit	2	2	4	4	1.30087148
commun_comput	1	1	1	1	2.074258734
consist_phase	2	1	2	4	2.30087148
correctli_identifi	7	6	42	49	-1.566064789
document_form	4	4	16	16	-0.245903028
experi_dataset	6	3	18	36	1.207322465
knowledg_resourc	3	2	6	9	1.527484226
languag_social	7	3	21	49	1.433935211
system_measur	4	4	16	16	-0.245903028
text_method	6	5	30	36	-0.792677535
word_chang	4	3	12	16	0.754096972
engin_issu	1	1	1	1	2.074258734
identifi_us	1	1	1	1	2.074258734
determin_number	3	3	9	9	0.527484226
normal_word	1	1	1	1	2.074258734
text_identifi	1	1	1	1	2.074258734
world_congress	2	2	4	4	1.30087148
comparison_method	5	4	20	25	-0.019290281
document_improv	2	1	2	4	2.30087148
precis_calcul	1	1	1	1	2.074258734
stem_document	2	2	4	4	1.30087148
centroid_cluster	3	3	9	9	0.527484226

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
data_approach	4	4	16	16	-0.245903028
indic_word	2	2	4	4	1.30087148
interest_user	4	4	16	16	-0.245903028
punctuat_remov	1	1	1	1	2.074258734
set_featur	3	2	6	9	1.527484226
twitter_facebook	3	2	6	9	1.527484226
variou_techniqu	2	2	4	4	1.30087148
word_ad	1	1	1	1	2.074258734
accu_raci	2	2	4	4	1.30087148
algorithm_accuraci	3	3	9	9	0.527484226
algorithm_consist	5	4	20	25	-0.019290281
algorithm_naiv	4	3	12	16	0.754096972
collect_collect	1	1	1	1	2.074258734
compar_us	1	1	1	1	2.074258734
comparison_document	3	3	9	9	0.527484226
comparison_precis	2	2	4	4	1.30087148
describ_process	5	4	20	25	-0.019290281
develop_develop	2	2	4	4	1.30087148
equal_length	2	2	4	4	1.30087148
featur_perform	3	3	9	9	0.527484226
frequenc_corpu	1	1	1	1	2.074258734
http_lucen	4	2	8	16	1.754096972
keyword_queri	3	3	9	9	0.527484226
measur_estim	1	1	1	1	2.074258734
model_take	4	4	16	16	-0.245903028
obtain_word	2	1	2	4	2.30087148
probabilist_classifi	2	1	2	4	2.30087148
process_activ	5	2	10	25	1.980709719
score_comput	2	2	4	4	1.30087148
step_select	8	6	48	64	-1.339452043
system_learn	4	3	12	16	0.754096972
term_relev	3	2	6	9	1.527484226
word_structur	1	1	1	1	2.074258734
word_type	5	3	15	25	0.980709719
algorithm_classif	4	4	16	16	-0.245903028
base_mean	4	4	16	16	-0.245903028
clean_data	1	1	1	1	2.074258734
document_creat	1	1	1	1	2.074258734

<b>Theme</b>	<b>2014 Tot</b>	<b>2014 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
document_remov	6	6	36	36	-1.792677535
extract_name	3	2	6	9	1.527484226
func_tion	1	1	1	1	2.074258734
issn_issn	2	2	4	4	1.30087148
matrix_term	4	3	12	16	0.754096972
meaning_inform	3	3	9	9	0.527484226
method_detect	1	1	1	1	2.074258734
output_process	3	1	3	9	2.527484226
system_avail	2	2	4	4	1.30087148
system_detect	3	1	3	9	2.527484226
text_sourc	1	1	1	1	2.074258734
time_base	3	2	6	9	1.527484226
remov_step	1	1	1	1	2.074258734
parent_node	3	2	6	9	1.527484226
perform_obtain	1	1	1	1	2.074258734
word_lead	4	3	12	16	0.754096972
appear_text	2	1	2	4	2.30087148
cluster_repres	3	2	6	9	1.527484226
inform_servic	1	1	1	1	2.074258734
predefin_class	1	1	1	1	2.074258734
applic_inform	2	2	4	4	1.30087148
becom_increasingli	2	1	2	4	2.30087148
classif_data	4	3	12	16	0.754096972
inform_social	3	2	6	9	1.527484226
lower_number	2	2	4	4	1.30087148
techniqu_featur	2	2	4	4	1.30087148
affix_word	1	1	1	1	2.074258734
classif_arab	4	2	8	16	1.754096972
dataset_avail	2	1	2	4	2.30087148
dataset_creat	2	2	4	4	1.30087148
featur_semant	4	3	12	16	0.754096972
function_similar	3	3	9	9	0.527484226
perform_step	4	4	16	16	-0.245903028
repres_singl	1	1	1	1	2.074258734
step_gener	3	3	9	9	0.527484226
time_number	2	1	2	4	2.30087148
token_us	2	2	4	4	1.30087148
vector_number	1	1	1	1	2.074258734

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
approach_pattern	5	3	15	25	0.980709719
contain_topic	4	4	16	16	-0.245903028
content_type	2	1	2	4	2.30087148
degre_similar	7	6	42	49	-1.566064789
form_inform	1	1	1	1	2.074258734
improv_us	1	1	1	1	2.074258734
inform_form	2	2	4	4	1.30087148
interest_pattern	6	4	24	36	0.207322465
model_produc	3	2	6	9	1.527484226
present_text	2	2	4	4	1.30087148
score_precis	2	2	4	4	1.30087148
stem_exampl	3	2	6	9	1.527484226
text_appli	2	1	2	4	2.30087148
valu_chosen	1	1	1	1	2.074258734
automat_emot	5	1	5	25	2.980709719
base_perform	4	4	16	16	-0.245903028
cluster_topic	3	3	9	9	0.527484226
contain_specif	1	1	1	1	2.074258734
data_describ	4	4	16	16	-0.245903028
data_estim	2	2	4	4	1.30087148
data_user	1	1	1	1	2.074258734
electron_commun	1	1	1	1	2.074258734
exist_techniqu	1	1	1	1	2.074258734
frequenc_text	3	2	6	9	1.527484226
languag_stem	3	3	9	9	0.527484226
method_topic	1	1	1	1	2.074258734
model_increas	1	1	1	1	2.074258734
object_base	2	2	4	4	1.30087148
produc_cluster	3	3	9	9	0.527484226
rela_tionship	4	3	12	16	0.754096972
signific_number	3	2	6	9	1.527484226
similar_semant	4	4	16	16	-0.245903028
system_creat	2	2	4	4	1.30087148
time_accuraci	1	1	1	1	2.074258734
topic_us	2	2	4	4	1.30087148
train_word	2	1	2	4	2.30087148
word_valu	3	2	6	9	1.527484226
semant_concept	1	1	1	1	2.074258734

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
languag_form	1	1	1	1	2.074258734
stemmer_compar	3	3	9	9	0.527484226
distribut_class	1	1	1	1	2.074258734
binari_valu	1	1	1	1	2.074258734
consid_number	4	3	12	16	0.754096972
document_therefor	4	4	16	16	-0.245903028
gener_train	4	4	16	16	-0.245903028
higher_weight	1	1	1	1	2.074258734
method_present	3	3	9	9	0.527484226
word_preposit	2	2	4	4	1.30087148
approach_select	2	2	4	4	1.30087148
assign_cluster	3	2	6	9	1.527484226
cluster_compar	2	2	4	4	1.30087148
form_form	2	1	2	4	2.30087148
grow_rapidli	2	2	4	4	1.30087148
matrix_contain	1	1	1	1	2.074258734
method_semant	3	2	6	9	1.527484226
term_identifi	1	1	1	1	2.074258734
text_present	1	1	1	1	2.074258734
topic_similar	2	2	4	4	1.30087148
vector_input	1	1	1	1	2.074258734
analysi_comput	3	3	9	9	0.527484226
analysi_problem	1	1	1	1	2.074258734
approach_compar	3	3	9	9	0.527484226
emerg_technolog	4	4	16	16	-0.245903028
exist_algorithm	4	3	12	16	0.754096972
graph_model	7	6	42	49	-1.566064789
luhn_automat	7	2	14	49	2.433935211
method_construct	6	4	24	36	0.207322465
order_measur	2	2	4	4	1.30087148
perform_fold	1	1	1	1	2.074258734
remov_nois	1	1	1	1	2.074258734
similar_approach	1	1	1	1	2.074258734
system_refer	2	2	4	4	1.30087148
tool_provid	5	3	15	25	0.980709719
transact_pattern	1	1	1	1	2.074258734
analysi_knowledg	2	2	4	4	1.30087148
base_appli	3	3	9	9	0.527484226

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
base_rank	2	2	4	4	1.30087148
classifi_term	2	1	2	4	2.30087148
crucial_role	1	1	1	1	2.074258734
featur_learn	3	3	9	9	0.527484226
field_data	3	3	9	9	0.527484226
function_defin	5	4	20	25	-0.019290281
gener_architectur	3	3	9	9	0.527484226
good_featur	1	1	1	1	2.074258734
lemmat_word	1	1	1	1	2.074258734
mathemat_scienc	1	1	1	1	2.074258734
media_content	2	1	2	4	2.30087148
model_machin	2	2	4	4	1.30087148
morpho_syntact	2	2	4	4	1.30087148
number_attribut	2	2	4	4	1.30087148
number_concept	6	3	18	36	1.207322465
perform_dataset	1	1	1	1	2.074258734
similar_group	7	5	35	49	-0.566064789
simpl_probabilist	1	1	1	1	2.074258734
solv_issu	3	2	6	9	1.527484226
split_text	3	2	6	9	1.527484226
step_find	5	5	25	25	-1.019290281
stochast_gradient	6	2	12	36	2.207322465
text_step	6	4	24	36	0.207322465
third_type	1	1	1	1	2.074258734
type_system	2	2	4	4	1.30087148
cluster_correspond	2	1	2	4	2.30087148
compar_origin	1	1	1	1	2.074258734
sequenc_model	2	1	2	4	2.30087148
rule_defin	1	1	1	1	2.074258734
correspond_featur	2	1	2	4	2.30087148
process_search	1	1	1	1	2.074258734
therefor_develop	2	2	4	4	1.30087148
word_indic	2	2	4	4	1.30087148
categori_us	3	3	9	9	0.527484226
classif_new	2	2	4	4	1.30087148
correspond_topic	3	3	9	9	0.527484226
dictionari_dictionari	2	2	4	4	1.30087148
document_normal	3	3	9	9	0.527484226

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
engin_retriev	2	2	4	4	1.30087148
inquiri_word	1	1	1	1	2.074258734
remov_arab	3	2	6	9	1.527484226
requir_addit	1	1	1	1	2.074258734
step_token	2	2	4	4	1.30087148
us_normal	1	1	1	1	2.074258734
alphabet_charact	2	1	2	4	2.30087148
base_implement	5	4	20	25	-0.019290281
base_pattern	1	1	1	1	2.074258734
base_probabl	2	2	4	4	1.30087148
case_text	2	2	4	4	1.30087148
charact_punctuat	4	3	12	16	0.754096972
engin_inform	2	2	4	4	1.30087148
extract_phrase	1	1	1	1	2.074258734
initi_step	2	2	4	4	1.30087148
measur_qualiti	2	2	4	4	1.30087148
method_effect	2	2	4	4	1.30087148
model_calcul	3	3	9	9	0.527484226
particular_case	2	2	4	4	1.30087148
rapid_develop	1	1	1	1	2.074258734
string_number	7	3	21	49	1.433935211
system_make	2	2	4	4	1.30087148
toulous_franc	4	3	12	16	0.754096972
us_resourc	2	2	4	4	1.30087148
valu_model	2	2	4	4	1.30087148
vector_length	2	1	2	4	2.30087148
word_porter	3	3	9	9	0.527484226
approach_found	1	1	1	1	2.074258734
call_term	2	2	4	4	1.30087148
classifi_decis	2	2	4	4	1.30087148
content_tweet	1	1	1	1	2.074258734
database_commun	3	3	9	9	0.527484226
document_specif	2	2	4	4	1.30087148
human_social	3	2	6	9	1.527484226
inform_analysi	2	2	4	4	1.30087148
linguist_volum	5	5	25	25	-1.019290281
method_case	3	3	9	9	0.527484226
model_thu	4	2	8	16	1.754096972

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
page_contain	4	3	12	16	0.754096972
partial_support	2	2	4	4	1.30087148
plai_crucial	1	1	1	1	2.074258734
problem_includ	3	3	9	9	0.527484226
scienc_softwar	2	2	4	4	1.30087148
step_approach	1	1	1	1	2.074258734
step_featur	1	1	1	1	2.074258734
studi_comput	2	2	4	4	1.30087148
system_capabl	2	2	4	4	1.30087148
system_project	1	1	1	1	2.074258734
techniqu_help	2	2	4	4	1.30087148
techniqu_perform	2	2	4	4	1.30087148
text_twitter	2	1	2	4	2.30087148
time_exampl	2	2	4	4	1.30087148
tool_gener	1	1	1	1	2.074258734
us_preprocess	1	1	1	1	2.074258734
vector_contain	1	1	1	1	2.074258734
document_phrase	1	1	1	1	2.074258734
text_vector	2	2	4	4	1.30087148
algorithm_given	2	1	2	4	2.30087148
method_word	3	3	9	9	0.527484226
problem_word	2	2	4	4	1.30087148
spend_time	1	1	1	1	2.074258734
state_model	1	1	1	1	2.074258734
combin_term	3	3	9	9	0.527484226
effici_search	2	1	2	4	2.30087148
enorm_amount	1	1	1	1	2.074258734
further_increas	4	4	16	16	-0.245903028
model_addit	2	2	4	4	1.30087148
model_requir	1	1	1	1	2.074258734
select_topic	1	1	1	1	2.074258734
term_search	3	2	6	9	1.527484226
test_compar	3	2	6	9	1.527484226
addit_word	4	3	12	16	0.754096972
analysi_applic	1	1	1	1	2.074258734
approach_reli	4	3	12	16	0.754096972
databas_search	3	2	6	9	1.527484226
elimin_stem	3	3	9	9	0.527484226

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
eval_uation	1	1	1	1	2.074258734
identifi_similar	3	2	6	9	1.527484226
knowledg_document	3	3	9	9	0.527484226
network_machin	1	1	1	1	2.074258734
split_data	4	3	12	16	0.754096972
steinbach_karypi	3	2	6	9	1.527484226
store_file	3	1	3	9	2.527484226
topic_exampl	3	3	9	9	0.527484226
user_data	1	1	1	1	2.074258734
valu_posit	1	1	1	1	2.074258734
accord_word	3	3	9	9	0.527484226
algorithm_determin	2	2	4	4	1.30087148
anger_fear	3	2	6	9	1.527484226
approach_consist	2	2	4	4	1.30087148
approach_outperform	1	1	1	1	2.074258734
candid_gener	1	1	1	1	2.074258734
choos_number	2	2	4	4	1.30087148
collect_period	3	3	9	9	0.527484226
compar_number	2	2	4	4	1.30087148
construct_graph	4	2	8	16	1.754096972
count_time	1	1	1	1	2.074258734
descrip_tion	1	1	1	1	2.074258734
design_algorithm	2	2	4	4	1.30087148
document_view	4	4	16	16	-0.245903028
extract_textual	1	1	1	1	2.074258734
featur_preprocess	1	1	1	1	2.074258734
filter_step	2	2	4	4	1.30087148
help_classifi	2	1	2	4	2.30087148
independ_given	2	2	4	4	1.30087148
knowledg_sourc	3	3	9	9	0.527484226
label_class	3	3	9	9	0.527484226
method_produc	4	4	16	16	-0.245903028
overal_score	1	1	1	1	2.074258734
process_human	4	4	16	16	-0.245903028
step_construct	3	3	9	9	0.527484226
strength_weak	1	1	1	1	2.074258734
test_purpos	2	2	4	4	1.30087148
us_extern	2	2	4	4	1.30087148

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
word_divid	2	2	4	4	1.30087148
word_system	2	2	4	4	1.30087148
topic_categor	1	1	1	1	2.074258734
consid_time	2	2	4	4	1.30087148
data_partit	2	2	4	4	1.30087148
exist_document	1	1	1	1	2.074258734
featur_name	1	1	1	1	2.074258734
iter_step	4	3	12	16	0.754096972
label_base	1	1	1	1	2.074258734
media_platform	2	2	4	4	1.30087148
method_keyword	2	2	4	4	1.30087148
base_frequent	2	2	4	4	1.30087148
cate_gori	1	1	1	1	2.074258734
comparison_baselin	1	1	1	1	2.074258734
comput_perform	3	3	9	9	0.527484226
consid_case	1	1	1	1	2.074258734
dataset_method	3	2	6	9	1.527484226
distribut_represent	3	1	3	9	2.527484226
introduc_concept	3	3	9	9	0.527484226
level_document	2	1	2	4	2.30087148
metric_text	2	2	4	4	1.30087148
queri_gener	2	2	4	4	1.30087148
support_grant	3	3	9	9	0.527484226
user_perform	1	1	1	1	2.074258734
variou_approach	1	1	1	1	2.074258734
accuraci_number	3	2	6	9	1.527484226
affect_user	1	1	1	1	2.074258734
analysi_emot	2	2	4	4	1.30087148
analysi_featur	1	1	1	1	2.074258734
analysi_order	1	1	1	1	2.074258734
averag_sentenc	4	1	4	16	2.754096972
categori_tweet	1	1	1	1	2.074258734
contain_singl	1	1	1	1	2.074258734
discoveri_databas	2	2	4	4	1.30087148
distanc_calcul	1	1	1	1	2.074258734
experi_featur	2	2	4	4	1.30087148
graph_structur	3	3	9	9	0.527484226
increas_precis	3	3	9	9	0.527484226

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
keyword_cluster	1	1	1	1	2.074258734
level_system	1	1	1	1	2.074258734
main_sourc	1	1	1	1	2.074258734
neg_affect	3	2	6	9	1.527484226
network_data	3	2	6	9	1.527484226
order_base	3	1	3	9	2.527484226
process_construct	2	2	4	4	1.30087148
sampl_test	1	1	1	1	2.074258734
step_build	1	1	1	1	2.074258734
us_exampl	2	2	4	4	1.30087148
user_give	1	1	1	1	2.074258734
vector_calcul	5	5	25	25	-1.019290281
word_retriev	2	1	2	4	2.30087148
written_java	1	1	1	1	2.074258734
ad_word	1	1	1	1	2.074258734
extern_sourc	2	2	4	4	1.30087148
featur_posit	1	1	1	1	2.074258734
overal_system	1	1	1	1	2.074258734
stem_languag	2	2	4	4	1.30087148
algorithm_consid	2	2	4	4	1.30087148
automat_creation	2	2	4	4	1.30087148
cluster_unsupervis	1	1	1	1	2.074258734
dataset_compar	1	1	1	1	2.074258734
describ_algorithm	1	1	1	1	2.074258734
effici_cluster	3	3	9	9	0.527484226
full_word	1	1	1	1	2.074258734
model_human	1	1	1	1	2.074258734
punctuat_stop	2	1	2	4	2.30087148
rang_valu	1	1	1	1	2.074258734
remov_frequent	2	2	4	4	1.30087148
sampl_word	1	1	1	1	2.074258734
time_text	2	1	2	4	2.30087148
word_affect	1	1	1	1	2.074258734
algorithm_obtain	2	2	4	4	1.30087148
approach_provid	1	1	1	1	2.074258734
calcul_step	1	1	1	1	2.074258734
difficult_languag	3	3	9	9	0.527484226
document_arab	2	2	4	4	1.30087148

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
equat_calcul	2	1	2	4	2.30087148
extract_variou	1	1	1	1	2.074258734
famili_member	1	1	1	1	2.074258734
index_base	4	2	8	16	1.754096972
indic_cluster	2	1	2	4	2.30087148
inform_becom	3	2	6	9	1.527484226
manual_extract	2	2	4	4	1.30087148
metric_base	3	1	3	9	2.527484226
miller_wordnet	3	3	9	9	0.527484226
perform_supervis	1	1	1	1	2.074258734
process_design	4	3	12	16	0.754096972
process_part	2	2	4	4	1.30087148
score_method	4	2	8	16	1.754096972
stream_text	3	2	6	9	1.527484226
system_conclus	1	1	1	1	2.074258734
test_split	2	2	4	4	1.30087148
topic_cover	2	2	4	4	1.30087148
uniqu_featur	2	2	4	4	1.30087148
user_send	3	3	9	9	0.527484226
predict_categor	1	1	1	1	2.074258734
annual_symposium	1	1	1	1	2.074258734
model_respect	1	1	1	1	2.074258734
analysi_time	1	1	1	1	2.074258734
approach_deal	1	1	1	1	2.074258734
base_natur	1	1	1	1	2.074258734
collect_user	1	1	1	1	2.074258734
creation_literatur	2	2	4	4	1.30087148
data_group	1	1	1	1	2.074258734
document_pars	3	3	9	9	0.527484226
exampl_queri	1	1	1	1	2.074258734
normal_us	2	2	4	4	1.30087148
topic_refer	1	1	1	1	2.074258734
complet_text	1	1	1	1	2.074258734
context_process	3	2	6	9	1.527484226
correl_topic	3	1	3	9	2.527484226
data_chang	2	2	4	4	1.30087148
help_peopl	3	2	6	9	1.527484226
inform_thu	3	3	9	9	0.527484226

Theme	2014 Tot	2014 Doc	XY	X^2	Distance
limit_word	2	2	4	4	1.30087148
method_exampl	1	1	1	1	2.074258734
mine_word	3	3	9	9	0.527484226
model_prove	2	2	4	4	1.30087148
model_singl	1	1	1	1	2.074258734
nois_data	2	2	4	4	1.30087148
perform_find	1	1	1	1	2.074258734
term_process	1	1	1	1	2.074258734
time_make	1	1	1	1	2.074258734
us_collect	1	1	1	1	2.074258734
us_determin	3	3	9	9	0.527484226
user_accord	1	1	1	1	2.074258734
valu_text	2	2	4	4	1.30087148
word_correl	1	1	1	1	2.074258734
mean_approach	1	1	1	1	2.074258734
current_version	1	1	1	1	2.074258734
martin_porter	1	1	1	1	2.074258734
obtain_relev	1	1	1	1	2.074258734
refer_mean	1	1	1	1	2.074258734
term_obtain	1	1	1	1	2.074258734
approach_discov	2	2	4	4	1.30087148
approach_estim	1	1	1	1	2.074258734
catégori_classif	1	1	1	1	2.074258734
classifi_built	1	1	1	1	2.074258734
classifi_simpl	2	2	4	4	1.30087148
data_initi	1	1	1	1	2.074258734
featur_input	1	1	1	1	2.074258734
function_determin	1	1	1	1	2.074258734
improv_document	2	2	4	4	1.30087148
measur_emot	1	1	1	1	2.074258734
preprocess_token	1	1	1	1	2.074258734
problem_lack	1	1	1	1	2.074258734
process_complet	2	2	4	4	1.30087148
provid_signific	1	1	1	1	2.074258734
select_group	1	1	1	1	2.074258734
system_stem	1	1	1	1	2.074258734
thousand_document	1	1	1	1	2.074258734
train_remain	2	2	4	4	1.30087148

<b>Theme</b>	<b>2014 Tot</b>	<b>2014 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
contain_user	1	1	1	1	2.074258734
email_address	1	1	1	1	2.074258734
account_order	2	2	4	4	1.30087148
accuraci_significantli	1	1	1	1	2.074258734
base_lexic	1	1	1	1	2.074258734
base_theori	1	1	1	1	2.074258734
becom_time	1	1	1	1	2.074258734
featur_task	1	1	1	1	2.074258734
limit_term	1	1	1	1	2.074258734
process_break	2	2	4	4	1.30087148
public_date	1	1	1	1	2.074258734
retriev_semant	2	2	4	4	1.30087148
space_number	1	1	1	1	2.074258734
studi_analysi	1	1	1	1	2.074258734
symposium_document	1	1	1	1	2.074258734
tree_approach	1	1	1	1	2.074258734
apach_core	1	1	1	1	2.074258734

## APPENDIX 5-J

This appendix contains the distance from trend calculations for 2015.

Column H	Column I
SUM x	18030.0
SUM Y	9622.0
SUM XY	209773
SUM X^2	693436
n	2202
a	2.404624137
b	0.239989886
Trend Formula	$Y = 2.40462413699097 + 0.239989886319794X$

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
machin_learn	165	40	6600	27225	2.00295538
text_mine	306	52	15912	93636	23.84152935
natur_languag	232	51	11832	53824	7.082277763
inform_retriev	174	42	7308	30276	2.162864357
data_mine	189	41	7749	35721	6.762712651
stop_word	109	39	4251	11881	-10.43647825
naiv_bay	138	24	3312	19044	11.52322845
text_classif	128	18	2304	16384	15.12332959
languag_process	150	46	6900	22500	-7.596892915
featur_select	139	20	2780	19321	15.76321834
text_document	124	34	4216	15376	-1.836629959
sentiment_analysi	80	14	1120	6400	7.603815043
neural_network	66	17	1122	4356	1.243956634
social_media	81	9	729	6561	12.84380493
precis_recal	68	19	1292	4624	-0.276063593
social_network	90	15	1350	8100	9.003713906
document_cluster	91	18	1638	8281	6.243703792
part_speech	73	22	1606	5329	-2.076114162
comput_linguist	86	24	2064	7396	-0.95624564

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
arab_text	103	9	927	10609	18.12358243
topic_model	21	7	147	441	0.44441175
term_frequenc	83	28	2324	6889	-5.676215298
text_categor	96	21	2016	9216	4.443653224
support_vector	43	15	645	1849	-2.275810751
vector_space	52	19	988	2704	-4.115901774
train_data	45	17	765	2025	-3.795830979
vector_machin	40	14	560	1600	-1.99578041
name_entiti	86	12	1032	7396	11.04375436
search_engin	52	24	1248	2704	-9.115901774
similar_measur	65	21	1365	4225	-2.996033252
document_frequenc	77	25	1925	5929	-4.116154616
featur_extract	71	15	1065	5041	4.443906066
posit_neg	44	15	660	1936	-2.035820865
base_approach	66	25	1650	4356	-6.756043366
term_weight	33	12	396	1089	-1.675709614
text_process	38	23	874	1444	-11.47576018
text_analysi	35	25	875	1225	-14.19572984
learn_algorithm	40	14	560	1600	-1.99578041
word_remov	49	28	1372	2401	-13.83587143
space_model	44	15	660	1936	-2.035820865
artifici_intellig	40	23	920	1600	-10.99578041
cross_valid	23	8	184	529	-0.075608478
arab_languag	48	11	528	2304	2.92413868
featur_vector	56	13	728	3136	2.844057771
stem_algorithm	43	21	903	1849	-8.275810751
cluster_algorithm	42	7	294	1764	5.484199362
word_document	39	21	819	1521	-9.235770297
train_test	22	9	198	484	-1.315598364
scienc_engin	37	13	481	1369	-1.715750069
number_word	30	17	510	900	-7.395679273
word_stem	47	29	1363	2209	-15.31585121
inform_extract	68	21	1428	4624	-2.276063593
decis_tree	29	11	319	841	-1.63566916
document_collect	52	19	988	2704	-4.115901774
semant_analysi	47	13	611	2209	0.684148794
softwar_engin	39	9	351	1521	2.764229703
document_document	24	13	312	576	-4.835618591

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
latent_semant	28	8	224	784	1.124340954
invers_document	44	17	748	1936	-4.035820865
retriev_system	36	11	396	1296	0.044260045
depart_comput	45	19	855	2025	-5.795830979
bay_classifi	35	13	455	1225	-2.195729842
test_data	13	7	91	169	-1.475507341
cosin_similar	32	12	384	1024	-1.915699501
document_term	47	21	987	2209	-7.315851206
data_process	40	16	640	1600	-3.99578041
data_set	23	12	276	529	-4.075608478
data_collect	26	14	364	676	-5.355638819
rule_base	31	14	434	961	-4.155689387
word_list	16	8	128	256	-1.755537682
train_model	27	8	216	729	0.884351068
keyword_extract	10	7	70	100	-2.195477
random_forest	4	2	8	16	1.364583682
base_method	27	12	324	729	-3.115648932
nearest_neighbor	11	5	55	121	0.044512887
latent_dirichlet	5	4	20	25	-0.395426431
stem_word	42	16	672	1764	-3.515800638
classif_algorithm	18	10	180	324	-3.275557909
porter_stemmer	9	8	72	81	-3.435466886
speech_tag	27	14	378	729	-5.115648932
mine_techniqu	54	17	918	2916	-1.635922002
knowledg_base	52	17	884	2704	-2.115901774
scienc_technolog	30	16	480	900	-6.395679273
electr_engin	5	3	15	25	0.604573569
supervis_learn	29	11	319	841	-1.63566916
semant_similar	27	7	189	729	1.884351068
model_base	16	10	160	256	-3.755537682
base_featur	9	5	45	81	-0.435466886
engin_comput	6	4	24	36	-0.155436545
light_stem	23	5	115	529	2.924391522
text_file	21	10	210	441	-2.55558825
cloud_comput	10	6	60	100	-1.195477
data_analysi	28	11	308	784	-1.875659046
document_contain	28	18	504	784	-8.875659046
dirichlet_alloc	5	4	20	25	-0.395426431

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
automat_text	26	12	312	676	-3.355638819
remov_stop	27	19	513	729	-10.11564893
engin_technolog	30	9	270	900	0.604320727
cluster_cluster	29	6	174	841	3.36433084
document_classif	38	11	418	1444	0.524239817
word_sentenc	21	10	210	441	-2.55558825
model_us	10	8	80	100	-3.195477
word_frequenc	10	7	70	100	-2.195477
languag_model	9	4	36	81	0.564533114
classif_us	23	12	276	529	-4.075608478
solv_problem	19	12	228	361	-5.035568023
system_us	32	15	480	1024	-4.915699501
recal_precis	33	13	429	1089	-2.675709614
learn_approach	16	10	160	256	-3.755537682
document_summar	14	7	98	196	-1.235517455
frequenc_word	14	12	168	196	-6.235517455
inform_scienc	23	16	368	529	-8.075608478
word_text	21	19	399	441	-11.55558825
frequenc_term	35	14	490	1225	-3.195729842
frequenc_invers	25	12	300	625	-3.595628705
improv_perform	20	11	220	400	-3.795578137
relev_document	16	7	112	256	-0.755537682
inform_process	24	20	480	576	-11.83561859
comput_applic	24	8	192	576	0.164381409
document_word	29	16	464	841	-6.63566916
extract_featur	25	9	225	625	-0.595628705
compar_studi	36	15	540	1296	-3.955739955
method_base	21	14	294	441	-6.55558825
select_method	18	5	90	324	1.724442091
recal_measur	25	10	250	625	-1.595628705
classif_accuraci	32	13	416	1024	-2.915699501
number_time	33	17	561	1089	-6.675709614
topic_topic	13	8	104	169	-2.475507341
learn_model	2	2	4	4	0.88460391
document_repres	13	7	91	169	-1.475507341
languag_text	16	13	208	256	-6.755537682
learn_techniqu	19	14	266	361	-7.035568023
cluster_method	16	7	112	256	-0.755537682

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
similar_document	27	14	378	729	-5.115648932
multi_document	7	3	21	49	1.084553341
base_model	14	8	112	196	-2.235517455
number_featur	26	10	260	676	-1.355638819
document_us	19	14	266	361	-7.035568023
knowledg_discoveri	45	22	990	2025	-8.795830979
word_appear	25	14	350	625	-5.595628705
word_featur	9	8	72	81	-3.435466886
document_vector	31	8	248	961	1.844310613
mean_word	18	11	198	324	-4.275557909
extract_text	17	13	221	289	-6.515547796
textual_data	15	12	180	225	-5.995527568
form_word	21	15	315	441	-7.55558825
model_inform	4	4	16	16	-0.635416318
repres_document	18	12	216	324	-5.275557909
model_model	6	6	36	36	-2.155436545
process_step	13	10	130	169	-4.475507341
extract_inform	28	11	308	784	-1.875659046
base_similar	31	11	341	961	-1.155689387
languag_technolog	17	11	187	289	-4.515547796
word_base	13	10	130	169	-4.475507341
comput_engin	28	10	280	784	-0.875659046
scienc_inform	19	6	114	361	0.964431977
right_reserv	27	5	135	729	3.884351068
opinion_mine	25	5	125	625	3.404371295
process_text	24	17	408	576	-8.835618591
evalu_metric	10	6	60	100	-1.195477
manag_system	11	4	44	121	1.044512887
classif_task	13	9	117	169	-3.475507341
document_number	22	11	242	484	-3.315598364
stem_process	24	14	336	576	-5.835618591
test_dataset	11	6	66	121	-0.955487113
document_represent	14	9	126	196	-3.235517455
noun_verb	18	13	234	324	-6.275557909
weight_term	16	9	144	256	-2.755537682
us_word	17	12	204	289	-5.515547796
amount_data	28	11	308	784	-1.875659046
word_model	17	7	119	289	-0.515547796

<b>Theme</b>	<b>2015 Tot</b>	<b>2015 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
document_matrix	7	3	21	49	1.084553341
number_topic	1	1	1	1	1.644614023
fold_cross	8	7	56	64	-2.675456772
similar_word	20	7	140	400	0.204421863
word_vector	5	4	20	25	-0.395426431
sentenc_document	26	6	156	676	2.644361181
featur_space	7	3	21	49	1.084553341
averag_precis	6	6	36	36	-2.155436545
term_base	36	12	432	1296	-0.955739955
mean_cluster	18	7	126	324	-0.275557909
logist_regress	12	4	48	144	1.284502773
term_extract	10	6	60	100	-1.195477
collect_document	21	13	273	441	-5.55558825
recal_score	10	5	50	100	-0.195477
us_data	13	12	156	169	-6.475507341
khoja_stemmer	20	4	80	400	3.204421863
text_content	33	8	264	1089	2.324290386
stock_market	13	3	39	169	2.524492659
number_cluster	13	7	91	169	-1.475507341
morpholog_analysi	18	6	108	324	0.724442091
pattern_recognit	26	10	260	676	-1.355638819
us_inform	21	13	273	441	-5.55558825
data_data	31	10	310	961	-0.155689387
contain_word	8	8	64	64	-3.675456772
classif_model	8	3	24	64	1.324543228
base_text	24	16	384	576	-7.835618591
step_step	25	10	250	625	-1.595628705
user_queri	19	12	228	361	-5.035568023
model_train	8	6	48	64	-1.675456772
train_document	14	6	84	196	-0.235517455
featur_featur	12	7	84	144	-1.715497227
index_term	28	12	336	784	-2.875659046
select_featur	12	6	72	144	-0.715497227
unstructur_data	20	8	160	400	-0.795578137
arab_document	14	6	84	196	-0.235517455
us_machin	6	5	30	36	-1.155436545
time_consum	10	7	70	100	-2.195477
algorithm_base	15	10	150	225	-3.995527568

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
analysi_retriev	4	4	16	16	-0.635416318
knowledg_manag	10	7	70	100	-2.195477
cluster_base	31	13	403	961	-3.155689387
cluster_document	26	7	182	676	1.644361181
learn_method	12	9	108	144	-3.715497227
improv_accuraci	24	13	312	576	-4.835618591
word_mean	25	15	375	625	-6.595628705
textual_content	53	5	265	2809	10.12408811
cluster_us	32	13	416	1024	-2.915699501
human_languag	20	15	300	400	-7.795578137
predict_model	10	3	30	100	1.804523
weight_scheme	23	13	299	529	-5.075608478
base_system	15	10	150	225	-3.995527568
intellig_system	8	5	40	64	-0.675456772
collect_data	11	8	88	121	-2.955487113
comput_inform	14	10	140	196	-4.235517455
mobil_devic	2	2	4	4	0.88460391
word_occurr	8	6	48	64	-1.675456772
document_text	13	10	130	169	-4.475507341
classifi_classifi	19	7	133	361	-0.035568023
cluster_techniqu	22	12	264	484	-4.315598364
term_occur	22	11	242	484	-3.315598364
gold_standard	9	2	18	81	2.564533114
queri_term	4	3	12	16	0.364583682
mean_algorithm	26	9	234	676	-0.355638819
world_wide	18	12	216	324	-5.275557909
text_preprocess	22	13	286	484	-5.315598364
system_develop	15	6	90	225	0.004472432
term_term	20	12	240	400	-4.795578137
develop_inform	12	10	120	144	-4.715497227
point_view	40	9	360	1600	3.00421959
word_root	15	11	165	225	-4.995527568
recommend_system	37	5	185	1369	6.284249931
maximum_entropi	14	8	112	196	-2.235517455
stem_stem	15	13	195	225	-6.995527568
error_rate	1	1	1	1	1.644614023
plai_role	23	10	230	529	-2.075608478
singl_word	15	9	135	225	-2.995527568

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
prefix_suffix	13	9	117	169	-3.475507341
imag_process	12	4	48	144	1.284502773
root_word	14	9	126	196	-3.235517455
document_retriev	11	8	88	121	-2.955487113
retriev_document	13	7	91	169	-1.475507341
spam_filter	6	2	12	36	1.844563455
occur_document	16	8	128	256	-1.755537682
increas_number	12	8	96	144	-2.715497227
system_base	7	5	35	49	-0.915446659
classif_method	12	4	48	144	1.284502773
comput_system	11	7	77	121	-1.955487113
inform_gain	20	9	180	400	-1.795578137
data_train	8	7	56	64	-2.675456772
document_similar	15	7	105	225	-0.995527568
us_text	18	11	198	324	-4.275557909
docu_ment	17	8	136	289	-1.515547796
sourc_text	20	6	120	400	1.204421863
full_text	18	7	126	324	-0.275557909
latent_topic	8	3	24	64	1.324543228
model_text	14	11	154	196	-5.235517455
advanc_comput	17	6	102	289	0.484452204
genet_algorithm	25	3	75	625	5.404371295
knowledg_data	12	11	132	144	-5.715497227
search_queri	6	4	24	36	-0.155436545
frequent_word	11	6	66	121	-0.955487113
inform_text	21	12	252	441	-4.55558825
term_appear	21	10	210	441	-2.55558825
class_label	7	6	42	49	-1.915446659
train_dataset	11	4	44	121	1.044512887
number_term	18	10	180	324	-3.275557909
probabl_distribut	3	1	3	9	2.124593796
preprocess_step	20	10	200	400	-2.795578137
porter_stem	14	10	140	196	-4.235517455
issn_onlin	20	5	100	400	2.204421863
linguist_featur	3	3	9	9	0.124593796
similar_score	13	7	91	169	-1.475507341
text_retriev	13	7	91	169	-1.475507341
evalu_us	19	8	152	361	-1.035568023

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
word_occur	11	8	88	121	-2.955487113
condit_probabl	19	7	133	361	-0.035568023
data_engin	19	13	247	361	-6.035568023
test_document	10	4	40	100	0.804523
process_manag	8	7	56	64	-2.675456772
exampl_word	15	12	180	225	-5.995527568
languag_resourc	13	9	117	169	-3.475507341
reduc_number	13	12	156	169	-6.475507341
base_term	8	3	24	64	1.324543228
approach_base	24	14	336	576	-5.835618591
base_classifi	9	6	54	81	-1.435466886
process_techniqu	20	15	300	400	-7.795578137
fals_posit	6	5	30	36	-1.155436545
frequent_pattern	16	5	80	256	1.244462318
comput_commun	20	8	160	400	-0.795578137
extract_keyword	7	5	35	49	-0.915446659
deep_learn	8	2	16	64	2.324543228
method_us	12	10	120	144	-4.715497227
phrase_base	26	8	208	676	0.644361181
document_corpu	8	6	48	64	-1.675456772
inform_knowledg	8	5	40	64	-0.675456772
classifi_text	13	7	91	169	-1.475507341
word_extract	14	7	98	196	-1.235517455
word_count	8	6	48	64	-1.675456772
retriev_inform	15	9	135	225	-2.995527568
list_word	6	4	24	36	-0.155436545
structur_data	30	10	300	900	-0.395679273
input_data	10	6	60	100	-1.195477
appear_document	8	6	48	64	-1.675456772
train_classifi	8	6	48	64	-1.675456772
sentenc_sentenc	11	6	66	121	-0.955487113
classifi_us	7	6	42	49	-1.915446659
text_us	15	10	150	225	-3.995527568
combin_featur	2	1	2	4	1.88460391
classifi_train	5	4	20	25	-0.395426431
approach_us	8	7	56	64	-2.675456772
document_queri	5	2	10	25	1.604573569
classif_problem	6	3	18	36	0.844563455

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
object_function	11	2	22	121	3.044512887
text_corpu	5	3	15	25	0.604573569
process_inform	29	21	609	841	-11.63566916
document_base	18	10	180	324	-3.275557909
infor_mation	23	5	115	529	2.924391522
level_featur	28	1	28	784	8.124340954
system_perform	5	4	20	25	-0.395426431
program_languag	3	2	6	9	1.124593796
system_applic	9	6	54	81	-1.435466886
queri_expans	1	1	1	1	1.644614023
word_order	12	11	132	144	-5.715497227
algorithm_algorithm	16	12	192	256	-5.755537682
text_base	8	4	32	64	0.324543228
pattern_mine	32	3	96	1024	7.084300499
issn_volum	25	7	175	625	1.404371295
remov_stem	18	13	234	324	-6.275557909
evalu_measur	6	5	30	36	-1.155436545
artifici_neural	18	5	90	324	1.724442091
document_featur	12	6	72	144	-0.715497227
view_project	14	8	112	196	-2.235517455
model_evalu	5	3	15	25	0.604573569
media_text	24	1	24	576	7.164381409
euclidean_distanc	20	9	180	400	-1.795578137
contain_term	13	8	104	169	-2.475507341
algorithm_perform	11	8	88	121	-2.955487113
extract_us	17	11	187	289	-4.515547796
colleg_engin	18	6	108	324	0.724442091
build_model	3	3	9	9	0.124593796
linguist_analysi	44	3	132	1936	9.964179135
engin_scien	17	5	85	289	1.484452204
contain_document	16	8	128	256	-1.755537682
singl_document	8	4	32	64	0.324543228
data_structur	19	7	133	361	-0.035568023
system_design	13	12	156	169	-6.475507341
soft_comput	21	4	84	441	3.44441175
volum_number	21	7	147	441	0.44441175
relev_inform	28	17	476	784	-7.875659046
process_document	18	9	162	324	-2.275557909

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
text_featur	14	8	112	196	-2.235517455
cluster_process	15	4	60	225	2.004472432
word_us	8	5	40	64	-0.675456772
classif_process	22	4	88	484	3.684401636
word_term	15	14	210	225	-7.995527568
perform_test	3	3	9	9	0.124593796
input_output	15	6	90	225	0.004472432
user_request	16	14	224	256	-7.755537682
word_embed	1	1	1	1	1.644614023
random_field	8	2	16	64	2.324543228
featur_base	9	5	45	81	-0.435466886
public_http	11	11	121	121	-5.955487113
word_topic	10	5	50	100	-0.195477
number_iter	12	1	12	144	4.284502773
unigram_bigram	10	5	50	100	-0.195477
allow_user	15	10	150	225	-3.995527568
design_implement	14	10	140	196	-4.235517455
content_base	9	4	36	81	0.564533114
semant_index	11	5	55	121	0.044512887
cluster_text	15	5	75	225	1.004472432
mathemat_model	3	3	9	9	0.124593796
document_process	12	5	60	144	0.284502773
algorithm_us	6	5	30	36	-1.155436545
period_time	19	8	152	361	-1.035568023
word_sens	17	8	136	289	-1.515547796
content_page	11	11	121	121	-5.955487113
wide_rang	10	9	90	100	-4.195477
comput_time	28	5	140	784	4.124340954
autom_text	11	8	88	121	-2.955487113
document_topic	3	2	6	9	1.124593796
syntact_semant	10	4	40	100	0.804523
method_text	17	11	187	289	-4.515547796
unsupervis_learn	15	11	165	225	-4.995527568
discoveri_data	26	15	390	676	-6.355638819
informa_tion	15	2	30	225	4.004472432
data_text	14	12	168	196	-6.235517455
topic_document	4	4	16	16	-0.635416318
emot_recognit	1	1	1	1	1.644614023

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
perform_us	8	8	64	64	-3.675456772
base_word	8	7	56	64	-2.675456772
vector_represent	1	1	1	1	1.644614023
us_featur	10	10	100	100	-5.195477
measur_similar	17	11	187	289	-4.515547796
corpu_base	11	9	99	121	-3.955487113
text_word	10	8	80	100	-3.195477
graph_base	9	5	45	81	-0.435466886
semant_featur	19	5	95	361	1.964431977
confus_matrix	10	4	40	100	0.804523
emot_classif	5	1	5	25	2.604573569
network_analysi	10	6	60	100	-1.195477
unstructur_text	15	7	105	225	-0.995527568
origin_document	20	7	140	400	0.204421863
proc_conf	10	7	70	100	-2.195477
sentenc_word	5	5	25	25	-1.395426431
distanc_measur	20	12	240	400	-4.795578137
berlin_heidelberg	7	5	35	49	-0.915446659
measur_precis	6	4	24	36	-0.155436545
similar_sentenc	13	7	91	169	-1.475507341
represent_document	17	9	153	289	-2.515547796
train_corpu	5	4	20	25	-0.395426431
uniqu_word	6	4	24	36	-0.155436545
data_model	36	7	252	1296	4.044260045
hierarch_cluster	16	6	96	256	0.244462318
probabilist_model	8	8	64	64	-3.675456772
evalu_perform	13	9	117	169	-3.475507341
model_perform	3	3	9	9	0.124593796
word_level	6	4	24	36	-0.155436545
pattern_base	17	5	85	289	1.484452204
classif_techniqu	13	3	39	169	2.524492659
calcul_us	7	6	42	49	-1.915446659
data_sourc	17	4	68	289	2.484452204
occurr_word	7	6	42	49	-1.915446659
commun_technolog	3	3	9	9	0.124593796
stem_arab	12	6	72	144	-0.715497227
inform_commun	4	4	16	16	-0.635416318
taken_account	16	4	64	256	2.244462318

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
fals_neg	6	5	30	36	-1.155436545
tweet_contain	4	3	12	16	0.364583682
occur_term	9	7	63	81	-2.435466886
base_cluster	17	7	119	289	-0.515547796
reduc_dimension	14	10	140	196	-4.235517455
system_evalu	12	10	120	144	-4.715497227
word_given	2	2	4	4	0.88460391
mine_text	19	13	247	361	-6.035568023
dataset_dataset	16	7	112	256	-0.755537682
process_time	2	2	4	4	0.88460391
time_period	23	4	92	529	3.924391522
automat_extract	16	11	176	256	-4.755537682
dataset_consist	10	6	60	100	-1.195477
file_contain	9	5	45	81	-0.435466886
test_perform	3	3	9	9	0.124593796
share_task	4	3	12	16	0.364583682
document_train	19	6	114	361	0.964431977
word_cluster	7	4	28	49	0.084553341
user_gener	8	4	32	64	0.324543228
base_semant	8	6	48	64	-1.675456772
statist_analysi	7	6	42	49	-1.915446659
transact_knowledg	10	9	90	100	-4.195477
model_built	7	4	28	49	0.084553341
twitter_user	6	3	18	36	0.844563455
model_document	13	9	117	169	-3.475507341
retriev_relev	8	5	40	64	-0.675456772
gram_gram	11	5	55	121	0.044512887
speech_recognit	4	3	12	16	0.364583682
linear_regress	1	1	1	1	1.644614023
data_point	12	7	84	144	-1.715497227
common_word	7	5	35	49	-0.915446659
signal_process	3	3	9	9	0.124593796
calcul_similar	6	5	30	36	-1.155436545
system_system	13	9	117	169	-3.475507341
model_data	6	4	24	36	-0.155436545
standard_arab	1	1	1	1	1.644614023
perform_system	14	6	84	196	-0.235517455
valu_calcul	9	8	72	81	-3.435466886

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
cluster_similar	17	11	187	289	-4.515547796
classif_text	8	6	48	64	-1.675456772
frequenc_document	8	7	56	64	-2.675456772
perform_evalu	6	5	30	36	-1.155436545
precis_measur	7	5	35	49	-0.915446659
algorithm_appli	14	11	154	196	-5.235517455
text_classifi	9	6	54	81	-1.435466886
model_predict	5	4	20	25	-0.395426431
analysi_method	9	3	27	81	1.564533114
algo_rithm	20	7	140	400	0.204421863
distribut_topic	4	2	8	16	1.364583682
classifi_document	16	14	224	256	-7.755537682
text_collect	21	8	168	441	-0.55558825
extract_term	4	4	16	16	-0.635416318
repres_vector	5	5	25	25	-1.395426431
word_categori	24	5	120	576	3.164381409
accuraci_precis	7	5	35	49	-0.915446659
punctuat_mark	12	11	132	144	-5.715497227
test_set	3	2	6	9	1.124593796
data_extract	9	5	45	81	-0.435466886
comput_technolog	5	4	20	25	-0.395426431
word_represent	12	7	84	144	-1.715497227
tabl_perform	2	2	4	4	0.88460391
neg_exampl	2	2	4	4	0.88460391
featur_word	9	7	63	81	-2.435466886
rule_mine	20	7	140	400	0.204421863
test_test	2	2	4	4	0.88460391
us_porter	5	4	20	25	-0.395426431
content_document	21	11	231	441	-3.55558825
word_gener	9	9	81	81	-4.435466886
document_model	9	1	9	81	3.564533114
gener_word	6	6	36	36	-2.155436545
featur_valu	3	2	6	9	1.124593796
highest_accuraci	2	2	4	4	0.88460391
mine_method	17	7	119	289	-0.515547796
develop_model	7	5	35	49	-0.915446659
lexic_databas	11	5	55	121	0.044512887
regress_model	4	3	12	16	0.364583682

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
tweet_user	3	1	3	9	2.124593796
class_class	5	5	25	25	-1.395426431
classif_cluster	7	6	42	49	-1.915446659
featur_text	12	10	120	144	-4.715497227
stem_stop	4	4	16	16	-0.635416318
process_system	9	8	72	81	-3.435466886
process_extract	14	10	140	196	-4.235517455
develop_system	8	5	40	64	-0.675456772
implement_us	5	4	20	25	-0.395426431
request_enhanc	11	11	121	121	-5.955487113
dataset_contain	12	9	108	144	-3.715497227
extract_word	5	4	20	25	-0.395426431
model_featur	2	2	4	4	0.88460391
comput_vision	1	1	1	1	1.644614023
us_classifi	2	2	4	4	0.88460391
train_exampl	3	3	9	9	0.124593796
evalu_system	4	3	12	16	0.364583682
word_contain	4	3	12	16	0.364583682
method_appli	1	1	1	1	1.644614023
extract_method	11	8	88	121	-2.955487113
token_token	8	5	40	64	-0.675456772
repres_text	3	2	6	9	1.124593796
retriev_text	14	13	182	196	-7.235517455
discuss_stat	11	11	121	121	-5.955487113
enhanc_download	11	11	121	121	-5.955487113
public_stat	11	11	121	121	-5.955487113
view_public	11	11	121	121	-5.955487113
word_dictionari	4	2	8	16	1.364583682
cluster_number	5	3	15	25	0.604573569
word_repres	13	11	143	169	-5.475507341
correl_coeffici	6	2	12	36	1.844563455
statist_machin	11	7	77	121	-1.955487113
porter_algorithm	7	7	49	49	-2.915446659
twitter_data	10	3	30	100	1.804523
mine_algorithm	11	6	66	121	-0.955487113
extract_document	9	6	54	81	-1.435466886
sentenc_text	6	4	24	36	-0.155436545
semant_relationship	10	2	20	100	2.804523

<b>Theme</b>	<b>2015 Tot</b>	<b>2015 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
techniqu_text	14	11	154	196	-5.235517455
make_process	12	7	84	144	-1.715497227
human_resourc	8	2	16	64	2.324543228
qualiti_cluster	12	5	60	144	0.284502773
relev_featur	11	4	44	121	1.044512887
manual_label	6	4	24	36	-0.155436545
represent_model	7	7	49	49	-2.915446659
word_consid	4	4	16	16	-0.635416318
publiccli_avail	4	3	12	16	0.364583682
automat_index	3	3	9	9	0.124593796
springer_verlag	10	6	60	100	-1.195477
distribut_word	4	4	16	16	-0.635416318
keyword_text	10	10	100	100	-5.195477
word_similar	11	5	55	121	0.044512887
root_stem	20	7	140	400	0.204421863
measur_accuraci	4	3	12	16	0.364583682
cluster_approach	9	2	18	81	2.564533114
classif_approach	7	6	42	49	-1.915446659
interest_includ	7	3	21	49	1.084553341
inform_document	10	9	90	100	-4.195477
mine_inform	14	10	140	196	-4.235517455
document_index	6	4	24	36	-0.155436545
featur_document	9	6	54	81	-1.435466886
model_repres	8	5	40	64	-0.675456772
neg_word	15	4	60	225	2.004472432
sequenc_word	10	9	90	100	-4.195477
perform_model	2	2	4	4	0.88460391
sens_disambigu	15	10	150	225	-3.995527568
data_base	11	8	88	121	-2.955487113
model_select	2	2	4	4	0.88460391
search_space	6	5	30	36	-1.155436545
tweet_tweet	3	3	9	9	0.124593796
predict_stock	2	2	4	4	0.88460391
classifi_base	7	4	28	49	0.084553341
select_text	13	7	91	169	-1.475507341
bay_algorithm	9	5	45	81	-0.435466886
represent_text	14	11	154	196	-5.235517455
resourc_evalu	6	5	30	36	-1.155436545

<b>Theme</b>	<b>2015 Tot</b>	<b>2015 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
dimension_space	6	6	36	36	-2.155436545
main_idea	6	6	36	36	-2.155436545
tree_structur	5	4	20	25	-0.395426431
algorithm_cluster	18	11	198	324	-4.275557909
word_stop	7	5	35	49	-0.915446659
measur_measur	11	9	99	121	-3.955487113
extract_sentenc	6	4	24	36	-0.155436545
problem_solv	6	6	36	36	-2.155436545
word_corpu	2	2	4	4	0.88460391
word_found	10	10	100	100	-5.195477
base_search	6	5	30	36	-1.155436545
data_store	12	5	60	144	0.284502773
neg_neutral	9	3	27	81	1.564533114
issu_march	23	3	69	529	4.924391522
search_algorithm	6	3	18	36	0.844563455
recal_valu	4	1	4	16	2.364583682
techniqu_base	14	8	112	196	-2.235517455
data_preprocess	7	7	49	49	-2.915446659
method_perform	9	7	63	81	-2.435466886
obtain_us	4	3	12	16	0.364583682
statist_model	4	3	12	16	0.364583682
accuraci_rate	15	1	15	225	5.004472432
textual_inform	9	4	36	81	0.564533114
cluster_data	11	6	66	121	-0.955487113
test_collect	7	2	14	49	2.084553341
semant_inform	7	6	42	49	-1.915446659
assist_professor	5	5	25	25	-1.395426431
weight_word	8	4	32	64	0.324543228
bayesian_classifi	8	4	32	64	0.324543228
given_text	6	4	24	36	-0.155436545
word_filter	4	4	16	16	-0.635416318
content_word	7	6	42	49	-1.915446659
execut_time	16	1	16	256	5.244462318
highest_score	4	2	8	16	1.364583682
repres_number	8	5	40	64	-0.675456772
analyz_data	8	4	32	64	0.324543228
model_gener	3	3	9	9	0.124593796
repres_word	8	6	48	64	-1.675456772

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
languag_word	7	5	35	49	-0.915446659
topic_word	9	4	36	81	0.564533114
represent_word	7	6	42	49	-1.915446659
tweet_us	5	3	15	25	0.604573569
base_algorithm	7	5	35	49	-0.915446659
model_paramet	2	2	4	4	0.88460391
document_sentenc	8	3	24	64	1.324543228
content_text	10	8	80	100	-3.195477
method_automat	6	6	36	36	-2.155436545
user_user	3	3	9	9	0.124593796
further_process	8	7	56	64	-2.675456772
system_implement	9	7	63	81	-2.435466886
process_perform	5	5	25	25	-1.395426431
springer_berlin	4	4	16	16	-0.635416318
accuraci_us	7	6	42	49	-1.915446659
technolog_comput	14	5	70	196	0.764482545
volum_page	10	5	50	100	-0.195477
featur_gener	1	1	1	1	1.644614023
perform_measur	4	3	12	16	0.364583682
base_analysi	4	4	16	16	-0.635416318
amount_inform	10	5	50	100	-0.195477
document_level	9	4	36	81	0.564533114
input_document	7	5	35	49	-0.915446659
sentenc_base	9	5	45	81	-0.435466886
mine_applic	10	10	100	100	-5.195477
valu_term	5	4	20	25	-0.395426431
word_cloud	11	2	22	121	3.044512887
root_form	4	4	16	16	-0.635416318
improv_qualiti	3	2	6	9	1.124593796
societi_inform	9	9	81	81	-4.435466886
us_algorithm	7	7	49	49	-2.915446659
model_develop	2	2	4	4	0.88460391
previou_studi	5	3	15	25	0.604573569
posit_word	15	10	150	225	-3.995527568
text_contain	2	1	2	4	1.88460391
detect_system	3	3	9	9	0.124593796
charact_recognit	4	1	4	16	2.364583682
model_test	8	6	48	64	-1.675456772

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
frequent_itemset	2	2	4	4	0.88460391
measur_perform	1	1	1	1	1.644614023
document_calcul	11	9	99	121	-3.955487113
gibb_sampl	4	2	8	16	1.364583682
solut_problem	6	6	36	36	-2.155436545
avail_onlin	5	4	20	25	-0.395426431
weight_assign	8	3	24	64	1.324543228
model_topic	5	5	25	25	-1.395426431
measur_text	9	8	72	81	-3.435466886
help_user	5	4	20	25	-0.395426431
cluster_perform	5	4	20	25	-0.395426431
rank_document	4	4	16	16	-0.635416318
train_sampl	3	2	6	9	1.124593796
perform_experi	5	4	20	25	-0.395426431
previou_step	9	4	36	81	0.564533114
step_process	9	7	63	81	-2.435466886
time_complex	13	4	52	169	1.524492659
number_text	3	3	9	9	0.124593796
us_techniqu	8	7	56	64	-2.675456772
find_similar	7	6	42	49	-1.915446659
correctli_classifi	5	4	20	25	-0.395426431
word_process	8	7	56	64	-2.675456772
languag_arab	5	2	10	25	1.604573569
type_data	9	4	36	81	0.564533114
data_avail	16	7	112	256	-0.755537682
mine_data	9	6	54	81	-1.435466886
number_user	1	1	1	1	1.644614023
extract_system	9	4	36	81	0.564533114
dimension_vector	3	3	9	9	0.124593796
learn_text	5	4	20	25	-0.395426431
techniqu_appli	7	6	42	49	-1.915446659
semant_mean	4	3	12	16	0.364583682
similar_valu	2	2	4	4	0.88460391
charact_word	5	3	15	25	0.604573569
cluster_centroid	1	1	1	1	1.644614023
function_word	4	4	16	16	-0.635416318
user_search	4	4	16	16	-0.635416318
word_number	6	6	36	36	-2.155436545

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
order_reduc	9	8	72	81	-3.435466886
degre_comput	6	3	18	36	0.844563455
dimension_data	12	9	108	144	-3.715497227
exist_method	5	4	20	25	-0.395426431
extract_data	10	7	70	100	-2.195477
vector_word	4	4	16	16	-0.635416318
knowledg_engin	7	7	49	49	-2.915446659
scienc_depart	12	5	60	144	0.284502773
string_match	28	4	112	784	5.124340954
main_problem	11	6	66	121	-0.955487113
model_classifi	2	2	4	4	0.88460391
measur_us	2	2	4	4	0.88460391
origin_text	11	6	66	121	-0.955487113
statist_inform	3	3	9	9	0.124593796
measur_evalu	12	7	84	144	-1.715497227
find_relev	10	7	70	100	-2.195477
arab_corpu	10	5	50	100	-0.195477
system_architectur	10	7	70	100	-2.195477
assign_weight	11	7	77	121	-1.955487113
mean_text	4	4	16	16	-0.635416318
addit_featur	1	1	1	1	1.644614023
topic_base	2	2	4	4	0.88460391
weight_averag	6	5	30	36	-1.155436545
word_token	8	6	48	64	-1.675456772
group_group	6	2	12	36	1.844563455
process_model	4	2	8	16	1.364583682
score_score	3	3	9	9	0.124593796
preprocess_text	3	3	9	9	0.124593796
algorithm_document	13	8	104	169	-2.475507341
classifi_perform	5	4	20	25	-0.395426431
word_semant	6	5	30	36	-1.155436545
analysi_document	12	7	84	144	-1.715497227
us_term	6	6	36	36	-2.155436545
combin_word	7	5	35	49	-0.915446659
network_base	7	4	28	49	0.084553341
time_term	14	11	154	196	-5.235517455
gener_topic	1	1	1	1	1.644614023
improv_effici	10	8	80	100	-3.195477

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
data_contain	4	4	16	16	-0.635416318
free_text	6	3	18	36	0.844563455
linear_combin	6	2	12	36	1.844563455
system_extract	7	5	35	49	-0.915446659
classifi_test	1	1	1	1	1.644614023
tech_niqu	8	1	8	64	3.324543228
us_train	4	4	16	16	-0.635416318
word_common	5	5	25	25	-1.395426431
count_number	6	6	36	36	-2.155436545
evalu_model	1	1	1	1	1.644614023
experi_perform	9	6	54	81	-1.435466886
classif_base	4	4	16	16	-0.635416318
featur_train	6	6	36	36	-2.155436545
mine_us	14	8	112	196	-2.235517455
term_text	10	8	80	100	-3.195477
model_method	3	2	6	9	1.124593796
provid_inform	9	7	63	81	-2.435466886
start_point	12	5	60	144	0.284502773
process_method	4	4	16	16	-0.635416318
textual_document	5	4	20	25	-0.395426431
applic_text	5	5	25	25	-1.395426431
corpu_document	8	4	32	64	0.324543228
gener_model	2	1	2	4	1.88460391
group_similar	5	5	25	25	-1.395426431
lexicon_base	7	3	21	49	1.084553341
valu_document	4	3	12	16	0.364583682
data_test	5	4	20	25	-0.395426431
word_select	8	6	48	64	-1.675456772
base_topic	4	3	12	16	0.364583682
human_factor	24	3	72	576	5.164381409
predefin_categorii	1	1	1	1	1.644614023
classifi_categorii	4	4	16	16	-0.635416318
document_total	7	5	35	49	-0.915446659
sentenc_length	7	3	21	49	1.084553341
word_approach	11	7	77	121	-1.955487113
cluster_qualiti	16	5	80	256	1.244462318
collect_text	9	8	72	81	-3.435466886
maximum_likelihood	3	3	9	9	0.124593796

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
measur_valu	1	1	1	1	1.644614023
us_support	4	3	12	16	0.364583682
word_includ	3	3	9	9	0.124593796
document_consid	8	8	64	64	-3.675456772
empir_studi	4	4	16	16	-0.635416318
system_test	3	2	6	9	1.124593796
comput_similar	14	6	84	196	-0.235517455
corpu_text	5	3	15	25	0.604573569
morgan_kaufmann	8	6	48	64	-1.675456772
stem_us	8	7	56	64	-2.675456772
averag_number	1	1	1	1	1.644614023
frequenc_count	10	4	40	100	0.804523
includ_text	8	6	48	64	-1.675456772
techniqu_extract	6	6	36	36	-2.155436545
develop_method	5	5	25	25	-1.395426431
given_word	8	8	64	64	-3.675456772
process_reduc	6	6	36	36	-2.155436545
train_us	2	1	2	4	1.88460391
us_simpl	5	4	20	25	-0.395426431
word_context	8	3	24	64	1.324543228
wordnet_lexic	8	4	32	64	0.324543228
emot_categor	4	2	8	16	1.364583682
represent_us	6	4	24	36	-0.155436545
time_word	7	6	42	49	-1.915446659
word_exampl	4	4	16	16	-0.635416318
issu_issn	6	2	12	36	1.844563455
posit_fals	6	3	18	36	0.844563455
user_tweet	1	1	1	1	1.644614023
weight_approach	8	6	48	64	-1.675456772
index_document	3	3	9	9	0.124593796
perform_classifi	3	2	6	9	1.124593796
address_problem	7	2	14	49	2.084553341
document_rank	3	2	6	9	1.124593796
pattern_analysi	9	6	54	81	-1.435466886
us_vector	5	3	15	25	0.604573569
princip_compon	2	2	4	4	0.88460391
term_number	6	5	30	36	-1.155436545
mine_task	12	7	84	144	-1.715497227

<b>Theme</b>	<b>2015 Tot</b>	<b>2015 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
perform_cluster	6	3	18	36	0.844563455
take_advantag	3	3	9	9	0.124593796
algorithm_stem	6	4	24	36	-0.155436545
white_space	7	7	49	49	-2.915446659
featur_us	11	5	55	121	0.044512887
graph_node	16	4	64	256	2.244462318
weight_calcul	1	1	1	1	1.644614023
spam_detect	1	1	1	1	1.644614023
store_databas	7	5	35	49	-0.915446659
mixtur_model	6	2	12	36	1.844563455
method_evalu	5	3	15	25	0.604573569
inform_avail	9	5	45	81	-0.435466886
precis_valu	1	1	1	1	1.644614023
suffix_strip	4	4	16	16	-0.635416318
sourc_inform	4	2	8	16	1.364583682
featur_repres	2	2	4	4	0.88460391
classifi_featur	6	5	30	36	-1.155436545
process_word	8	6	48	64	-1.675456772
algorithm_develop	4	4	16	16	-0.635416318
main_reason	5	4	20	25	-0.395426431
base_stem	9	7	63	81	-2.435466886
comput_approach	5	3	15	25	0.604573569
given_queri	7	2	14	49	2.084553341
perform_algorithm	5	4	20	25	-0.395426431
stopword_remov	9	8	72	81	-3.435466886
inform_word	5	5	25	25	-1.395426431
model_word	3	3	9	9	0.124593796
optic_charact	4	1	4	16	2.364583682
scienc_applic	8	2	16	64	2.324543228
learn_object	2	2	4	4	0.88460391
automat_evalu	1	1	1	1	1.644614023
vector_featur	7	5	35	49	-0.915446659
model_compar	1	1	1	1	1.644614023
term_select	3	3	9	9	0.124593796
us_gram	5	4	20	25	-0.395426431
user_defin	12	7	84	144	-1.715497227
base_user	4	4	16	16	-0.635416318
index_process	3	2	6	9	1.124593796

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
similar_mean	6	5	30	36	-1.155436545
gram_base	5	2	10	25	1.604573569
sourc_data	6	2	12	36	1.844563455
text_messag	3	2	6	9	1.124593796
technolog_volum	11	5	55	121	0.044512887
analysi_social	8	5	40	64	-0.675456772
base_techniqu	6	5	30	36	-1.155436545
dataset_train	2	2	4	4	0.88460391
select_algorithm	17	3	51	289	3.484452204
token_stop	6	4	24	36	-0.155436545
us_wordnet	8	4	32	64	0.324543228
valu_pair	14	4	56	196	1.764482545
base_represent	7	6	42	49	-1.915446659
facebook_twitter	9	3	27	81	1.564533114
us_wikipedia	3	3	9	9	0.124593796
class_number	4	4	16	16	-0.635416318
dimension_featur	4	3	12	16	0.364583682
extract_techniqu	4	4	16	16	-0.635416318
model_automat	4	4	16	16	-0.635416318
european_languag	16	5	80	256	1.244462318
text_repres	3	2	6	9	1.124593796
comput_network	4	3	12	16	0.364583682
method_combin	4	3	12	16	0.364583682
word_match	3	2	6	9	1.124593796
algorithm_find	2	2	4	4	0.88460391
data_consist	3	3	9	9	0.124593796
featur_includ	3	3	9	9	0.124593796
form_stem	3	3	9	9	0.124593796
token_process	5	3	15	25	0.604573569
weight_vector	1	1	1	1	1.644614023
consist_document	1	1	1	1	1.644614023
sentenc_structur	5	4	20	25	-0.395426431
system_consist	5	3	15	25	0.604573569
test_model	5	4	20	25	-0.395426431
analysi_machin	6	6	36	36	-2.155436545
frequenc_weight	10	8	80	100	-3.195477
measur_calcul	2	2	4	4	0.88460391
workshop_comput	4	2	8	16	1.364583682

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
text_dataset	2	2	4	4	0.88460391
us_equat	5	3	15	25	0.604573569
collect_corpu	1	1	1	1	1.644614023
lexic_featur	5	4	20	25	-0.395426431
mean_valu	1	1	1	1	1.644614023
model_extract	3	2	6	9	1.124593796
perform_analysi	13	7	91	169	-1.475507341
corpu_word	4	3	12	16	0.364583682
model_system	3	2	6	9	1.124593796
us_rule	3	3	9	9	0.124593796
concept_document	3	3	9	9	0.124593796
categori_categori	6	6	36	36	-2.155436545
length_document	9	7	63	81	-2.435466886
north_chapter	2	2	4	4	0.88460391
overal_perform	2	2	4	4	0.88460391
document_length	7	5	35	49	-0.915446659
cluster_accuraci	4	2	8	16	1.364583682
good_perform	3	3	9	9	0.124593796
list_stop	6	5	30	36	-1.155436545
index_html	3	3	9	9	0.124593796
algorithm_implement	4	4	16	16	-0.635416318
convert_text	2	2	4	4	0.88460391
word_elimin	6	4	24	36	-0.155436545
improv_text	5	5	25	25	-1.395426431
collect_tweet	1	1	1	1	1.644614023
count_word	5	4	20	25	-0.395426431
extract_knowledg	5	4	20	25	-0.395426431
statist_signific	8	3	24	64	1.324543228
emot_text	9	3	27	81	1.564533114
knowledg_extract	3	3	9	9	0.124593796
term_queri	3	2	6	9	1.124593796
semant_evalu	17	4	68	289	2.484452204
method_extract	3	3	9	9	0.124593796
overal_accuraci	1	1	1	1	1.644614023
repres_term	9	5	45	81	-0.435466886
approach_automat	8	7	56	64	-2.675456772
automat_classifi	6	5	30	36	-1.155436545
method_describ	2	2	4	4	0.88460391

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
languag_specif	5	4	20	25	-0.395426431
node_repres	7	2	14	49	2.084553341
topic_text	15	5	75	225	1.004472432
difficult_task	3	3	9	9	0.124593796
access_inform	8	6	48	64	-1.675456772
depart_inform	8	6	48	64	-1.675456772
naïv_bayesian	4	3	12	16	0.364583682
queri_word	5	3	15	25	0.604573569
caus_effect	11	2	22	121	3.044512887
comput_base	10	6	60	100	-1.195477
fine_grain	10	6	60	100	-1.195477
measur_defin	9	7	63	81	-2.435466886
text_written	4	4	16	16	-0.635416318
distribut_document	5	4	20	25	-0.395426431
lower_case	4	4	16	16	-0.635416318
recognit_system	3	3	9	9	0.124593796
semi_automat	6	4	24	36	-0.155436545
consist_word	6	3	18	36	0.844563455
context_base	5	3	15	25	0.604573569
dataset_us	7	5	35	49	-0.915446659
process_phase	3	2	6	9	1.124593796
us_corpu	2	2	4	4	0.88460391
word_distribut	6	5	30	36	-1.155436545
term_occurr	2	2	4	4	0.88460391
method_cluster	5	4	20	25	-0.395426431
token_text	8	6	48	64	-1.675456772
compon_analysi	2	2	4	4	0.88460391
gener_term	2	2	4	4	0.88460391
semant_structur	2	2	4	4	0.88460391
stem_reduc	2	2	4	4	0.88460391
term_accuraci	5	5	25	25	-1.395426431
cluster_word	7	4	28	49	0.084553341
document_given	6	4	24	36	-0.155436545
system_text	8	6	48	64	-1.675456772
text_understand	7	2	14	49	2.084553341
us_mean	4	3	12	16	0.364583682
document_extract	6	4	24	36	-0.155436545
frequenc_calcul	4	4	16	16	-0.635416318

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
document_group	4	4	16	16	-0.635416318
domain_knowledg	13	7	91	169	-1.475507341
gener_content	2	2	4	4	0.88460391
learn_data	6	5	30	36	-1.155436545
retriev_base	5	3	15	25	0.604573569
algorithm_mean	3	2	6	9	1.124593796
approach_perform	6	5	30	36	-1.155436545
model_approach	3	3	9	9	0.124593796
network_us	4	2	8	16	1.364583682
gram_word	14	3	42	196	2.764482545
model_combin	2	2	4	4	0.88460391
stemmer_algorithm	7	7	49	49	-2.915446659
valu_paramet	3	3	9	9	0.124593796
valu_word	8	7	56	64	-2.675456772
accuraci_tabl	5	2	10	25	1.604573569
assign_word	2	2	4	4	0.88460391
base_measur	11	6	66	121	-0.955487113
process_approach	3	3	9	9	0.124593796
us_latent	1	1	1	1	1.644614023
gener_algorithm	7	2	14	49	2.084553341
preprocess_techniqu	3	3	9	9	0.124593796
rule_rule	4	4	16	16	-0.635416318
level_text	5	5	25	25	-1.395426431
process_base	3	3	9	9	0.124593796
relev_queri	1	1	1	1	1.644614023
document_test	3	2	6	9	1.124593796
document_accord	3	3	9	9	0.124593796
order_evalu	7	3	21	49	1.084553341
base_learn	1	1	1	1	1.644614023
algorithm_suffix	5	5	25	25	-1.395426431
approach_featur	5	2	10	25	1.604573569
time_process	2	2	4	4	0.88460391
equal_number	7	7	49	49	-2.915446659
improv_cluster	8	4	32	64	0.324543228
classif_document	5	4	20	25	-0.395426431
gener_process	3	3	9	9	0.124593796
jordan_latent	4	4	16	16	-0.635416318
label_train	2	2	4	4	0.88460391

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
model_describ	3	3	9	9	0.124593796
us_topic	1	1	1	1	1.644614023
base_machin	6	4	24	36	-0.155436545
frequenc_number	6	5	30	36	-1.155436545
process_includ	4	4	16	16	-0.635416318
word_assign	6	6	36	36	-2.155436545
automat_classif	1	1	1	1	1.644614023
calcul_term	4	2	8	16	1.364583682
signific_improv	3	3	9	9	0.124593796
stage_process	4	4	16	16	-0.635416318
valu_indic	9	5	45	81	-0.435466886
analysi_tool	6	4	24	36	-0.155436545
gener_method	2	2	4	4	0.88460391
vector_us	1	1	1	1	1.644614023
origin_data	8	4	32	64	0.324543228
comput_secur	2	2	4	4	0.88460391
engin_depart	4	4	16	16	-0.635416318
frequent_item	11	4	44	121	1.044512887
http_github	1	1	1	1	1.644614023
increas_perform	5	3	15	25	0.604573569
occurr_document	6	5	30	36	-1.155436545
similar_cluster	3	3	9	9	0.124593796
studi_featur	2	2	4	4	0.88460391
token_stem	1	1	1	1	1.644614023
us_weight	4	4	16	16	-0.635416318
word_reduc	3	3	9	9	0.124593796
base_number	4	4	16	16	-0.635416318
data_includ	6	4	24	36	-0.155436545
dataset_collect	4	3	12	16	0.364583682
find_word	4	4	16	16	-0.635416318
learn_train	6	6	36	36	-2.155436545
reduc_time	3	3	9	9	0.124593796
weight_document	11	5	55	121	0.044512887
word_collect	6	6	36	36	-2.155436545
corpu_train	2	2	4	4	0.88460391
learn_system	4	2	8	16	1.364583682
accuraci_classif	8	4	32	64	0.324543228
algorithm_compar	5	5	25	25	-1.395426431

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
base_form	7	4	28	49	0.084553341
contain_text	5	5	25	25	-1.395426431
dataset_experi	4	4	16	16	-0.635416318
pair_word	1	1	1	1	1.644614023
approach_combin	1	1	1	1	1.644614023
includ_word	4	3	12	16	0.364583682
problem_text	12	11	132	144	-5.715497227
reduct_techniqu	10	9	90	100	-4.195477
remov_punctuat	7	7	49	49	-2.915446659
score_system	5	2	10	25	1.604573569
select_document	5	3	15	25	0.604573569
type_featur	2	2	4	4	0.88460391
us_model	2	2	4	4	0.88460391
mobil_phone	1	1	1	1	1.644614023
select_relev	9	4	36	81	0.564533114
system_data	1	1	1	1	1.644614023
gener_us	9	8	72	81	-3.435466886
order_extract	6	3	18	36	0.844563455
perfor_manc	5	4	20	25	-0.395426431
recal_recal	5	4	20	25	-0.395426431
rule_extract	12	9	108	144	-3.715497227
structur_text	5	4	20	25	-0.395426431
word_train	6	6	36	36	-2.155436545
combin_model	1	1	1	1	1.644614023
data_classif	3	3	9	9	0.124593796
time_featur	8	1	8	64	3.324543228
gener_categori	10	1	10	100	3.804523
model_term	4	3	12	16	0.364583682
probabilist_latent	6	2	12	36	1.844563455
search_word	5	4	20	25	-0.395426431
order_word	3	3	9	9	0.124593796
predict_class	3	3	9	9	0.124593796
base_applic	2	1	2	4	1.88460391
bay_classif	10	2	20	100	2.804523
binari_classif	2	1	2	4	1.88460391
learn_inform	2	2	4	4	0.88460391
note_comput	4	3	12	16	0.364583682
number_class	4	4	16	16	-0.635416318

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
perform_inform	10	5	50	100	-0.195477
techniqu_find	5	5	25	25	-1.395426431
main_step	4	4	16	16	-0.635416318
make_difficult	4	4	16	16	-0.635416318
servic_servic	2	2	4	4	0.88460391
method_classif	2	2	4	4	0.88460391
model_latent	1	1	1	1	1.644614023
model_process	2	2	4	4	0.88460391
statist_measur	2	2	4	4	0.88460391
stem_method	6	4	24	36	-0.155436545
topic_gener	2	2	4	4	0.88460391
tradit_approach	3	2	6	9	1.124593796
data_format	6	4	24	36	-0.155436545
featur_term	7	5	35	49	-0.915446659
posit_class	1	1	1	1	1.644614023
score_function	2	1	2	4	1.88460391
term_precis	2	2	4	4	0.88460391
total_word	11	4	44	121	1.044512887
divid_number	6	3	18	36	0.844563455
present_model	3	2	6	9	1.124593796
word_group	7	7	49	49	-2.915446659
approach_develop	6	6	36	36	-2.155436545
compar_word	4	3	12	16	0.364583682
find_optim	2	1	2	4	1.88460391
further_improv	5	4	20	25	-0.395426431
probabl_word	5	5	25	25	-1.395426431
proce_ing	8	3	24	64	1.324543228
data_form	4	3	12	16	0.364583682
neg_sentiment	4	2	8	16	1.364583682
servic_orient	1	1	1	1	1.644614023
cluster_gener	5	5	25	25	-1.395426431
train_phase	1	1	1	1	1.644614023
cluster_mean	7	4	28	49	0.084553341
document_set	2	2	4	4	0.88460391
file_file	1	1	1	1	1.644614023
inform_sourc	7	3	21	49	1.084553341
neighbor_algorithm	2	2	4	4	0.88460391
preprocess_document	5	3	15	25	0.604573569

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
structur_inform	5	3	15	25	0.604573569
us_approach	4	4	16	16	-0.635416318
dataset_evalu	1	1	1	1	1.644614023
mine_pattern	9	5	45	81	-0.435466886
model_user	4	4	16	16	-0.635416318
model_vector	5	3	15	25	0.604573569
size_data	4	2	8	16	1.364583682
struc_ture	7	2	14	49	2.084553341
calcul_number	4	3	12	16	0.364583682
number_charact	1	1	1	1	1.644614023
system_support	3	3	9	9	0.124593796
us_combin	3	3	9	9	0.124593796
user_interact	5	4	20	25	-0.395426431
data_represent	6	5	30	36	-1.155436545
experi_evalu	3	2	6	9	1.124593796
gener_purpos	2	2	4	4	0.88460391
linguist_human	3	3	9	9	0.124593796
tech_nologi	5	3	15	25	0.604573569
word_frequent	3	3	9	9	0.124593796
automat_process	8	4	32	64	0.324543228
remov_prefix	5	4	20	25	-0.395426431
select_word	6	3	18	36	0.844563455
us_naïv	5	2	10	25	1.604573569
correct_word	1	1	1	1	1.644614023
perform_poorli	3	2	6	9	1.124593796
type_type	2	2	4	4	0.88460391
retriev_perform	1	1	1	1	1.644614023
effect_featur	2	2	4	4	0.88460391
data_gather	3	3	9	9	0.124593796
inform_filter	5	2	10	25	1.604573569
overcom_problem	3	3	9	9	0.124593796
method_arab	7	5	35	49	-0.915446659
reduc_size	3	3	9	9	0.124593796
stem_techniqu	5	4	20	25	-0.395426431
us_document	3	2	6	9	1.124593796
import_word	1	1	1	1	1.644614023
perform_featur	6	5	30	36	-1.155436545
approach_classifi	2	2	4	4	0.88460391

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
perform_document	3	3	9	9	0.124593796
algorithm_data	6	5	30	36	-1.155436545
cluster_group	7	4	28	49	0.084553341
estim_probabl	4	3	12	16	0.364583682
given_topic	7	2	14	49	2.084553341
model_implement	1	1	1	1	1.644614023
order_achiev	3	3	9	9	0.124593796
vector_model	5	5	25	25	-1.395426431
inform_data	6	5	30	36	-1.155436545
total_document	8	3	24	64	1.324543228
document_comput	6	4	24	36	-0.155436545
algorithm_test	2	2	4	4	0.88460391
fuzzi_set	1	1	1	1	1.644614023
system_process	4	4	16	16	-0.635416318
term_semant	6	4	24	36	-0.155436545
token_part	4	3	12	16	0.364583682
train_train	3	3	9	9	0.124593796
tree_algorithm	6	6	36	36	-2.155436545
detect_us	2	2	4	4	0.88460391
help_identifi	2	2	4	4	0.88460391
input_word	7	3	21	49	1.084553341
contain_number	2	2	4	4	0.88460391
group_document	6	6	36	36	-2.155436545
approach_analyz	5	5	25	25	-1.395426431
method_consid	5	4	20	25	-0.395426431
document_user	3	2	6	9	1.124593796
languag_base	3	3	9	9	0.124593796
commun_engin	3	3	9	9	0.124593796
corpu_number	4	4	16	16	-0.635416318
perform_term	7	5	35	49	-0.915446659
collect_word	4	4	16	16	-0.635416318
detail_descript	2	2	4	4	0.88460391
inform_us	2	1	2	4	1.88460391
tree_classifi	5	3	15	25	0.604573569
word_exist	9	6	54	81	-1.435466886
analysi_opinion	3	3	9	9	0.124593796
effect_us	7	6	42	49	-1.915446659
method_measur	4	3	12	16	0.364583682

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
paramet_valu	1	1	1	1	1.644614023
supervis_unsupervis	1	1	1	1	1.644614023
text_consid	2	2	4	4	0.88460391
averag_valu	6	4	24	36	-0.155436545
bay_theorem	4	2	8	16	1.364583682
evalu_classifi	2	2	4	4	0.88460391
pattern_gener	3	2	6	9	1.124593796
perform_improv	1	1	1	1	1.644614023
preprocess_data	3	3	9	9	0.124593796
test_system	3	3	9	9	0.124593796
word_search	6	2	12	36	1.844563455
faculti_scienc	6	4	24	36	-0.155436545
form_us	7	7	49	49	-2.915446659
linguist_resourc	13	4	52	169	1.524492659
semant_network	4	4	16	16	-0.635416318
variou_featur	4	4	16	16	-0.635416318
written_text	4	4	16	16	-0.635416318
catégori_word	10	6	60	100	-1.195477
context_awar	1	1	1	1	1.644614023
extract_tweet	3	3	9	9	0.124593796
order_logic	2	2	4	4	0.88460391
select_term	10	4	40	100	0.804523
simpl_word	2	1	2	4	1.88460391
appear_frequent	4	3	12	16	0.364583682
method_select	3	3	9	9	0.124593796
modern_inform	1	1	1	1	1.644614023
term_gener	7	4	28	49	0.084553341
evalu_evalu	4	3	12	16	0.364583682
method_improv	1	1	1	1	1.644614023
model_defin	1	1	1	1	1.644614023
multinomi_distribut	3	3	9	9	0.124593796
size_train	1	1	1	1	1.644614023
specif_topic	3	3	9	9	0.124593796
approach_cluster	8	4	32	64	0.324543228
describ_detail	5	5	25	25	-1.395426431
document_thu	2	2	4	4	0.88460391
gram_model	6	5	30	36	-1.155436545
train_time	3	2	6	9	1.124593796

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
convert_word	1	1	1	1	1.644614023
divid_total	6	6	36	36	-2.155436545
improv_precis	5	2	10	25	1.604573569
document_order	9	6	54	81	-1.435466886
gram_featur	8	4	32	64	0.324543228
main_featur	8	4	32	64	0.324543228
mine_machin	3	2	6	9	1.124593796
repr_sent	8	3	24	64	1.324543228
test_evalu	2	2	4	4	0.88460391
websit_http	1	1	1	1	1.644614023
calcul_frequenc	4	3	12	16	0.364583682
comput_semant	3	3	9	9	0.124593796
subset_featur	5	4	20	25	-0.395426431
system_arab	7	3	21	49	1.084553341
algorithm_predict	3	2	6	9	1.124593796
gener_data	6	5	30	36	-1.155436545
mine_natur	7	5	35	49	-0.915446659
multi_label	3	3	9	9	0.124593796
node_graph	14	5	70	196	0.764482545
word_test	2	1	2	4	1.88460391
design_model	1	1	1	1	1.644614023
further_develop	3	3	9	9	0.124593796
model_construct	4	3	12	16	0.364583682
sampl_data	2	2	4	4	0.88460391
salton_bucklei	4	4	16	16	-0.635416318
applic_develop	3	3	9	9	0.124593796
automat_document	4	4	16	16	-0.635416318
document_avail	7	7	49	49	-2.915446659
model_consid	3	3	9	9	0.124593796
stem_step	3	2	6	9	1.124593796
arxiv_preprint	4	2	8	16	1.364583682
classifi_classif	3	3	9	9	0.124593796
classifi_support	4	2	8	16	1.364583682
mean_document	4	3	12	16	0.364583682
method_comput	1	1	1	1	1.644614023
technolog_issn	5	2	10	25	1.604573569
appear_time	7	5	35	49	-0.915446659
auto_matic	4	3	12	16	0.364583682

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
captur_semant	1	1	1	1	1.644614023
linguist_structur	2	2	4	4	0.88460391
perform_base	2	1	2	4	1.88460391
word_refer	3	3	9	9	0.124593796
data_obtain	6	3	18	36	0.844563455
describ_system	4	4	16	16	-0.635416318
direct_graph	9	5	45	81	-0.435466886
help_improv	3	3	9	9	0.124593796
linear_model	5	3	15	25	0.604573569
model_provid	2	2	4	4	0.88460391
multipl_word	5	4	20	25	-0.395426431
probabl_document	12	5	60	144	0.284502773
topic_interest	15	2	30	225	4.004472432
word_total	8	4	32	64	0.324543228
accuraci_obtain	5	2	10	25	1.604573569
class_classifi	2	1	2	4	1.88460391
current_state	1	1	1	1	1.644614023
experi_experi	5	2	10	25	1.604573569
mathemat_comput	10	5	50	100	-0.195477
measur_cosin	4	4	16	16	-0.635416318
messag_servic	1	1	1	1	1.644614023
similar_text	2	2	4	4	0.88460391
achiev_good	5	5	25	25	-1.395426431
algorithm_term	5	5	25	25	-1.395426431
method_model	3	3	9	9	0.124593796
metric_evalu	1	1	1	1	1.644614023
stemmer_arab	2	2	4	4	0.88460391
system_consid	3	3	9	9	0.124593796
system_requir	3	3	9	9	0.124593796
tweet_collect	2	1	2	4	1.88460391
word_user	5	5	25	25	-1.395426431
appli_cluster	1	1	1	1	1.644614023
learn_task	2	2	4	4	0.88460391
document_organ	4	3	12	16	0.364583682
measur_comput	3	3	9	9	0.124593796
term_given	6	6	36	36	-2.155436545
user_find	4	3	12	16	0.364583682
bay_model	3	1	3	9	2.124593796

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
consid_term	6	5	30	36	-1.155436545
mcgraw_hill	1	1	1	1	1.644614023
method_document	2	2	4	4	0.88460391
model_cluster	4	3	12	16	0.364583682
retriev_data	6	4	24	36	-0.155436545
search_inform	3	3	9	9	0.124593796
basic_idea	4	4	16	16	-0.635416318
blog_post	6	5	30	36	-1.155436545
comput_survei	3	3	9	9	0.124593796
deriv_word	3	3	9	9	0.124593796
main_contribut	4	4	16	16	-0.635416318
estim_paramet	1	1	1	1	1.644614023
form_cluster	3	3	9	9	0.124593796
method_name	1	1	1	1	1.644614023
model_techniqu	6	3	18	36	0.844563455
neural_inform	3	3	9	9	0.124593796
binari_classifi	2	1	2	4	1.88460391
charact_token	4	3	12	16	0.364583682
latent_variabl	6	1	6	36	2.844563455
system_comput	2	2	4	4	0.88460391
task_automat	4	4	16	16	-0.635416318
text_includ	2	2	4	4	0.88460391
us_neural	2	2	4	4	0.88460391
algorithm_describ	2	2	4	4	0.88460391
algorithm_method	1	1	1	1	1.644614023
algorithm_requir	4	4	16	16	-0.635416318
applic_us	1	1	1	1	1.644614023
calcul_score	6	4	24	36	-0.155436545
featur_number	2	2	4	4	0.88460391
inform_base	5	4	20	25	-0.395426431
method_achiev	1	1	1	1	1.644614023
studi_focus	3	2	6	9	1.124593796
comput_program	1	1	1	1	1.644614023
dataset_test	4	4	16	16	-0.635416318
identifi_emot	3	2	6	9	1.124593796
replac_word	6	4	24	36	-0.155436545
statist_data	2	2	4	4	0.88460391
automat_detect	2	2	4	4	0.88460391

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
calcul_word	2	2	4	4	0.88460391
commun_system	1	1	1	1	1.644614023
develop_tool	5	3	15	25	0.604573569
featur_classif	3	2	6	9	1.124593796
graphic_model	4	2	8	16	1.364583682
process_term	1	1	1	1	1.644614023
semant_resourc	4	3	12	16	0.364583682
text_analyt	3	3	9	9	0.124593796
word_weight	8	7	56	64	-2.675456772
match_match	1	1	1	1	1.644614023
valu_obtain	1	1	1	1	1.644614023
defin_term	5	2	10	25	1.604573569
us_maximum	3	2	6	9	1.124593796
cluster_comput	7	4	28	49	0.084553341
space_word	2	2	4	4	0.88460391
token_document	4	3	12	16	0.364583682
model_dataset	2	2	4	4	0.88460391
novel_approach	5	4	20	25	-0.395426431
vocabulari_word	1	1	1	1	1.644614023
frequenc_measur	6	5	30	36	-1.155436545
ground_truth	5	3	15	25	0.604573569
levelRepresent	1	1	1	1	1.644614023
process_select	3	3	9	9	0.124593796
algorithm_automat	4	3	12	16	0.364583682
index_word	4	2	8	16	1.364583682
proc_sigir	2	2	4	4	0.88460391
algorithm_achiev	2	2	4	4	0.88460391
appli_algorithm	1	1	1	1	1.644614023
averag_length	5	3	15	25	0.604573569
evalu_base	1	1	1	1	1.644614023
form_term	4	4	16	16	-0.635416318
machin_intellig	4	4	16	16	-0.635416318
mine_base	6	6	36	36	-2.155436545
professor_comput	4	4	16	16	-0.635416318
techniqu_reduc	2	2	4	4	0.88460391
us_tool	2	2	4	4	0.88460391
vector_term	4	3	12	16	0.364583682
evalu_dataset	1	1	1	1	1.644614023

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
extract_semant	1	1	1	1	1.644614023
process_machin	2	2	4	4	0.88460391
adject_noun	5	5	25	25	-1.395426431
collect_process	4	3	12	16	0.364583682
gradient_descent	1	1	1	1	1.644614023
inform_structur	7	6	42	49	-1.915446659
languag_world	4	4	16	16	-0.635416318
learn_us	2	2	4	4	0.88460391
model_make	2	2	4	4	0.88460391
text_form	6	5	30	36	-1.155436545
analysi_natur	6	5	30	36	-1.155436545
complex_system	3	3	9	9	0.124593796
levenshtein_distanc	6	2	12	36	1.844563455
million_peopl	7	5	35	49	-0.915446659
model_structur	2	2	4	4	0.88460391
remain_word	5	4	20	25	-0.395426431
search_data	2	2	4	4	0.88460391
approach_solv	2	2	4	4	0.88460391
document_convert	1	1	1	1	1.644614023
extern_knowledg	5	3	15	25	0.604573569
appli_document	3	3	9	9	0.124593796
assign_categori	5	5	25	25	-1.395426431
distribut_data	6	6	36	36	-2.155436545
network_commun	7	1	7	49	3.084553341
tree_base	1	1	1	1	1.644614023
larger_number	3	2	6	9	1.124593796
novel_method	3	3	9	9	0.124593796
preprint_arxiv	2	2	4	4	0.88460391
represent_vector	1	1	1	1	1.644614023
us_keyword	4	3	12	16	0.364583682
data_classifi	4	3	12	16	0.364583682
distribut_term	4	4	16	16	-0.635416318
group_base	3	3	9	9	0.124593796
relev_user	4	3	12	16	0.364583682
summar_task	2	2	4	4	0.88460391
type_word	1	1	1	1	1.644614023
vector_weight	1	1	1	1	1.644614023
weight_weight	4	4	16	16	-0.635416318

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
approach_method	2	2	4	4	0.88460391
column_repres	1	1	1	1	1.644614023
dept_comput	5	4	20	25	-0.395426431
keyword_search	4	3	12	16	0.364583682
measur_word	1	1	1	1	1.644614023
model_analysi	2	2	4	4	0.88460391
perform_comparison	1	1	1	1	1.644614023
user_input	6	3	18	36	0.844563455
approach_gener	4	4	16	16	-0.635416318
base_keyword	5	5	25	25	-1.395426431
base_multi	2	2	4	4	0.88460391
base_score	2	2	4	4	0.88460391
base_valu	2	2	4	4	0.88460391
data_size	5	4	20	25	-0.395426431
data_social	3	2	6	9	1.124593796
perform_variou	2	2	4	4	0.88460391
reduc_comput	5	3	15	25	0.604573569
studi_us	3	3	9	9	0.124593796
us_measur	5	5	25	25	-1.395426431
word_input	6	5	30	36	-1.155436545
workshop_text	11	7	77	121	-1.955487113
accuraci_score	4	3	12	16	0.364583682
approach_identifi	3	3	9	9	0.124593796
base_queri	2	1	2	4	1.88460391
determin_word	1	1	1	1	1.644614023
maximum_valu	7	4	28	49	0.084553341
model_creat	1	1	1	1	1.644614023
take_time	3	3	9	9	0.124593796
us_number	4	3	12	16	0.364583682
user_us	3	3	9	9	0.124593796
averag_time	1	1	1	1	1.644614023
classifi_predict	3	3	9	9	0.124593796
knowledg_inform	11	7	77	121	-1.955487113
perform_stem	8	8	64	64	-3.675456772
valu_given	4	3	12	16	0.364583682
word_replac	1	1	1	1	1.644614023
document_appear	1	1	1	1	1.644614023
kullback_leibler	8	3	24	64	1.324543228

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
number_distinct	3	3	9	9	0.124593796
learn_autom	5	5	25	25	-1.395426431
requir_number	2	2	4	4	0.88460391
becom_popular	5	4	20	25	-0.395426431
process_call	4	4	16	16	-0.635416318
similar_featur	2	2	4	4	0.88460391
singl_term	2	2	4	4	0.88460391
term_calcul	4	4	16	16	-0.635416318
term_topic	1	1	1	1	1.644614023
type_document	6	6	36	36	-2.155436545
appli_mathemat	2	2	4	4	0.88460391
creat_word	1	1	1	1	1.644614023
decreas_number	4	3	12	16	0.364583682
master_degre	3	3	9	9	0.124593796
test_train	1	1	1	1	1.644614023
text_evalu	1	1	1	1	1.644614023
cosin_angl	4	4	16	16	-0.635416318
evalu_cluster	2	2	4	4	0.88460391
evalu_lrec	1	1	1	1	1.644614023
given_user	3	3	9	9	0.124593796
includ_step	2	2	4	4	0.88460391
likelihood_estim	1	1	1	1	1.644614023
mine_icdm	5	3	15	25	0.604573569
model_experi	1	1	1	1	1.644614023
optim_number	1	1	1	1	1.644614023
process_order	2	2	4	4	0.88460391
queri_queri	1	1	1	1	1.644614023
recent_studi	6	4	24	36	-0.155436545
similar_concept	2	2	4	4	0.88460391
strip_program	5	5	25	25	-1.395426431
classifi_emot	2	1	2	4	1.88460391
consid_word	2	2	4	4	0.88460391
inform_featur	1	1	1	1	1.644614023
measur_combin	5	4	20	25	-0.395426431
model_number	2	2	4	4	0.88460391
refer_word	3	3	9	9	0.124593796
techniqu_stem	4	3	12	16	0.364583682
word_letter	2	2	4	4	0.88460391

<b>Theme</b>	<b>2015 Tot</b>	<b>2015 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
approach_present	2	1	2	4	1.88460391
integr_data	8	6	48	64	-1.675456772
method_data	4	3	12	16	0.364583682
model_present	3	3	9	9	0.124593796
multi_dimension	10	5	50	100	-0.195477
select_select	10	4	40	100	0.804523
system_abl	1	1	1	1	1.644614023
text_exampl	3	3	9	9	0.124593796
base_function	2	2	4	4	0.88460391
develop_base	4	4	16	16	-0.635416318
emot_analysi	1	1	1	1	1.644614023
mine_introduct	8	8	64	64	-3.675456772
morpholog_syntact	5	3	15	25	0.604573569
score_evalu	3	2	6	9	1.124593796
servic_name	1	1	1	1	1.644614023
precis_rate	1	1	1	1	1.644614023
order_compar	3	3	9	9	0.124593796
similar_function	3	2	6	9	1.124593796
step_algorithm	2	2	4	4	0.88460391
neg_emot	1	1	1	1	1.644614023
particular_categori	5	3	15	25	0.604573569
advanc_neural	2	2	4	4	0.88460391
cluster_form	3	2	6	9	1.124593796
html_http	2	1	2	4	1.88460391
particular_document	3	2	6	9	1.124593796
reduc_dimens	4	2	8	16	1.364583682
stem_approach	5	2	10	25	1.604573569
twitter_social	2	1	2	4	1.88460391
accuraci_text	5	5	25	25	-1.395426431
learn_theori	1	1	1	1	1.644614023
select_appropri	3	2	6	9	1.124593796
task_document	4	4	16	16	-0.635416318
term_index	3	3	9	9	0.124593796
text_model	2	2	4	4	0.88460391
time_frame	3	3	9	9	0.124593796
analysi_determin	2	2	4	4	0.88460391
classifi_class	3	2	6	9	1.124593796
creativ_common	2	2	4	4	0.88460391

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
lower_valu	2	1	2	4	1.88460391
match_algorithm	3	2	6	9	1.124593796
problem_data	6	3	18	36	0.844563455
techniqu_term	2	2	4	4	0.88460391
word_algorithm	1	1	1	1	1.644614023
class_cluster	2	2	4	4	0.88460391
evalu_topic	2	2	4	4	0.88460391
process_describ	2	2	4	4	0.88460391
system_inform	2	2	4	4	0.88460391
tion_retriev	2	1	2	4	1.88460391
total_score	1	1	1	1	1.644614023
user_select	6	4	24	36	-0.155436545
word_defin	3	2	6	9	1.124593796
word_find	3	2	6	9	1.124593796
collect_us	4	4	16	16	-0.635416318
data_perform	1	1	1	1	1.644614023
dice_similar	1	1	1	1	1.644614023
formal_defin	3	2	6	9	1.124593796
respons_time	1	1	1	1	1.644614023
techniqu_order	4	4	16	16	-0.635416318
distribut_similar	2	2	4	4	0.88460391
probabl_term	4	3	12	16	0.364583682
document_assign	2	2	4	4	0.88460391
leibler_diverg	7	3	21	49	1.084553341
bucklei_term	4	4	16	16	-0.635416318
categor_comput	3	3	9	9	0.124593796
collect_dataset	1	1	1	1	1.644614023
introduct_modern	2	2	4	4	0.88460391
keyword_arab	2	2	4	4	0.88460391
search_us	3	3	9	9	0.124593796
size_document	5	5	25	25	-1.395426431
system_page	3	2	6	9	1.124593796
time_document	6	6	36	36	-2.155436545
charact_number	1	1	1	1	1.644614023
document_select	4	4	16	16	-0.635416318
effect_method	1	1	1	1	1.644614023
languag_complex	4	4	16	16	-0.635416318
method_take	3	3	9	9	0.124593796

<b>Theme</b>	<b>2015 Tot</b>	<b>2015 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
signific_amount	2	1	2	4	1.88460391
analysi_classif	2	2	4	4	0.88460391
appli_comput	5	4	20	25	-0.395426431
document_obtain	3	3	9	9	0.124593796
main_focu	1	1	1	1	1.644614023
model_outperform	1	1	1	1	1.644614023
probabl_class	4	3	12	16	0.364583682
represent_method	4	4	16	16	-0.635416318
term_mean	3	3	9	9	0.124593796
word_singl	8	7	56	64	-2.675456772
algorithm_present	1	1	1	1	1.644614023
approach_comput	2	2	4	4	0.88460391
corpu_includ	2	2	4	4	0.88460391
data_analyz	4	4	16	16	-0.635416318
data_experi	4	3	12	16	0.364583682
depend_word	2	2	4	4	0.88460391
describ_method	5	5	25	25	-1.395426431
distribu_tion	1	1	1	1	1.644614023
frequenc_featur	2	2	4	4	0.88460391
good_accuraci	2	1	2	4	1.88460391
human_behavior	5	3	15	25	0.604573569
lucen_apach	2	2	4	4	0.88460391
main_advantag	1	1	1	1	1.644614023
saudi_arabia	6	3	18	36	0.844563455
tag_tag	3	3	9	9	0.124593796
us_automat	6	5	30	36	-1.155436545
word_inform	3	3	9	9	0.124593796
analysi_identifi	3	3	9	9	0.124593796
common_attribut	1	1	1	1	1.644614023
exampl_tweet	1	1	1	1	1.644614023
model_find	2	2	4	4	0.88460391
normal_term	2	2	4	4	0.88460391
polar_text	2	1	2	4	1.88460391
preci_sion	2	2	4	4	0.88460391
system_includ	2	2	4	4	0.88460391
text_therefor	3	3	9	9	0.124593796
theori_applic	2	2	4	4	0.88460391
us_linguist	6	5	30	36	-1.155436545

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
word_correspond	3	3	9	9	0.124593796
neg_train	1	1	1	1	1.644614023
cluster_hierarch	2	2	4	4	0.88460391
document_reduc	6	4	24	36	-0.155436545
index_databas	5	2	10	25	1.604573569
stage_text	5	5	25	25	-1.395426431
class_repres	5	5	25	25	-1.395426431
cluster_evalu	1	1	1	1	1.644614023
document_includ	3	3	9	9	0.124593796
experiment_studi	2	2	4	4	0.88460391
identifi_topic	5	4	20	25	-0.395426431
social_interact	1	1	1	1	1.644614023
user_label	2	2	4	4	0.88460391
vector_similar	3	3	9	9	0.124593796
word_normal	2	2	4	4	0.88460391
descend_order	1	1	1	1	1.644614023
form_verb	6	5	30	36	-1.155436545
semant_represent	1	1	1	1	1.644614023
stem_gener	2	1	2	4	1.88460391
stem_porter	2	2	4	4	0.88460391
term_contain	2	2	4	4	0.88460391
text_obtain	2	2	4	4	0.88460391
us_languag	2	2	4	4	0.88460391
us_queri	2	1	2	4	1.88460391
document_content	3	2	6	9	1.124593796
document_increas	2	2	4	4	0.88460391
evalu_qualiti	3	3	9	9	0.124593796
filter_us	1	1	1	1	1.644614023
huge_number	2	1	2	4	1.88460391
match_user	3	3	9	9	0.124593796
remov_letter	1	1	1	1	1.644614023
step_preprocess	1	1	1	1	1.644614023
weight_score	1	1	1	1	1.644614023
word_vocabulari	2	2	4	4	0.88460391
avail_abl	4	3	12	16	0.364583682
document_distribut	2	2	4	4	0.88460391
extract_task	7	4	28	49	0.084553341
imag_analysi	8	3	24	64	1.324543228

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
languag_make	3	3	9	9	0.124593796
obtain_cluster	2	2	4	4	0.88460391
process_identifi	4	4	16	16	-0.635416318
significantli_reduc	5	5	25	25	-1.395426431
step_extract	6	3	18	36	0.844563455
step_identifi	3	3	9	9	0.124593796
system_term	2	2	4	4	0.88460391
us_graph	2	2	4	4	0.88460391
us_knowledg	8	6	48	64	-1.675456772
approach_machin	3	3	9	9	0.124593796
independ_assumpt	1	1	1	1	1.644614023
method_mean	1	1	1	1	1.644614023
number_sampl	2	1	2	4	1.88460391
origin_dataset	6	4	24	36	-0.155436545
problem_automat	6	5	30	36	-1.155436545
twitter_stream	2	2	4	4	0.88460391
user_system	5	5	25	25	-1.395426431
data_distribut	3	3	9	9	0.124593796
document_call	1	1	1	1	1.644614023
avail_document	4	4	16	16	-0.635416318
calcul_distanc	1	1	1	1	1.644614023
input_train	1	1	1	1	1.644614023
base_emot	6	2	12	36	1.844563455
develop_evalu	1	1	1	1	1.644614023
featur_evalu	1	1	1	1	1.644614023
linear_function	4	2	8	16	1.364583682
particular_domain	3	3	9	9	0.124593796
randomli_chosen	1	1	1	1	1.644614023
valu_measur	2	2	4	4	0.88460391
algorithm_mine	1	1	1	1	1.644614023
analyz_tweet	2	1	2	4	1.88460391
imag_video	3	2	6	9	1.124593796
measur_find	1	1	1	1	1.644614023
number_retriev	4	3	12	16	0.364583682
process_automat	2	2	4	4	0.88460391
process_take	3	3	9	9	0.124593796
requir_user	4	4	16	16	-0.635416318
rule_combin	1	1	1	1	1.644614023

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
signific_word	3	3	9	9	0.124593796
appli_stem	4	4	16	16	-0.635416318
applic_servic	1	1	1	1	1.644614023
base_structur	4	2	8	16	1.364583682
calcu_late	3	2	6	9	1.124593796
correspond_sentenc	2	2	4	4	0.88460391
experi_text	4	4	16	16	-0.635416318
featur_calcul	3	2	6	9	1.124593796
interact_user	1	1	1	1	1.644614023
map_word	1	1	1	1	1.644614023
order_understand	5	4	20	25	-0.395426431
search_retriev	4	4	16	16	-0.635416318
token_remov	2	2	4	4	0.88460391
us_gener	3	3	9	9	0.124593796
vector_train	4	4	16	16	-0.635416318
weight_obtain	3	2	6	9	1.124593796
class_posit	1	1	1	1	1.644614023
commun_comput	5	2	10	25	1.604573569
consist_phase	4	3	12	16	0.364583682
correctli_identifi	3	2	6	9	1.124593796
document_form	5	5	25	25	-1.395426431
experi_dataset	1	1	1	1	1.644614023
knowledg_resourc	10	5	50	100	-0.195477
languag_social	3	3	9	9	0.124593796
system_measur	4	2	8	16	1.364583682
text_method	3	3	9	9	0.124593796
word_chang	1	1	1	1	1.644614023
engin_issu	3	2	6	9	1.124593796
identifi_us	3	3	9	9	0.124593796
determin_number	3	2	6	9	1.124593796
normal_word	2	2	4	4	0.88460391
text_identifi	5	5	25	25	-1.395426431
world_congress	1	1	1	1	1.644614023
comparison_method	3	3	9	9	0.124593796
document_improv	2	2	4	4	0.88460391
precis_calcul	2	2	4	4	0.88460391
stem_document	2	2	4	4	0.88460391
centroid_cluster	2	1	2	4	1.88460391

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
data_approach	2	2	4	4	0.88460391
indic_word	4	3	12	16	0.364583682
interest_user	2	1	2	4	1.88460391
punctuat_remov	1	1	1	1	1.644614023
set_featur	3	2	6	9	1.124593796
twitter_facebook	1	1	1	1	1.644614023
variou_techniqu	5	5	25	25	-1.395426431
word_ad	4	3	12	16	0.364583682
accu_raci	3	3	9	9	0.124593796
algorithm_accuraci	4	3	12	16	0.364583682
algorithm_consist	2	2	4	4	0.88460391
algorithm_naiv	1	1	1	1	1.644614023
collect_collect	4	3	12	16	0.364583682
compar_us	3	3	9	9	0.124593796
comparison_document	5	4	20	25	-0.395426431
comparison_precis	1	1	1	1	1.644614023
describ_process	1	1	1	1	1.644614023
develop_develop	2	2	4	4	0.88460391
equal_length	3	3	9	9	0.124593796
featur_perform	1	1	1	1	1.644614023
frequenc_corpu	1	1	1	1	1.644614023
http_lucen	2	2	4	4	0.88460391
keyword_queri	3	2	6	9	1.124593796
measur_estim	2	2	4	4	0.88460391
model_take	1	1	1	1	1.644614023
obtain_word	3	2	6	9	1.124593796
probabilist_classifi	3	2	6	9	1.124593796
process_activ	5	5	25	25	-1.395426431
score_comput	3	3	9	9	0.124593796
step_select	1	1	1	1	1.644614023
system_learn	6	4	24	36	-0.155436545
term_relev	2	2	4	4	0.88460391
word_structur	4	3	12	16	0.364583682
word_type	2	2	4	4	0.88460391
algorithm_classif	3	3	9	9	0.124593796
base_mean	2	2	4	4	0.88460391
clean_data	4	2	8	16	1.364583682
document_creat	4	4	16	16	-0.635416318

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
document_remov	3	3	9	9	0.124593796
extract_name	2	2	4	4	0.88460391
func_tion	3	2	6	9	1.124593796
issn_issn	2	2	4	4	0.88460391
matrix_term	1	1	1	1	1.644614023
meaning_inform	3	3	9	9	0.124593796
method_detect	4	3	12	16	0.364583682
output_process	3	3	9	9	0.124593796
system_avail	1	1	1	1	1.644614023
system_detect	2	1	2	4	1.88460391
text_sourc	4	3	12	16	0.364583682
time_base	2	2	4	4	0.88460391
remov_step	1	1	1	1	1.644614023
parent_node	2	1	2	4	1.88460391
perform_obtain	2	2	4	4	0.88460391
word_lead	2	2	4	4	0.88460391
appear_text	2	2	4	4	0.88460391
cluster_repres	2	2	4	4	0.88460391
inform_servic	1	1	1	1	1.644614023
predefin_class	1	1	1	1	1.644614023
applic_inform	1	1	1	1	1.644614023
becom_increasingli	2	2	4	4	0.88460391
classif_data	1	1	1	1	1.644614023
inform_social	3	2	6	9	1.124593796
lower_number	4	2	8	16	1.364583682
techniqu_featur	4	4	16	16	-0.635416318
affix_word	3	2	6	9	1.124593796
classif_arab	1	1	1	1	1.644614023
dataset_avail	2	1	2	4	1.88460391
dataset_creat	2	1	2	4	1.88460391
featur_semant	2	2	4	4	0.88460391
function_similar	1	1	1	1	1.644614023
perform_step	3	3	9	9	0.124593796
repres_singl	3	3	9	9	0.124593796
step_gener	5	5	25	25	-1.395426431
time_number	2	2	4	4	0.88460391
token_us	3	3	9	9	0.124593796
vector_number	1	1	1	1	1.644614023

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
approach_pattern	4	2	8	16	1.364583682
contain_topic	3	3	9	9	0.124593796
content_type	2	2	4	4	0.88460391
degre_similar	1	1	1	1	1.644614023
form_inform	3	3	9	9	0.124593796
improv_us	1	1	1	1	1.644614023
inform_form	6	6	36	36	-2.155436545
interest_pattern	3	3	9	9	0.124593796
model_produc	1	1	1	1	1.644614023
present_text	5	5	25	25	-1.395426431
score_precis	5	4	20	25	-0.395426431
stem_exampl	5	3	15	25	0.604573569
text_appli	1	1	1	1	1.644614023
valu_chosen	3	3	9	9	0.124593796
automat_emot	2	1	2	4	1.88460391
base_perform	1	1	1	1	1.644614023
cluster_topic	3	3	9	9	0.124593796
contain_specif	2	2	4	4	0.88460391
data_describ	2	2	4	4	0.88460391
data_estim	3	2	6	9	1.124593796
data_user	3	1	3	9	2.124593796
electron_commun	5	2	10	25	1.604573569
exist_techniqu	3	3	9	9	0.124593796
frequenc_text	3	3	9	9	0.124593796
languag_stem	3	2	6	9	1.124593796
method_topic	2	2	4	4	0.88460391
model_increas	2	2	4	4	0.88460391
object_base	2	2	4	4	0.88460391
produc_cluster	6	2	12	36	1.844563455
rela_tionship	6	3	18	36	0.844563455
signific_number	1	1	1	1	1.644614023
similar_semant	3	1	3	9	2.124593796
system_creat	4	4	16	16	-0.635416318
time_accuraci	3	2	6	9	1.124593796
topic_us	1	1	1	1	1.644614023
train_word	2	1	2	4	1.88460391
word_valu	3	1	3	9	2.124593796
semant_concept	1	1	1	1	1.644614023

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
languag_form	1	1	1	1	1.644614023
stemmer_compar	2	1	2	4	1.88460391
distribut_class	2	2	4	4	0.88460391
binari_valu	1	1	1	1	1.644614023
consid_number	2	2	4	4	0.88460391
document_therefor	1	1	1	1	1.644614023
gener_train	1	1	1	1	1.644614023
higher_weight	3	3	9	9	0.124593796
method_present	3	3	9	9	0.124593796
word_preposit	4	4	16	16	-0.635416318
approach_select	2	1	2	4	1.88460391
assign_cluster	2	2	4	4	0.88460391
cluster_compar	2	2	4	4	0.88460391
form_form	3	3	9	9	0.124593796
grow_rapidli	3	3	9	9	0.124593796
matrix_contain	3	2	6	9	1.124593796
method_semant	1	1	1	1	1.644614023
term_identifi	6	2	12	36	1.844563455
text_present	3	3	9	9	0.124593796
topic_similar	6	1	6	36	2.844563455
vector_input	1	1	1	1	1.644614023
analysi_comput	4	4	16	16	-0.635416318
analysi_problem	4	4	16	16	-0.635416318
approach_compar	2	1	2	4	1.88460391
emerg_technolog	2	2	4	4	0.88460391
exist_algorithm	2	2	4	4	0.88460391
graph_model	2	2	4	4	0.88460391
luhn_automat	1	1	1	1	1.644614023
method_construct	2	2	4	4	0.88460391
order_measur	2	2	4	4	0.88460391
perform_fold	2	2	4	4	0.88460391
remov_nois	3	3	9	9	0.124593796
similar_approach	2	2	4	4	0.88460391
system_refer	4	4	16	16	-0.635416318
tool_provid	1	1	1	1	1.644614023
transact_pattern	1	1	1	1	1.644614023
analysi_knowledg	1	1	1	1	1.644614023
base_appli	1	1	1	1	1.644614023

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
base_rank	1	1	1	1	1.644614023
classifi_term	4	3	12	16	0.364583682
crucial_role	3	2	6	9	1.124593796
featur_learn	2	2	4	4	0.88460391
field_data	2	2	4	4	0.88460391
function_defin	1	1	1	1	1.644614023
gener_architectur	3	2	6	9	1.124593796
good_featur	2	2	4	4	0.88460391
lemmat_word	5	5	25	25	-1.395426431
mathemat_scienc	3	3	9	9	0.124593796
media_content	1	1	1	1	1.644614023
model_machin	2	2	4	4	0.88460391
morpho_syntact	4	2	8	16	1.364583682
number_attribut	1	1	1	1	1.644614023
number_concept	1	1	1	1	1.644614023
perform_dataset	2	2	4	4	0.88460391
similar_group	1	1	1	1	1.644614023
simpl_probabilist	2	2	4	4	0.88460391
solv_issu	1	1	1	1	1.644614023
split_text	2	1	2	4	1.88460391
step_find	1	1	1	1	1.644614023
stochast_gradient	2	2	4	4	0.88460391
text_step	1	1	1	1	1.644614023
third_type	3	1	3	9	2.124593796
type_system	1	1	1	1	1.644614023
cluster_correspond	1	1	1	1	1.644614023
compar_origin	2	1	2	4	1.88460391
sequenc_model	1	1	1	1	1.644614023
rule_defin	2	2	4	4	0.88460391
correspond_featur	2	2	4	4	0.88460391
process_search	1	1	1	1	1.644614023
therefor_develop	1	1	1	1	1.644614023
word_indic	1	1	1	1	1.644614023
categori_us	3	3	9	9	0.124593796
classif_new	3	3	9	9	0.124593796
correspond_topic	2	2	4	4	0.88460391
dictionari_dictionari	2	2	4	4	0.88460391
document_normal	4	3	12	16	0.364583682

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
engin_retriev	1	1	1	1	1.644614023
inquiri_word	4	3	12	16	0.364583682
remov_arab	2	1	2	4	1.88460391
requir_addit	2	2	4	4	0.88460391
step_token	1	1	1	1	1.644614023
us_normal	2	2	4	4	0.88460391
alphabet_charact	4	3	12	16	0.364583682
base_implement	1	1	1	1	1.644614023
base_pattern	4	2	8	16	1.364583682
base_probabl	1	1	1	1	1.644614023
case_text	1	1	1	1	1.644614023
charact_punctuat	1	1	1	1	1.644614023
engin_inform	1	1	1	1	1.644614023
extract_phrase	5	2	10	25	1.604573569
initi_step	3	3	9	9	0.124593796
measur_qualiti	4	4	16	16	-0.635416318
method_effect	2	2	4	4	0.88460391
model_calcul	1	1	1	1	1.644614023
particular_case	4	3	12	16	0.364583682
rapid_develop	2	2	4	4	0.88460391
string_number	1	1	1	1	1.644614023
system_make	3	3	9	9	0.124593796
toulous_franc	4	3	12	16	0.364583682
us_resourc	1	1	1	1	1.644614023
valu_model	1	1	1	1	1.644614023
vector_length	1	1	1	1	1.644614023
word_porter	2	2	4	4	0.88460391
approach_found	2	2	4	4	0.88460391
call_term	6	6	36	36	-2.155436545
classifi_decis	2	2	4	4	0.88460391
content_tweet	2	1	2	4	1.88460391
database_commun	3	2	6	9	1.124593796
document_specif	1	1	1	1	1.644614023
human_social	4	2	8	16	1.364583682
inform_analysi	3	2	6	9	1.124593796
linguist_volum	4	4	16	16	-0.635416318
method_case	1	1	1	1	1.644614023
model_thu	1	1	1	1	1.644614023

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
page_contain	1	1	1	1	1.644614023
partial_support	2	1	2	4	1.88460391
plai_crucial	3	2	6	9	1.124593796
problem_includ	1	1	1	1	1.644614023
scienc_softwar	2	2	4	4	0.88460391
step_approach	1	1	1	1	1.644614023
step_featur	1	1	1	1	1.644614023
studi_comput	1	1	1	1	1.644614023
system_capabl	4	2	8	16	1.364583682
system_project	1	1	1	1	1.644614023
techniqu_help	1	1	1	1	1.644614023
techniqu_perform	3	3	9	9	0.124593796
text_twitter	1	1	1	1	1.644614023
time_exampl	2	2	4	4	0.88460391
tool_gener	3	3	9	9	0.124593796
us_preprocess	1	1	1	1	1.644614023
vector_contain	2	2	4	4	0.88460391
document_phrase	3	3	9	9	0.124593796
text_vector	2	2	4	4	0.88460391
algorithm_given	1	1	1	1	1.644614023
method_word	2	2	4	4	0.88460391
problem_word	2	2	4	4	0.88460391
spend_time	1	1	1	1	1.644614023
state_model	2	1	2	4	1.88460391
combin_term	2	2	4	4	0.88460391
effici_search	1	1	1	1	1.644614023
enorm_amount	2	2	4	4	0.88460391
further_increas	2	1	2	4	1.88460391
model_addit	2	2	4	4	0.88460391
model_requir	2	2	4	4	0.88460391
select_topic	2	2	4	4	0.88460391
term_search	2	2	4	4	0.88460391
test_compar	1	1	1	1	1.644614023
addit_word	1	1	1	1	1.644614023
analysi_applic	3	3	9	9	0.124593796
approach_reli	1	1	1	1	1.644614023
databas_search	2	2	4	4	0.88460391
elimin_stem	3	3	9	9	0.124593796

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
eval_uation	1	1	1	1	1.644614023
identifi_similar	2	2	4	4	0.88460391
knowledg_document	3	2	6	9	1.124593796
network_machin	1	1	1	1	1.644614023
split_data	1	1	1	1	1.644614023
steinbach_karypi	3	3	9	9	0.124593796
store_file	4	2	8	16	1.364583682
topic_exampl	2	1	2	4	1.88460391
user_data	1	1	1	1	1.644614023
valu_posit	1	1	1	1	1.644614023
accord_word	3	3	9	9	0.124593796
algorithm_determin	2	2	4	4	0.88460391
anger_fear	2	1	2	4	1.88460391
approach_consist	2	2	4	4	0.88460391
approach_outperform	1	1	1	1	1.644614023
candid_gener	1	1	1	1	1.644614023
choos_number	1	1	1	1	1.644614023
collect_period	2	2	4	4	0.88460391
compar_number	3	3	9	9	0.124593796
construct_graph	3	1	3	9	2.124593796
count_time	6	2	12	36	1.844563455
descrip_tion	3	2	6	9	1.124593796
design_algorithm	5	5	25	25	-1.395426431
document_view	1	1	1	1	1.644614023
extract_textual	3	3	9	9	0.124593796
featur_preprocess	1	1	1	1	1.644614023
filter_step	1	1	1	1	1.644614023
help_classifi	1	1	1	1	1.644614023
independ_given	1	1	1	1	1.644614023
knowledg_sourc	2	2	4	4	0.88460391
label_class	1	1	1	1	1.644614023
method_produc	1	1	1	1	1.644614023
overal_score	5	1	5	25	2.604573569
process_human	1	1	1	1	1.644614023
step_construct	2	2	4	4	0.88460391
strength_weak	6	4	24	36	-0.155436545
test_purpos	2	2	4	4	0.88460391
us_extern	1	1	1	1	1.644614023

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
word_divid	3	2	6	9	1.124593796
word_system	3	3	9	9	0.124593796
topic_categor	1	1	1	1	1.644614023
consid_time	1	1	1	1	1.644614023
data_partit	2	2	4	4	0.88460391
exist_document	2	2	4	4	0.88460391
featur_name	1	1	1	1	1.644614023
iter_step	1	1	1	1	1.644614023
label_base	1	1	1	1	1.644614023
media_platform	1	1	1	1	1.644614023
method_keyword	2	2	4	4	0.88460391
base_frequent	2	2	4	4	0.88460391
cate_gori	2	2	4	4	0.88460391
comparison_baselin	1	1	1	1	1.644614023
comput_perform	2	2	4	4	0.88460391
consid_case	1	1	1	1	1.644614023
dataset_method	1	1	1	1	1.644614023
distribut_represent	2	2	4	4	0.88460391
introduc_concept	2	2	4	4	0.88460391
level_document	1	1	1	1	1.644614023
metric_text	2	2	4	4	0.88460391
queri_gener	4	4	16	16	-0.635416318
support_grant	1	1	1	1	1.644614023
user_perform	1	1	1	1	1.644614023
variou_approach	4	4	16	16	-0.635416318
accuraci_number	1	1	1	1	1.644614023
affect_user	1	1	1	1	1.644614023
analysi_emot	1	1	1	1	1.644614023
analysi_featur	3	3	9	9	0.124593796
analysi_order	1	1	1	1	1.644614023
averag_sentenc	1	1	1	1	1.644614023
categori_tweet	1	1	1	1	1.644614023
contain_singl	2	1	2	4	1.88460391
discoveri_databas	3	3	9	9	0.124593796
distanc_calcul	1	1	1	1	1.644614023
experi_featur	1	1	1	1	1.644614023
graph_structur	3	2	6	9	1.124593796
increas_precis	3	2	6	9	1.124593796

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
keyword_cluster	2	2	4	4	0.88460391
level_system	1	1	1	1	1.644614023
main_sourc	1	1	1	1	1.644614023
neg_affect	2	1	2	4	1.88460391
network_data	1	1	1	1	1.644614023
order_base	1	1	1	1	1.644614023
process_construct	3	3	9	9	0.124593796
sampl_test	1	1	1	1	1.644614023
step_build	2	2	4	4	0.88460391
us_exampl	4	3	12	16	0.364583682
user_give	2	1	2	4	1.88460391
vector_calcul	1	1	1	1	1.644614023
word_retriev	1	1	1	1	1.644614023
written_java	1	1	1	1	1.644614023
ad_word	2	2	4	4	0.88460391
extern_sourc	1	1	1	1	1.644614023
featur_posit	1	1	1	1	1.644614023
overal_system	2	1	2	4	1.88460391
stem_languag	1	1	1	1	1.644614023
algorithm_consid	2	2	4	4	0.88460391
automat_creation	2	2	4	4	0.88460391
cluster_unsupervis	2	2	4	4	0.88460391
dataset_compar	1	1	1	1	1.644614023
describ_algorithm	1	1	1	1	1.644614023
effici_cluster	2	1	2	4	1.88460391
full_word	2	1	2	4	1.88460391
model_human	1	1	1	1	1.644614023
punctuat_stop	1	1	1	1	1.644614023
rang_valu	1	1	1	1	1.644614023
remov_frequent	2	2	4	4	0.88460391
sampl_word	2	2	4	4	0.88460391
time_text	2	2	4	4	0.88460391
word_affect	3	2	6	9	1.124593796
algorithm_obtain	3	3	9	9	0.124593796
approach_provid	2	2	4	4	0.88460391
calcul_step	2	2	4	4	0.88460391
difficult_languag	1	1	1	1	1.644614023
document_arab	1	1	1	1	1.644614023

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
equat_calcul	2	2	4	4	0.88460391
extract_variou	2	2	4	4	0.88460391
famili_member	2	2	4	4	0.88460391
index_base	1	1	1	1	1.644614023
indic_cluster	2	1	2	4	1.88460391
inform_becom	2	2	4	4	0.88460391
manual_extract	1	1	1	1	1.644614023
metric_base	1	1	1	1	1.644614023
miller_wordnet	2	2	4	4	0.88460391
perform_supervis	1	1	1	1	1.644614023
process_design	1	1	1	1	1.644614023
process_part	1	1	1	1	1.644614023
score_method	1	1	1	1	1.644614023
stream_text	3	3	9	9	0.124593796
system_conclus	2	2	4	4	0.88460391
test_split	1	1	1	1	1.644614023
topic_cover	1	1	1	1	1.644614023
uniqu_featur	1	1	1	1	1.644614023
user_send	1	1	1	1	1.644614023
predict_categor	1	1	1	1	1.644614023
annual_symposium	1	1	1	1	1.644614023
model_respect	1	1	1	1	1.644614023
analysi_time	2	2	4	4	0.88460391
approach_deal	2	1	2	4	1.88460391
base_natur	3	3	9	9	0.124593796
collect_user	1	1	1	1	1.644614023
creation_literatur	1	1	1	1	1.644614023
data_group	1	1	1	1	1.644614023
document_pars	1	1	1	1	1.644614023
exampl_queri	1	1	1	1	1.644614023
normal_us	2	2	4	4	0.88460391
topic_refer	3	3	9	9	0.124593796
complet_text	1	1	1	1	1.644614023
context_process	1	1	1	1	1.644614023
correl_topic	1	1	1	1	1.644614023
data_chang	2	2	4	4	0.88460391
help_peopl	1	1	1	1	1.644614023
inform_thu	2	2	4	4	0.88460391

Theme	2015 Tot	2015 Doc	XY	X^2	Distance
limit_word	3	3	9	9	0.124593796
method_exampl	2	2	4	4	0.88460391
mine_word	2	2	4	4	0.88460391
model_prove	1	1	1	1	1.644614023
model_singl	2	2	4	4	0.88460391
nois_data	1	1	1	1	1.644614023
perform_find	3	3	9	9	0.124593796
term_process	1	1	1	1	1.644614023
time_make	3	3	9	9	0.124593796
us_collect	2	2	4	4	0.88460391
us_determin	2	2	4	4	0.88460391
user_accord	1	1	1	1	1.644614023
valu_text	1	1	1	1	1.644614023
word_correl	1	1	1	1	1.644614023
mean_approach	1	1	1	1	1.644614023
current_version	2	2	4	4	0.88460391
martin_porter	1	1	1	1	1.644614023
obtain_relev	1	1	1	1	1.644614023
refer_mean	1	1	1	1	1.644614023
term_obtain	1	1	1	1	1.644614023
approach_discov	1	1	1	1	1.644614023
approach_estim	1	1	1	1	1.644614023
catégori_classif	3	2	6	9	1.124593796
classifi_built	1	1	1	1	1.644614023
classifi_simpl	1	1	1	1	1.644614023
data_initi	1	1	1	1	1.644614023
featur_input	1	1	1	1	1.644614023
function_determin	1	1	1	1	1.644614023
improv_document	1	1	1	1	1.644614023
measur_emot	1	1	1	1	1.644614023
preprocess_token	1	1	1	1	1.644614023
problem_lack	1	1	1	1	1.644614023
process_complet	1	1	1	1	1.644614023
provid_signific	2	1	2	4	1.88460391
select_group	3	1	3	9	2.124593796
system_stem	1	1	1	1	1.644614023
thousand_document	2	2	4	4	0.88460391
train_remain	2	2	4	4	0.88460391

<b>Theme</b>	<b>2015 Tot</b>	<b>2015 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
contain_user	1	1	1	1	1.644614023
email_address	1	1	1	1	1.644614023
account_order	1	1	1	1	1.644614023
accuraci_significantli	1	1	1	1	1.644614023
base_lexic	1	1	1	1	1.644614023
base_theori	1	1	1	1	1.644614023
becom_time	1	1	1	1	1.644614023
featur_task	1	1	1	1	1.644614023
limit_term	1	1	1	1	1.644614023
process_break	1	1	1	1	1.644614023
public_date	2	2	4	4	0.88460391
retriev_semant	1	1	1	1	1.644614023
space_number	1	1	1	1	1.644614023
studi_analysi	1	1	1	1	1.644614023
symposium_document	1	1	1	1	1.644614023
tree_approach	1	1	1	1	1.644614023
apach_core	1	1	1	1	1.644614023

## APPENDIX 5-K

This appendix contains the distance from trend calculations for 2016.

Column H	Column I
SUM x	23888.0
SUM Y	10432.0
SUM XY	248184
SUM X^2	1070598
n	2202
a	2.932504788
b	0.16638582
Trend Formula	$Y = 2.93250478784029 + 0.166385819540174X$

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
machin_learn	306	39	11934	93636	14.84656557
text_mine	174	45	7830	30276	-13.11636261
natur_languag	205	40	8200	42025	-2.958402206
inform_retriev	238	38	9044	56644	4.532329838
data_mine	122	32	3904	14884	-8.768425228
stop_word	216	39	8424	46656	-0.128158191
naiv_bay	111	20	2220	12321	1.401330757
text_classif	111	16	1776	12321	5.401330757
languag_process	145	41	5945	21025	-13.94155138
featur_select	115	15	1725	13225	7.066874035
text_document	92	27	2484	8464	-8.759999814
sentiment_analysi	77	14	1078	5929	1.744212892
neural_network	46	12	552	2116	-1.413747513
social_media	63	14	882	3969	-0.585188581
precis_recal	172	22	3784	29584	9.550865749
social_network	139	14	1946	19321	12.0601337
document_cluster	71	10	710	5041	4.745897975
part_speech	70	17	1190	4900	-2.420487844
comput_linguist	100	22	2200	10000	-2.428913258

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
arab_text	56	8	448	3136	4.250110682
topic_model	165	11	1815	27225	19.38616501
term_frequenc	93	25	2325	8649	-6.593613995
text_categor	49	16	784	2401	-4.914590055
support_vector	100	20	2000	10000	-0.428913258
vector_space	150	17	2550	22500	10.89037772
train_data	133	22	2926	17689	3.061818787
vector_machin	80	22	1760	6400	-5.756629649
name_entiti	172	7	1204	29584	24.55086575
search_engin	83	20	1660	6889	-3.25747219
similar_measur	90	17	1530	8100	0.907228546
document_frequenc	53	21	1113	2809	-9.249046777
featur_extract	92	12	1104	8464	6.240000186
posit_neg	60	12	720	3600	0.91565396
base_approach	38	21	798	1444	-11.74483407
term_weight	60	9	540	3600	3.91565396
text_process	41	23	943	1681	-13.24567661
text_analysi	130	22	2860	16900	2.562661328
learn_algorithm	60	19	1140	3600	-6.08434604
word_remov	65	31	2015	4225	-17.25241694
space_model	95	15	1425	9025	3.739157644
artifici_intellig	55	21	1155	3025	-8.916275137
cross_valid	95	11	1045	9025	7.739157644
arab_languag	68	7	476	4624	7.246740517
featur_vector	49	6	294	2401	5.085409945
stem_algorithm	64	15	960	4096	-1.418802762
cluster_algorithm	23	10	230	529	-3.240621363
word_document	57	22	1254	3249	-9.583503498
train_test	81	8	648	6561	8.409756171
scienc_engin	53	17	901	2809	-5.249046777
number_word	68	25	1700	4624	-10.75325948
word_stem	58	26	1508	3364	-13.41711768
inform_extract	24	14	336	576	-7.074235543
decis_tree	18	10	180	324	-4.07255046
document_collect	61	19	1159	3721	-5.91796022
semant_analysi	50	16	800	2500	-4.748204235
softwar_engin	35	9	315	1225	-0.243991528
document_document	29	18	522	841	-10.24230645

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
latent_semant	77	14	1078	5929	1.744212892
invers_document	40	19	760	1600	-9.412062431
retriev_system	68	16	1088	4624	-1.753259483
depart_comput	38	23	874	1444	-13.74483407
bay_classifi	45	11	495	2025	-0.580133333
test_data	49	14	686	2401	-2.914590055
cosin_similar	58	9	522	3364	3.582882321
document_term	42	15	630	1764	-5.079290791
data_process	36	12	432	1296	-3.077605709
data_set	30	15	450	900	-7.075920626
data_collect	21	10	210	441	-3.573393002
rule_base	38	17	646	1444	-7.74483407
word_list	66	17	1122	4356	-3.086031123
train_model	63	8	504	3969	5.414811419
keyword_extract	53	10	530	2809	1.750953223
random_forest	48	4	192	2304	6.919024126
base_method	27	13	351	729	-5.575078085
nearest_neighbor	23	8	184	529	-1.240621363
latent_dirichlet	45	11	495	2025	-0.580133333
stem_word	40	19	760	1600	-9.412062431
classif_algorithm	23	9	207	529	-2.240621363
porter_stemmer	18	7	126	324	-1.07255046
speech_tag	23	8	184	529	-1.240621363
mine_techniqu	30	10	300	900	-2.075920626
knowledg_base	57	15	855	3249	-2.583503498
scienc_technolog	15	11	165	225	-5.571707919
electr_engin	134	5	670	17956	20.22820461
supervis_learn	35	11	385	1225	-2.243991528
semant_similar	78	11	858	6084	4.910598712
model_base	21	10	210	441	-3.573393002
base_featur	45	10	450	2025	0.419866667
engin_comput	133	6	798	17689	19.06181879
light_stem	16	6	96	256	-0.4053221
text_file	31	14	434	961	-5.909534806
cloud_comput	31	2	62	961	6.090465194
data_analysi	37	11	407	1369	-1.911219889
document_contain	27	11	297	729	-3.575078085
dirichlet_alloc	41	11	451	1681	-1.245676611

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
automat_text	41	11	451	1681	-1.245676611
remov_stop	43	19	817	1849	-8.912904972
engin_technolog	58	14	812	3364	-1.417117679
cluster_cluster	52	11	572	2704	0.584567404
document_classif	20	8	160	400	-1.739778821
word_sentenc	29	12	348	841	-4.242306445
model_us	26	8	208	676	-0.741463904
word_frequenc	49	14	686	2401	-2.914590055
languag_model	35	8	280	1225	0.756008472
classif_us	15	9	135	225	-3.571707919
solv_problem	27	11	297	729	-3.575078085
system_us	28	9	252	784	-1.408692265
recal_precis	40	13	520	1600	-3.412062431
learn_approach	42	13	546	1764	-3.079290791
document_summar	45	7	315	2025	3.419866667
frequenc_word	42	14	588	1764	-4.079290791
inform_scienc	33	17	561	1089	-8.576763167
word_text	20	9	180	400	-2.739778821
frequenc_term	19	12	228	361	-5.906164641
frequenc_invers	22	15	330	484	-8.407007182
improv_perform	14	10	140	196	-4.738093739
relev_document	47	18	846	2209	-7.247361694
inform_process	27	14	378	729	-6.575078085
comput_applic	7	7	49	49	-2.902794475
document_word	39	20	780	1521	-10.57844825
extract_featur	22	9	198	484	-2.407007182
compar_studi	21	11	231	441	-4.573393002
method_base	25	11	275	625	-3.907849724
select_method	6	4	24	36	-0.069180295
recal_measur	20	10	200	400	-3.739778821
classif_accuraci	10	6	60	100	-1.403637017
number_time	27	14	378	729	-6.575078085
topic_topic	27	10	270	729	-2.575078085
learn_model	58	9	522	3364	3.582882321
document_repres	20	9	180	400	-2.739778821
languag_text	21	13	273	441	-6.573393002
learn_techniqu	30	13	390	900	-5.075920626
cluster_method	8	6	48	64	-1.736408656

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
similar_document	33	11	363	1089	-2.576763167
multi_document	23	6	138	529	0.759378637
base_model	23	10	230	529	-3.240621363
number_featur	13	4	52	169	1.095520442
document_us	25	14	350	625	-6.907849724
knowledg_discoveri	14	12	168	196	-6.738093739
word_appear	40	14	560	1600	-4.412062431
word_featur	63	7	441	3969	6.414811419
document_vector	26	7	182	676	0.258536096
mean_word	24	13	312	576	-6.074235543
extract_text	29	15	435	841	-7.242306445
textual_data	21	14	294	441	-7.573393002
form_word	33	13	429	1089	-4.576763167
model_inform	4	3	12	16	0.598048066
repres_document	18	14	252	324	-8.07255046
model_model	37	6	222	1369	3.088780111
process_step	24	17	408	576	-10.07423554
extract_inform	17	12	204	289	-6.23893628
base_similar	29	10	290	841	-2.242306445
languag_technolog	19	13	247	361	-6.906164641
word_base	24	13	312	576	-6.074235543
comput_engin	23	12	276	529	-5.240621363
scienc_inform	43	12	516	1849	-1.912904972
right_reserv	9	3	27	81	1.429977164
opinion_mine	10	7	70	100	-2.403637017
process_text	19	15	285	361	-8.906164641
evalu_metric	28	5	140	784	2.591307735
manag_system	30	5	150	900	2.924079374
classif_task	25	6	150	625	1.092150276
document_number	13	8	104	169	-2.904479558
stem_process	22	14	308	484	-7.407007182
test_dataset	50	8	400	2500	3.251795765
document_represent	17	8	136	289	-2.23893628
noun_verb	23	9	207	529	-2.240621363
weight_term	15	6	90	225	-0.571707919
us_word	29	13	377	841	-5.242306445
amount_data	26	12	312	676	-4.741463904
word_model	40	10	400	1600	-0.412062431

<b>Theme</b>	<b>2016 Tot</b>	<b>2016 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
document_matrix	23	10	230	529	-3.240621363
number_topic	52	7	364	2704	4.584567404
fold_cross	35	8	280	1225	0.756008472
similar_word	37	12	444	1369	-2.911219889
word_vector	44	4	176	1936	6.253480848
sentenc_document	21	8	168	441	-1.573393002
featur_space	10	7	70	100	-2.403637017
averag_precis	51	7	357	2601	4.418181584
term_base	9	9	81	81	-4.570022836
mean_cluster	25	9	225	625	-1.907849724
logist_regress	63	6	378	3969	7.414811419
term_extract	37	6	222	1369	3.088780111
collect_document	17	8	136	289	-2.23893628
recal_score	68	5	340	4624	9.246740517
us_data	10	6	60	100	-1.403637017
khoja_stemmer	19	2	38	361	4.093835359
text_content	24	10	240	576	-3.074235543
stock_market	6	1	6	36	2.930819705
number_cluster	15	7	105	225	-1.571707919
morpholog_analysi	18	8	144	324	-2.07255046
pattern_recognit	11	7	77	121	-2.237251197
us_inform	22	13	286	484	-6.407007182
data_data	11	9	99	121	-4.237251197
contain_word	32	16	512	1024	-7.743148987
classif_model	15	6	90	225	-0.571707919
base_text	22	11	242	484	-4.407007182
step_step	12	7	84	144	-2.070865378
user_queri	19	13	247	361	-6.906164641
model_train	46	8	368	2116	2.586252487
train_document	11	4	44	121	0.762748803
featur_featur	31	5	155	961	3.090465194
index_term	21	10	210	441	-3.573393002
select_featur	24	6	144	576	0.925764457
unstructur_data	13	6	78	169	-0.904479558
arab_document	20	6	120	400	0.260221179
us_machin	29	12	348	841	-4.242306445
time_consum	5	5	25	25	-1.235566114
algorithm_base	24	15	360	576	-8.074235543

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
analysi_retriev	88	5	440	7744	12.57445691
knowledg_manag	28	12	336	784	-4.408692265
cluster_base	8	5	40	64	-0.736408656
cluster_document	12	7	84	144	-2.070865378
learn_method	24	12	288	576	-5.074235543
improv_accuraci	14	9	126	196	-3.738093739
word_mean	23	14	322	529	-7.240621363
textual_content	4	3	12	16	0.598048066
cluster_us	9	6	54	81	-1.570022836
human_languag	19	12	228	361	-5.906164641
predict_model	12	7	84	144	-2.070865378
weight_scheme	20	6	120	400	0.260221179
base_system	10	6	60	100	-1.403637017
intellig_system	15	11	165	225	-5.571707919
collect_data	13	7	91	169	-1.904479558
comput_inform	14	8	112	196	-2.738093739
mobil_devic	36	4	144	1296	4.922394291
word_occurr	13	8	104	169	-2.904479558
document_text	20	12	240	400	-5.739778821
classifi_classifi	16	5	80	256	0.5946779
cluster_techniqu	15	5	75	225	0.428292081
term_occur	17	8	136	289	-2.23893628
gold_standard	47	8	376	2209	2.752638306
queri_term	22	6	132	484	0.592992818
mean_algorithm	14	6	84	196	-0.738093739
world_wide	28	16	448	784	-8.408692265
text_preprocess	22	8	176	484	-1.407007182
system_develop	15	6	90	225	-0.571707919
term_term	17	9	153	289	-3.23893628
develop_inform	19	9	171	361	-2.906164641
point_view	11	6	66	121	-1.237251197
word_root	29	11	319	841	-3.242306445
recommend_system	3	2	6	9	1.431662246
maximum_entropi	6	4	24	36	-0.069180295
stem_stem	20	8	160	400	-1.739778821
error_rate	18	7	126	324	-1.07255046
plai_role	10	7	70	100	-2.403637017
singl_word	32	13	416	1024	-4.743148987

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
prefix_suffix	35	11	385	1225	-2.243991528
imag_process	15	7	105	225	-1.571707919
root_word	21	9	189	441	-2.573393002
document_retriev	14	9	126	196	-3.738093739
retriev_document	21	15	315	441	-8.573393002
spam_filter	6	3	18	36	0.930819705
occur_document	23	12	276	529	-5.240621363
increas_number	14	10	140	196	-4.738093739
system_base	13	7	91	169	-1.904479558
classif_method	13	9	117	169	-3.904479558
comput_system	18	5	90	324	0.92744954
inform_gain	10	3	30	100	1.596362983
data_train	25	13	325	625	-5.907849724
document_similar	30	10	300	900	-2.075920626
us_text	24	15	360	576	-8.074235543
docu_ment	33	7	231	1089	1.423236833
sourc_text	8	4	32	64	0.263591344
full_text	26	8	208	676	-0.741463904
latent_topic	6	6	36	36	-2.069180295
model_text	14	11	154	196	-5.738093739
advanc_comput	13	5	65	169	0.095520442
genet_algorithm	7	5	35	49	-0.902794475
knowledg_data	17	7	119	289	-1.23893628
search_queri	12	7	84	144	-2.070865378
frequent_word	19	8	152	361	-1.906164641
inform_text	16	10	160	256	-4.4053221
term_appear	8	6	48	64	-1.736408656
class_label	9	3	27	81	1.429977164
train_dataset	39	7	273	1521	2.42155175
number_term	11	7	77	121	-2.237251197
probabl_distribut	30	10	300	900	-2.075920626
preprocess_step	19	7	133	361	-0.906164641
porter_stem	27	6	162	729	1.424921915
issn_onlin	34	8	272	1156	0.589622652
linguist_featur	11	6	66	121	-1.237251197
similar_score	29	8	232	841	-0.242306445
text_retriev	30	12	360	900	-4.075920626
evalu_us	18	9	162	324	-3.07255046

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
word_occur	28	13	364	784	-5.408692265
condit_probabl	17	6	102	289	-0.23893628
data_engin	13	6	78	169	-0.904479558
test_document	7	4	28	49	0.097205525
process_manag	22	8	176	484	-1.407007182
exampl_word	14	7	98	196	-1.738093739
languag_resourc	14	7	98	196	-1.738093739
reduc_number	12	8	96	144	-3.070865378
base_term	34	7	238	1156	1.589622652
approach_base	11	8	88	121	-3.237251197
base_classifi	10	2	20	100	2.596362983
process_techniqu	11	6	66	121	-1.237251197
fals_posit	19	7	133	361	-0.906164641
frequent_pattern	14	1	14	196	4.261906261
comput_commun	2	2	4	4	1.265276427
extract_keyword	17	5	85	289	0.76106372
deep_learn	16	3	48	256	2.5946779
method_us	17	10	170	289	-4.23893628
phrase_base	7	3	21	49	1.097205525
document_corpu	15	10	150	225	-4.571707919
inform_knowledg	14	10	140	196	-4.738093739
classifi_text	20	11	220	400	-4.739778821
word_extract	9	5	45	81	-0.570022836
word_count	32	11	352	1024	-2.743148987
retriev_inform	9	9	81	81	-4.570022836
list_word	25	12	300	625	-4.907849724
structur_data	3	2	6	9	1.431662246
input_data	28	9	252	784	-1.408692265
appear_document	26	10	260	676	-2.741463904
train_classifi	25	7	175	625	0.092150276
sentenc_sentenc	8	5	40	64	-0.736408656
classifi_us	8	6	48	64	-1.736408656
text_us	16	14	224	256	-8.4053221
combin_featur	34	5	170	1156	3.589622652
classifi_train	31	4	124	961	4.090465194
approach_us	19	15	285	361	-8.906164641
document_queri	34	6	204	1156	2.589622652
classif_problem	21	6	126	441	0.426606998

<b>Theme</b>	<b>2016 Tot</b>	<b>2016 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
object_function	5	3	15	25	0.764433886
text_corpu	21	10	210	441	-3.573393002
process_inform	13	11	143	169	-5.904479558
document_base	15	9	135	225	-3.571707919
infor_mation	14	4	56	196	1.261906261
level_featur	8	4	32	64	0.263591344
system_perform	22	10	220	484	-3.407007182
program_languag	42	12	504	1764	-2.079290791
system_applic	5	5	25	25	-1.235566114
queri_expans	16	4	64	256	1.5946779
word_order	16	9	144	256	-3.4053221
algorithm_algorithm	17	11	187	289	-5.23893628
text_base	16	10	160	256	-4.4053221
pattern_mine	3	3	9	9	0.431662246
issn_volum	10	2	20	100	2.596362983
remov_stem	12	10	120	144	-5.070865378
evalu_measur	22	5	110	484	1.592992818
artifici_neural	6	3	18	36	0.930819705
document_featur	12	6	72	144	-1.070865378
view_project	14	9	126	196	-3.738093739
model_evalu	30	8	240	900	-0.075920626
media_text	3	3	9	9	0.431662246
euclidean_distanc	12	5	60	144	-0.070865378
contain_term	19	8	152	361	-1.906164641
algorithm_perform	22	11	242	484	-4.407007182
extract_us	20	13	260	400	-6.739778821
colleg_engin	10	7	70	100	-2.403637017
build_model	8	4	32	64	0.263591344
linguist_analysi	4	4	16	16	-0.401951934
engin_scien	12	4	48	144	0.929134622
contain_document	13	8	104	169	-2.904479558
singl_document	25	11	275	625	-3.907849724
data_structur	19	9	171	361	-2.906164641
system_design	14	8	112	196	-2.738093739
soft_comput	12	6	72	144	-1.070865378
volum_number	9	3	27	81	1.429977164
relev_inform	10	7	70	100	-2.403637017
process_document	14	11	154	196	-5.738093739

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
text_featur	7	5	35	49	-0.902794475
cluster_process	20	4	80	400	2.260221179
word_us	20	12	240	400	-5.739778821
classif_process	8	4	32	64	0.263591344
word_term	27	17	459	729	-9.575078085
perform_test	16	8	128	256	-2.4053221
input_output	13	3	39	169	2.095520442
user_request	13	13	169	169	-7.904479558
word_embed	24	2	48	576	4.925764457
random_field	38	8	304	1444	1.25516593
featur_base	16	7	112	256	-1.4053221
public_http	18	13	234	324	-7.07255046
word_topic	14	7	98	196	-1.738093739
number_iter	12	3	36	144	1.929134622
unigram_bigram	10	3	30	100	1.596362983
allow_user	14	12	168	196	-6.738093739
design_implement	11	6	66	121	-1.237251197
content_base	21	3	63	441	3.426606998
semant_index	27	7	189	729	0.424921915
cluster_text	13	6	78	169	-0.904479558
mathemat_model	23	2	46	529	4.759378637
document_process	12	8	96	144	-3.070865378
algorithm_us	16	13	208	256	-7.4053221
period_time	8	3	24	64	1.263591344
word_sens	11	8	88	121	-3.237251197
content_page	11	11	121	121	-6.237251197
wide_rang	15	8	120	225	-2.571707919
comput_time	15	6	90	225	-0.571707919
autom_text	11	9	99	121	-4.237251197
document_topic	17	10	170	289	-4.23893628
syntact_semant	2	2	4	4	1.265276427
method_text	14	6	84	196	-0.738093739
unsupervis_learn	12	7	84	144	-2.070865378
discoveri_data	10	7	70	100	-2.403637017
informa_tion	31	6	186	961	2.090465194
data_text	16	10	160	256	-4.4053221
topic_document	14	8	112	196	-2.738093739
emot_recognit	47	2	94	2209	8.752638306

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
perform_us	12	9	108	144	-4.070865378
base_word	15	11	165	225	-5.571707919
vector_represent	14	4	56	196	1.261906261
us_featur	15	10	150	225	-4.571707919
measur_similar	12	7	84	144	-2.070865378
corpu_base	21	7	147	441	-0.573393002
text_word	16	9	144	256	-3.4053221
graph_base	6	5	30	36	-1.069180295
semant_featur	27	5	135	729	2.424921915
confus_matrix	21	5	105	441	1.426606998
emot_classif	3	2	6	9	1.431662246
network_analysi	15	3	45	225	2.428292081
unstructur_text	10	5	50	100	-0.403637017
origin_document	12	7	84	144	-2.070865378
proc_conf	6	3	18	36	0.930819705
sentenc_word	12	6	72	144	-1.070865378
distanc_measur	6	5	30	36	-1.069180295
berlin_heidelberg	10	8	80	100	-3.403637017
measur_precis	6	6	36	36	-2.069180295
similar_sentenc	23	4	92	529	2.759378637
represent_document	11	9	99	121	-4.237251197
train_corpu	30	4	120	900	3.924079374
uniqu_word	28	10	280	784	-2.408692265
data_model	14	7	98	196	-1.738093739
hierarch_cluster	5	3	15	25	0.764433886
probabilist_model	20	7	140	400	-0.739778821
evalu_perform	14	11	154	196	-5.738093739
model_perform	25	8	200	625	-0.907849724
word_level	3	3	9	9	0.431662246
pattern_base	12	4	48	144	0.929134622
classif_techniqu	6	4	24	36	-0.069180295
calcul_us	12	7	84	144	-2.070865378
data_sourc	7	4	28	49	0.097205525
occurr_word	20	9	180	400	-2.739778821
commun_technolog	21	5	105	441	1.426606998
stem_arab	10	5	50	100	-0.403637017
inform_commun	24	5	120	576	1.925764457
taken_account	10	6	60	100	-1.403637017

<b>Theme</b>	<b>2016 Tot</b>	<b>2016 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
fals_neg	17	6	102	289	-0.23893628
tweet_contain	26	5	130	676	2.258536096
occur_term	9	4	36	81	0.429977164
base_cluster	8	5	40	64	-0.736408656
reduc_dimension	12	5	60	144	-0.070865378
system_evalu	25	10	250	625	-2.907849724
word_given	25	11	275	625	-3.907849724
mine_text	12	4	48	144	0.929134622
dataset_dataset	17	7	119	289	-1.23893628
process_time	15	6	90	225	-0.571707919
time_period	7	4	28	49	0.097205525
automat_extract	5	4	20	25	-0.235566114
dataset_consist	21	6	126	441	0.426606998
file_contain	27	7	189	729	0.424921915
test_perform	8	4	32	64	0.263591344
share_task	12	5	60	144	-0.070865378
document_train	6	5	30	36	-1.069180295
word_cluster	12	6	72	144	-1.070865378
user_gener	6	5	30	36	-1.069180295
base_semant	23	9	207	529	-2.240621363
statist_analysi	17	5	85	289	0.76106372
transact_knowledg	8	5	40	64	-0.736408656
model_built	15	5	75	225	0.428292081
twitter_user	23	6	138	529	0.759378637
model_document	9	7	63	81	-2.570022836
retriev_relev	12	9	108	144	-4.070865378
gram_gram	4	1	4	16	2.598048066
speech_recognit	17	4	68	289	1.76106372
linear_regress	21	5	105	441	1.426606998
data_point	8	3	24	64	1.263591344
common_word	10	10	100	100	-5.403637017
signal_process	5	4	20	25	-0.235566114
calcul_similar	10	5	50	100	-0.403637017
system_system	11	7	77	121	-2.237251197
model_data	13	8	104	169	-2.904479558
standard_arab	6	5	30	36	-1.069180295
perform_system	24	9	216	576	-2.074235543
valu_calcul	16	9	144	256	-3.4053221

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
cluster_similar	7	6	42	49	-1.902794475
classif_text	11	6	66	121	-1.237251197
frequenc_document	8	5	40	64	-0.736408656
perform_evalu	17	8	136	289	-2.23893628
precis_measur	15	6	90	225	-0.571707919
algorithm_appli	8	8	64	64	-3.736408656
text_classifi	15	4	60	225	1.428292081
model_predict	13	7	91	169	-1.904479558
analysi_method	7	4	28	49	0.097205525
algo_rithm	21	8	168	441	-1.573393002
distribut_topic	25	8	200	625	-0.907849724
classifi_document	8	6	48	64	-1.736408656
text_collect	10	6	60	100	-1.403637017
extract_term	22	5	110	484	1.592992818
repres_vector	11	5	55	121	-0.237251197
word_categori	17	5	85	289	0.76106372
accuraci_precis	28	6	168	784	1.591307735
punctuat_mark	8	7	56	64	-2.736408656
test_set	23	3	69	529	3.759378637
data_extract	7	5	35	49	-0.902794475
comput_technolog	9	5	45	81	-0.570022836
word_represent	17	6	102	289	-0.23893628
tabl_perform	9	7	63	81	-2.570022836
neg_exampl	13	4	52	169	1.095520442
featur_word	21	8	168	441	-1.573393002
rule_mine	14	2	28	196	3.261906261
test_test	13	6	78	169	-0.904479558
us_porter	5	3	15	25	0.764433886
content_document	5	5	25	25	-1.235566114
word_gener	16	7	112	256	-1.4053221
document_model	28	8	224	784	-0.408692265
gener_word	24	9	216	576	-2.074235543
featur_valu	20	6	120	400	0.260221179
highest_accuraci	3	2	6	9	1.431662246
mine_method	8	6	48	64	-1.736408656
develop_model	7	4	28	49	0.097205525
lexic_databas	18	7	126	324	-1.07255046
regress_model	25	4	100	625	3.092150276

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
tweet_user	9	4	36	81	0.429977164
class_class	10	6	60	100	-1.403637017
classif_cluster	16	8	128	256	-2.4053221
featur_text	5	4	20	25	-0.235566114
stem_stop	12	7	84	144	-2.070865378
process_system	8	7	56	64	-2.736408656
process_extract	6	4	24	36	-0.069180295
develop_system	13	5	65	169	0.095520442
implement_us	10	8	80	100	-3.403637017
request_enhanc	11	11	121	121	-6.237251197
dataset_contain	17	7	119	289	-1.23893628
extract_word	11	6	66	121	-1.237251197
model_featur	21	6	126	441	0.426606998
comput_vision	22	9	198	484	-2.407007182
us_classifi	6	4	24	36	-0.069180295
train_exampl	10	5	50	100	-0.403637017
evalu_system	11	4	44	121	0.762748803
word_contain	21	9	189	441	-2.573393002
method_appli	12	10	120	144	-5.070865378
extract_method	7	6	42	49	-1.902794475
token_token	9	6	54	81	-1.570022836
repres_text	7	4	28	49	0.097205525
retriev_text	15	10	150	225	-4.571707919
discuss_stat	11	11	121	121	-6.237251197
enhanc_download	11	11	121	121	-6.237251197
public_stat	11	11	121	121	-6.237251197
view_public	11	11	121	121	-6.237251197
word_dictionari	18	6	108	324	-0.07255046
cluster_number	8	4	32	64	0.263591344
word_repres	7	7	49	49	-2.902794475
correl_coeffici	31	5	155	961	3.090465194
statist_machin	3	3	9	9	0.431662246
porter_algorithm	9	6	54	81	-1.570022836
twitter_data	5	3	15	25	0.764433886
mine_algorithm	7	3	21	49	1.097205525
extract_document	10	6	60	100	-1.403637017
sentenc_text	14	6	84	196	-0.738093739
semant_relationship	5	5	25	25	-1.235566114

<b>Theme</b>	<b>2016 Tot</b>	<b>2016 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
techniqu_text	5	5	25	25	-1.235566114
make_process	13	5	65	169	0.095520442
human_resourc	15	2	30	225	3.428292081
qualiti_cluster	3	3	9	9	0.431662246
relev_featur	6	6	36	36	-2.069180295
manual_label	21	7	147	441	-0.573393002
represent_model	4	2	8	16	1.598048066
word_consid	18	9	162	324	-3.07255046
publiccli_avail	15	8	120	225	-2.571707919
automat_index	3	3	9	9	0.431662246
springer_verlag	1	1	1	1	2.098890607
distribut_word	11	6	66	121	-1.237251197
keyword_text	13	11	143	169	-5.904479558
word_similar	10	8	80	100	-3.403637017
root_stem	4	3	12	16	0.598048066
measur_accuraci	14	6	84	196	-0.738093739
cluster_approach	5	5	25	25	-1.235566114
classif_approach	17	6	102	289	-0.23893628
interest_includ	7	5	35	49	-0.902794475
inform_document	10	7	70	100	-2.403637017
mine_inform	7	7	49	49	-2.902794475
document_index	12	6	72	144	-1.070865378
featur_document	6	4	24	36	-0.069180295
model_repres	8	6	48	64	-1.736408656
neg_word	14	6	84	196	-0.738093739
sequenc_word	5	5	25	25	-1.235566114
perform_model	23	7	161	529	-0.240621363
sens_disambigu	8	7	56	64	-2.736408656
data_base	11	7	77	121	-2.237251197
model_select	16	6	96	256	-0.4053221
search_space	9	4	36	81	0.429977164
tweet_tweet	15	4	60	225	1.428292081
predict_stock	2	1	2	4	2.265276427
classifi_base	10	5	50	100	-0.403637017
select_text	5	4	20	25	-0.235566114
bay_algorithm	4	3	12	16	0.598048066
represent_text	12	6	72	144	-1.070865378
resourc_evalu	5	4	20	25	-0.235566114

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
dimension_space	15	7	105	225	-1.571707919
main_idea	10	7	70	100	-2.403637017
tree_structur	18	2	36	324	3.92744954
algorithm_cluster	4	4	16	16	-0.401951934
word_stop	13	8	104	169	-2.904479558
measur_measur	6	6	36	36	-2.069180295
extract_sentenc	8	5	40	64	-0.736408656
problem_solv	10	4	40	100	0.596362983
word_corpu	29	11	319	841	-3.242306445
word_found	16	11	176	256	-5.4053221
base_search	5	1	5	25	2.764433886
data_store	10	7	70	100	-2.403637017
neg_neutral	2	1	2	4	2.265276427
issu_march	12	2	24	144	2.929134622
search_algorithm	5	4	20	25	-0.235566114
recal_valu	23	7	161	529	-0.240621363
techniqu_base	8	5	40	64	-0.736408656
data_preprocess	13	5	65	169	0.095520442
method_perform	5	5	25	25	-1.235566114
obtain_us	15	5	75	225	0.428292081
statist_model	12	5	60	144	-0.070865378
accuraci_rate	16	1	16	256	4.5946779
textual_inform	5	4	20	25	-0.235566114
cluster_data	7	7	49	49	-2.902794475
test_collect	25	3	75	625	4.092150276
semant_inform	4	4	16	16	-0.401951934
assist_professor	6	6	36	36	-2.069180295
weight_word	11	10	110	121	-5.237251197
bayesian_classifi	2	1	2	4	2.265276427
given_text	22	8	176	484	-1.407007182
word_filter	14	6	84	196	-0.738093739
content_word	11	4	44	121	0.762748803
execut_time	5	3	15	25	0.764433886
highest_score	16	5	80	256	0.5946779
repres_number	15	6	90	225	-0.571707919
analyz_data	1	1	1	1	2.098890607
model_gener	15	10	150	225	-4.571707919
repres_word	10	8	80	100	-3.403637017

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
languag_word	10	8	80	100	-3.403637017
topic_word	6	6	36	36	-2.069180295
represent_word	10	7	70	100	-2.403637017
tweet_us	18	4	72	324	1.92744954
base_algorithm	9	7	63	81	-2.570022836
model_paramet	10	6	60	100	-1.403637017
document_sentenc	12	5	60	144	-0.070865378
content_text	7	4	28	49	0.097205525
method_automat	4	4	16	16	-0.401951934
user_user	15	7	105	225	-1.571707919
further_process	9	8	72	81	-3.570022836
system_implement	20	5	100	400	1.260221179
process_perform	16	7	112	256	-1.4053221
springer_berlin	8	7	56	64	-2.736408656
accuraci_us	5	3	15	25	0.764433886
technolog_comput	15	3	45	225	2.428292081
volum_page	23	6	138	529	0.759378637
featur_gener	15	6	90	225	-0.571707919
perform_measur	12	8	96	144	-3.070865378
base_analysi	9	6	54	81	-1.570022836
amount_inform	4	3	12	16	0.598048066
document_level	11	5	55	121	-0.237251197
input_document	5	5	25	25	-1.235566114
sentenc_base	11	5	55	121	-0.237251197
mine_applic	7	6	42	49	-1.902794475
valu_term	7	5	35	49	-0.902794475
word_cloud	8	1	8	64	3.263591344
root_form	14	10	140	196	-4.738093739
improv_qualiti	3	2	6	9	1.431662246
societi_inform	11	11	121	121	-6.237251197
us_algorithm	8	8	64	64	-3.736408656
model_develop	6	5	30	36	-1.069180295
previou_studi	9	6	54	81	-1.570022836
posit_word	8	7	56	64	-2.736408656
text_contain	16	8	128	256	-2.4053221
detect_system	5	3	15	25	0.764433886
charact_recognit	5	2	10	25	1.764433886
model_test	7	5	35	49	-0.902794475

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
frequent_itemset	4	1	4	16	2.598048066
measur_perform	14	8	112	196	-2.738093739
document_calcul	13	8	104	169	-2.904479558
gibb_sampl	7	6	42	49	-1.902794475
solut_problem	8	6	48	64	-1.736408656
avail_onlin	14	5	70	196	0.261906261
weight_assign	8	3	24	64	1.263591344
model_topic	7	5	35	49	-0.902794475
measur_text	16	7	112	256	-1.4053221
help_user	7	5	35	49	-0.902794475
cluster_perform	8	6	48	64	-1.736408656
rank_document	26	7	182	676	0.258536096
train_sampl	9	4	36	81	0.429977164
perform_experi	2	2	4	4	1.265276427
previou_step	9	4	36	81	0.429977164
step_process	4	4	16	16	-0.401951934
time_complex	3	3	9	9	0.431662246
number_text	2	2	4	4	1.265276427
us_techniqu	4	3	12	16	0.598048066
find_similar	17	10	170	289	-4.23893628
correctli_classifi	6	5	30	36	-1.069180295
word_process	11	8	88	121	-3.237251197
languag_arab	10	5	50	100	-0.403637017
type_data	4	4	16	16	-0.401951934
data_avail	5	5	25	25	-1.235566114
mine_data	7	5	35	49	-0.902794475
number_user	35	5	175	1225	3.756008472
extract_system	9	6	54	81	-1.570022836
dimension_vector	11	4	44	121	0.762748803
learn_text	7	5	35	49	-0.902794475
techniqu_appli	5	5	25	25	-1.235566114
semant_mean	3	1	3	9	2.431662246
similar_valu	9	8	72	81	-3.570022836
charact_word	15	8	120	225	-2.571707919
cluster_centroid	1	1	1	1	2.098890607
function_word	7	5	35	49	-0.902794475
user_search	4	3	12	16	0.598048066
word_number	8	7	56	64	-2.736408656

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
order_reduc	7	6	42	49	-1.902794475
degre_comput	3	2	6	9	1.431662246
dimension_data	8	3	24	64	1.263591344
exist_method	14	3	42	196	2.261906261
extract_data	11	7	77	121	-2.237251197
vector_word	19	3	57	361	3.093835359
knowledg_engin	17	9	153	289	-3.23893628
scienc_depart	4	3	12	16	0.598048066
string_match	3	3	9	9	0.431662246
main_problem	5	3	15	25	0.764433886
model_classifi	10	5	50	100	-0.403637017
measur_us	17	8	136	289	-2.23893628
origin_text	15	6	90	225	-0.571707919
statist_inform	8	4	32	64	0.263591344
measur_evalu	7	6	42	49	-1.902794475
find_relev	6	6	36	36	-2.069180295
arab_corpu	8	3	24	64	1.263591344
system_architectur	7	5	35	49	-0.902794475
assign_weight	13	7	91	169	-1.904479558
mean_text	5	3	15	25	0.764433886
addit_featur	22	4	88	484	2.592992818
topic_base	3	2	6	9	1.431662246
weight_averag	4	3	12	16	0.598048066
word_token	16	11	176	256	-5.4053221
group_group	18	6	108	324	-0.07255046
process_model	25	2	50	625	5.092150276
score_score	19	5	95	361	1.093835359
preprocess_text	8	4	32	64	0.263591344
algorithm_document	5	5	25	25	-1.235566114
classifi_perform	11	5	55	121	-0.237251197
word_semant	10	4	40	100	0.596362983
analysi_document	9	7	63	81	-2.570022836
us_term	7	5	35	49	-0.902794475
combin_word	9	6	54	81	-1.570022836
network_base	16	4	64	256	1.5946779
time_term	7	5	35	49	-0.902794475
gener_topic	15	7	105	225	-1.571707919
improv_effici	6	6	36	36	-2.069180295

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
data_contain	8	7	56	64	-2.736408656
free_text	11	6	66	121	-1.237251197
linear_combin	23	4	92	529	2.759378637
system_extract	3	3	9	9	0.431662246
classifi_test	4	3	12	16	0.598048066
tech_niqu	10	7	70	100	-2.403637017
us_train	7	7	49	49	-2.902794475
word_common	12	9	108	144	-4.070865378
count_number	5	3	15	25	0.764433886
evalu_model	15	4	60	225	1.428292081
experi_perform	3	3	9	9	0.431662246
classif_base	5	5	25	25	-1.235566114
featur_train	10	4	40	100	0.596362983
mine_us	5	4	20	25	-0.235566114
term_text	4	4	16	16	-0.401951934
model_method	7	7	49	49	-2.902794475
provid_inform	10	4	40	100	0.596362983
start_point	2	2	4	4	1.265276427
process_method	8	4	32	64	0.263591344
textual_document	13	4	52	169	1.095520442
applic_text	11	9	99	121	-4.237251197
corpu_document	15	10	150	225	-4.571707919
gener_model	18	9	162	324	-3.07255046
group_similar	8	4	32	64	0.263591344
lexicon_base	2	2	4	4	1.265276427
valu_document	11	6	66	121	-1.237251197
data_test	12	8	96	144	-3.070865378
word_select	10	6	60	100	-1.403637017
base_topic	8	7	56	64	-2.736408656
human_factor	1	1	1	1	2.098890607
predefin_categorii	4	2	8	16	1.598048066
classifi_categorii	3	3	9	9	0.431662246
document_total	1	1	1	1	2.098890607
sentenc_length	5	3	15	25	0.764433886
word_approach	5	3	15	25	0.764433886
cluster_qualiti	5	2	10	25	1.764433886
collect_text	7	5	35	49	-0.902794475
maximum_likelihood	13	6	78	169	-0.904479558

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
measur_valu	11	6	66	121	-1.237251197
us_support	4	3	12	16	0.598048066
word_includ	15	6	90	225	-0.571707919
document_consid	5	4	20	25	-0.235566114
empir_studi	10	6	60	100	-1.403637017
system_test	10	7	70	100	-2.403637017
comput_similar	3	2	6	9	1.431662246
corpu_text	9	5	45	81	-0.570022836
morgan_kaufmann	8	8	64	64	-3.736408656
stem_us	9	6	54	81	-1.570022836
averag_number	19	5	95	361	1.093835359
frequenc_count	16	7	112	256	-1.4053221
includ_text	9	6	54	81	-1.570022836
techniqu_extract	10	7	70	100	-2.403637017
develop_method	7	5	35	49	-0.902794475
given_word	7	7	49	49	-2.902794475
process_reduc	4	4	16	16	-0.401951934
train_us	11	8	88	121	-3.237251197
us_simpl	13	5	65	169	0.095520442
word_context	12	7	84	144	-2.070865378
wordnet_lexic	13	6	78	169	-0.904479558
emot_categor	5	1	5	25	2.764433886
represent_us	7	3	21	49	1.097205525
time_word	17	8	136	289	-2.23893628
word_exampl	14	9	126	196	-3.738093739
issu_issn	12	3	36	144	1.929134622
posit_fals	6	4	24	36	-0.069180295
user_tweet	3	1	3	9	2.431662246
weight_approach	4	3	12	16	0.598048066
index_document	9	7	63	81	-2.570022836
perform_classifi	8	5	40	64	-0.736408656
address_problem	4	3	12	16	0.598048066
document_rank	13	6	78	169	-0.904479558
pattern_analysi	3	3	9	9	0.431662246
us_vector	9	8	72	81	-3.570022836
princip_compon	8	1	8	64	3.263591344
term_number	7	4	28	49	0.097205525
mine_task	4	4	16	16	-0.401951934

<b>Theme</b>	<b>2016 Tot</b>	<b>2016 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
perform_cluster	5	4	20	25	-0.235566114
take_advantag	9	6	54	81	-1.570022836
algorithm_stem	6	5	30	36	-1.069180295
white_space	4	4	16	16	-0.401951934
featur_us	9	5	45	81	-0.570022836
graph_node	9	3	27	81	1.429977164
weight_calcul	7	5	35	49	-0.902794475
spam_detect	4	2	8	16	1.598048066
store_databas	10	6	60	100	-1.403637017
mixtur_model	3	2	6	9	1.431662246
method_evalu	8	7	56	64	-2.736408656
inform_avail	4	4	16	16	-0.401951934
precis_valu	17	5	85	289	0.76106372
suffix_strip	4	4	16	16	-0.401951934
sourc_inform	9	6	54	81	-1.570022836
featur_repres	6	4	24	36	-0.069180295
classifi_featur	8	3	24	64	1.263591344
process_word	6	4	24	36	-0.069180295
algorithm_develop	12	9	108	144	-4.070865378
main_reason	19	6	114	361	0.093835359
base_stem	11	7	77	121	-2.237251197
comput_approach	8	5	40	64	-0.736408656
given_queri	10	4	40	100	0.596362983
perform_algorithm	7	7	49	49	-2.902794475
stopword_remov	12	6	72	144	-1.070865378
inform_word	14	7	98	196	-1.738093739
model_word	17	6	102	289	-0.23893628
optic_charact	5	2	10	25	1.764433886
scienc_applic	5	4	20	25	-0.235566114
learn_object	2	2	4	4	1.265276427
automat_evalu	9	5	45	81	-0.570022836
vector_featur	9	4	36	81	0.429977164
model_compar	11	5	55	121	-0.237251197
term_select	6	5	30	36	-1.069180295
us_gram	4	3	12	16	0.598048066
user_defin	5	5	25	25	-1.235566114
base_user	7	6	42	49	-1.902794475
index_process	10	4	40	100	0.596362983

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
similar_mean	15	10	150	225	-4.571707919
gram_base	12	5	60	144	-0.070865378
sourc_data	12	4	48	144	0.929134622
text_messag	11	3	33	121	1.762748803
technolog_volum	7	6	42	49	-1.902794475
analysi_social	8	7	56	64	-2.736408656
base_techniqu	5	4	20	25	-0.235566114
dataset_train	15	7	105	225	-1.571707919
select_algorithm	3	2	6	9	1.431662246
token_stop	10	8	80	100	-3.403637017
us_wordnet	9	6	54	81	-1.570022836
valu_pair	2	2	4	4	1.265276427
base_represent	2	2	4	4	1.265276427
facebook_twitter	5	5	25	25	-1.235566114
us_wikipedia	12	5	60	144	-0.070865378
class_number	19	7	133	361	-0.906164641
dimension_featur	1	1	1	1	2.098890607
extract_techniqu	12	4	48	144	0.929134622
model_automat	4	4	16	16	-0.401951934
european_languag	2	2	4	4	1.265276427
text_repres	6	4	24	36	-0.069180295
comput_network	11	3	33	121	1.762748803
method_combin	5	5	25	25	-1.235566114
word_match	9	5	45	81	-0.570022836
algorithm_find	6	6	36	36	-2.069180295
data_consist	10	7	70	100	-2.403637017
featur_includ	7	7	49	49	-2.902794475
form_stem	8	4	32	64	0.263591344
token_process	3	2	6	9	1.431662246
weight_vector	16	4	64	256	1.5946779
consist_document	8	6	48	64	-1.736408656
sentenc_structur	3	2	6	9	1.431662246
system_consist	5	4	20	25	-0.235566114
test_model	12	4	48	144	0.929134622
analysi_machin	5	5	25	25	-1.235566114
frequenc_weight	1	1	1	1	2.098890607
measur_calcul	11	6	66	121	-1.237251197
workshop_comput	7	6	42	49	-1.902794475

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
text_dataset	8	4	32	64	0.263591344
us_equat	2	2	4	4	1.265276427
collect_corpu	4	4	16	16	-0.401951934
lexic_featur	9	4	36	81	0.429977164
mean_valu	11	4	44	121	0.762748803
model_extract	5	5	25	25	-1.235566114
perform_analysi	9	5	45	81	-0.570022836
corpu_word	17	8	136	289	-2.23893628
model_system	12	2	24	144	2.929134622
us_rule	5	3	15	25	0.764433886
concept_document	2	2	4	4	1.265276427
categori_categori	6	4	24	36	-0.069180295
length_document	4	2	8	16	1.598048066
north_chapter	8	6	48	64	-1.736408656
overal_perform	6	4	24	36	-0.069180295
document_length	11	5	55	121	-0.237251197
cluster_accuraci	8	3	24	64	1.263591344
good_perform	3	3	9	9	0.431662246
list_stop	5	3	15	25	0.764433886
index_html	11	6	66	121	-1.237251197
algorithm_implement	8	7	56	64	-2.736408656
convert_text	7	6	42	49	-1.902794475
word_elimin	8	7	56	64	-2.736408656
improv_text	6	6	36	36	-2.069180295
collect_tweet	10	3	30	100	1.596362983
count_word	13	6	78	169	-0.904479558
extract_knowledg	11	6	66	121	-1.237251197
statist_signific	9	7	63	81	-2.570022836
emot_text	10	2	20	100	2.596362983
knowledg_extract	9	9	81	81	-4.570022836
term_queri	3	3	9	9	0.431662246
semant_evalu	4	2	8	16	1.598048066
method_extract	5	5	25	25	-1.235566114
overal_accuraci	7	4	28	49	0.097205525
repres_term	2	2	4	4	1.265276427
approach_automat	2	2	4	4	1.265276427
automat_classifi	7	5	35	49	-0.902794475
method_describ	8	7	56	64	-2.736408656

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
languag_specif	3	3	9	9	0.431662246
node_repres	6	3	18	36	0.930819705
topic_text	5	3	15	25	0.764433886
difficult_task	12	7	84	144	-2.070865378
access_inform	8	6	48	64	-1.736408656
depart_inform	6	3	18	36	0.930819705
naïv_bayesian	3	3	9	9	0.431662246
queri_word	8	4	32	64	0.263591344
caus_effect	1	1	1	1	2.098890607
comput_base	4	4	16	16	-0.401951934
fine_grain	1	1	1	1	2.098890607
measur_defin	10	7	70	100	-2.403637017
text_written	7	4	28	49	0.097205525
distribut_document	6	4	24	36	-0.069180295
lower_case	9	4	36	81	0.429977164
recognit_system	9	2	18	81	2.429977164
semi_automat	3	3	9	9	0.431662246
consist_word	9	5	45	81	-0.570022836
context_base	8	4	32	64	0.263591344
dataset_us	9	7	63	81	-2.570022836
process_phase	3	3	9	9	0.431662246
us_corpu	6	2	12	36	1.930819705
word_distribut	7	4	28	49	0.097205525
term_occurr	1	1	1	1	2.098890607
method_cluster	3	3	9	9	0.431662246
token_text	3	3	9	9	0.431662246
compon_analysi	3	1	3	9	2.431662246
gener_term	4	4	16	16	-0.401951934
semant_structur	5	3	15	25	0.764433886
stem_reduc	7	6	42	49	-1.902794475
term_accuraci	5	3	15	25	0.764433886
cluster_word	7	3	21	49	1.097205525
document_given	5	5	25	25	-1.235566114
system_text	6	4	24	36	-0.069180295
text_understand	7	5	35	49	-0.902794475
us_mean	8	6	48	64	-1.736408656
document_extract	6	4	24	36	-0.069180295
frequenc_calcul	5	3	15	25	0.764433886

<b>Theme</b>	<b>2016 Tot</b>	<b>2016 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
document_group	7	5	35	49	-0.902794475
domain_knowledg	7	4	28	49	0.097205525
gener_content	3	3	9	9	0.431662246
learn_data	2	2	4	4	1.265276427
retriev_base	13	5	65	169	0.095520442
algorithm_mean	5	5	25	25	-1.235566114
approach_perform	8	5	40	64	-0.736408656
model_approach	12	5	60	144	-0.070865378
network_us	5	4	20	25	-0.235566114
gram_word	10	1	10	100	3.596362983
model_combin	5	5	25	25	-1.235566114
stemmer_algorithm	6	3	18	36	0.930819705
valu_paramet	6	3	18	36	0.930819705
valu_word	2	2	4	4	1.265276427
accuraci_tabl	11	5	55	121	-0.237251197
assign_word	8	5	40	64	-0.736408656
base_measur	8	6	48	64	-1.736408656
process_approach	4	3	12	16	0.598048066
us_latent	5	4	20	25	-0.235566114
gener_algorithm	18	1	18	324	4.92744954
preprocess_techniqu	2	2	4	4	1.265276427
rule_rule	10	4	40	100	0.596362983
level_text	3	3	9	9	0.431662246
process_base	5	5	25	25	-1.235566114
relev_queri	7	5	35	49	-0.902794475
document_test	6	4	24	36	-0.069180295
document_accord	3	3	9	9	0.431662246
order_evalu	2	2	4	4	1.265276427
base_learn	3	3	9	9	0.431662246
algorithm_suffix	6	5	30	36	-1.069180295
approach_featur	14	2	28	196	3.261906261
time_process	5	4	20	25	-0.235566114
equal_number	7	5	35	49	-0.902794475
improv_cluster	3	2	6	9	1.431662246
classif_document	6	5	30	36	-1.069180295
gener_process	9	5	45	81	-0.570022836
jordan_latent	9	9	81	81	-4.570022836
label_train	12	4	48	144	0.929134622

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
model_describ	6	4	24	36	-0.069180295
us_topic	14	7	98	196	-1.738093739
base_machin	6	4	24	36	-0.069180295
frequenc_number	7	7	49	49	-2.902794475
process_includ	7	4	28	49	0.097205525
word_assign	7	6	42	49	-1.902794475
automat_classif	5	3	15	25	0.764433886
calcul_term	8	7	56	64	-2.736408656
signific_improv	4	2	8	16	1.598048066
stage_process	3	3	9	9	0.431662246
valu_indic	6	5	30	36	-1.069180295
analysi_tool	10	8	80	100	-3.403637017
gener_method	2	1	2	4	2.265276427
vector_us	11	3	33	121	1.762748803
origin_data	3	3	9	9	0.431662246
comput_secur	7	3	21	49	1.097205525
engin_depart	5	3	15	25	0.764433886
frequent_item	14	1	14	196	4.261906261
http_github	15	7	105	225	-1.571707919
increas_perform	7	5	35	49	-0.902794475
occurr_document	2	2	4	4	1.265276427
similar_cluster	7	4	28	49	0.097205525
studi_featur	5	4	20	25	-0.235566114
token_stem	13	8	104	169	-2.904479558
us_weight	7	5	35	49	-0.902794475
word_reduc	8	7	56	64	-2.736408656
base_number	6	4	24	36	-0.069180295
data_includ	3	3	9	9	0.431662246
dataset_collect	11	7	77	121	-2.237251197
find_word	6	6	36	36	-2.069180295
learn_train	4	4	16	16	-0.401951934
reduc_time	4	3	12	16	0.598048066
weight_document	5	5	25	25	-1.235566114
word_collect	4	4	16	16	-0.401951934
corpu_train	13	6	78	169	-0.904479558
learn_system	3	3	9	9	0.431662246
accuraci_classif	2	2	4	4	1.265276427
algorithm_compar	9	7	63	81	-2.570022836

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
base_form	8	7	56	64	-2.736408656
contain_text	8	6	48	64	-1.736408656
dataset_experi	3	3	9	9	0.431662246
pair_word	9	7	63	81	-2.570022836
approach_combin	17	5	85	289	0.76106372
includ_word	8	5	40	64	-0.736408656
problem_text	7	7	49	49	-2.902794475
reduct_techniqu	3	2	6	9	1.431662246
remov_punctuat	4	3	12	16	0.598048066
score_system	7	4	28	49	0.097205525
select_document	7	5	35	49	-0.902794475
type_featur	11	3	33	121	1.762748803
us_model	4	4	16	16	-0.401951934
mobil_phone	12	5	60	144	-0.070865378
select_relev	2	2	4	4	1.265276427
system_data	5	4	20	25	-0.235566114
gener_us	5	4	20	25	-0.235566114
order_extract	6	5	30	36	-1.069180295
perfor_manc	10	4	40	100	0.596362983
recal_recal	1	1	1	1	2.098890607
rule_extract	2	2	4	4	1.265276427
structur_text	5	5	25	25	-1.235566114
word_train	13	4	52	169	1.095520442
combin_model	4	2	8	16	1.598048066
data_classif	7	6	42	49	-1.902794475
time_featur	2	2	4	4	1.265276427
gener_categor	4	2	8	16	1.598048066
model_term	2	2	4	4	1.265276427
probabilist_latent	4	1	4	16	2.598048066
search_word	6	5	30	36	-1.069180295
order_word	8	6	48	64	-1.736408656
predict_class	2	2	4	4	1.265276427
base_applic	2	1	2	4	2.265276427
bay_classif	4	3	12	16	0.598048066
binari_classif	15	5	75	225	0.428292081
learn_inform	3	3	9	9	0.431662246
note_comput	3	3	9	9	0.431662246
number_class	7	3	21	49	1.097205525

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
perform_inform	6	6	36	36	-2.069180295
techniqu_find	5	3	15	25	0.764433886
main_step	1	1	1	1	2.098890607
make_difficult	9	9	81	81	-4.570022836
servic_servic	4	1	4	16	2.598048066
method_classif	6	4	24	36	-0.069180295
model_latent	11	7	77	121	-2.237251197
model_process	4	3	12	16	0.598048066
statist_measur	8	4	32	64	0.263591344
stem_method	6	3	18	36	0.930819705
topic_gener	13	5	65	169	0.095520442
tradit_approach	5	3	15	25	0.764433886
data_format	5	3	15	25	0.764433886
featur_term	5	5	25	25	-1.235566114
posit_class	17	4	68	289	1.76106372
score_function	13	6	78	169	-0.904479558
term_precis	15	5	75	225	0.428292081
total_word	1	1	1	1	2.098890607
divid_number	6	6	36	36	-2.069180295
present_model	1	1	1	1	2.098890607
word_group	16	5	80	256	0.5946779
approach_develop	5	5	25	25	-1.235566114
compar_word	4	2	8	16	1.598048066
find_optim	11	7	77	121	-2.237251197
further_improv	15	8	120	225	-2.571707919
probabl_word	11	6	66	121	-1.237251197
proce_ing	10	6	60	100	-1.403637017
data_form	6	3	18	36	0.930819705
neg_sentiment	4	3	12	16	0.598048066
servic_orient	1	1	1	1	2.098890607
cluster_gener	4	4	16	16	-0.401951934
train_phase	7	6	42	49	-1.902794475
cluster_mean	6	5	30	36	-1.069180295
document_set	3	3	9	9	0.431662246
file_file	5	5	25	25	-1.235566114
inform_sourc	4	4	16	16	-0.401951934
neighbor_algorithm	6	5	30	36	-1.069180295
preprocess_document	5	5	25	25	-1.235566114

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
structur_inform	3	3	9	9	0.431662246
us_approach	5	5	25	25	-1.235566114
dataset_evalu	11	3	33	121	1.762748803
mine_pattern	3	2	6	9	1.431662246
model_user	2	1	2	4	2.265276427
model_vector	8	2	16	64	2.263591344
size_data	3	2	6	9	1.431662246
struc_ture	3	3	9	9	0.431662246
calcul_number	4	3	12	16	0.598048066
number_charact	9	5	45	81	-0.570022836
system_support	6	1	6	36	2.930819705
us_combin	5	4	20	25	-0.235566114
user_interact	1	1	1	1	2.098890607
data_represent	2	2	4	4	1.265276427
experi_evalu	5	5	25	25	-1.235566114
gener_purpos	9	7	63	81	-2.570022836
linguist_human	11	5	55	121	-0.237251197
tech_nologi	5	3	15	25	0.764433886
word_frequent	10	7	70	100	-2.403637017
automat_process	2	2	4	4	1.265276427
remov_prefix	9	6	54	81	-1.570022836
select_word	6	5	30	36	-1.069180295
us_naïv	1	1	1	1	2.098890607
correct_word	23	4	92	529	2.759378637
perform_poorli	11	5	55	121	-0.237251197
type_type	3	3	9	9	0.431662246
retriev_perform	3	1	3	9	2.431662246
effect_featur	2	2	4	4	1.265276427
data_gather	3	1	3	9	2.431662246
inform_filter	5	4	20	25	-0.235566114
overcom_problem	2	2	4	4	1.265276427
method_arab	7	4	28	49	0.097205525
reduc_size	5	4	20	25	-0.235566114
stem_techniqu	3	3	9	9	0.431662246
us_document	2	2	4	4	1.265276427
import_word	7	6	42	49	-1.902794475
perform_featur	3	3	9	9	0.431662246
approach_classifi	8	4	32	64	0.263591344

<b>Theme</b>	<b>2016 Tot</b>	<b>2016 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
perform_document	9	9	81	81	-4.570022836
algorithm_data	4	4	16	16	-0.401951934
cluster_group	5	4	20	25	-0.235566114
estim_probabl	7	4	28	49	0.097205525
given_topic	8	4	32	64	0.263591344
model_implement	6	5	30	36	-1.069180295
order_achiev	8	5	40	64	-0.736408656
vector_model	5	1	5	25	2.764433886
inform_data	7	7	49	49	-2.902794475
total_document	4	3	12	16	0.598048066
document_comput	3	3	9	9	0.431662246
algorithm_test	11	5	55	121	-0.237251197
fuzzi_set	11	1	11	121	3.762748803
system_process	4	3	12	16	0.598048066
term_semant	4	1	4	16	2.598048066
token_part	13	3	39	169	2.095520442
train_train	12	5	60	144	-0.070865378
tree_algorithm	4	3	12	16	0.598048066
detect_us	5	3	15	25	0.764433886
help_identifi	4	4	16	16	-0.401951934
input_word	9	6	54	81	-1.570022836
contain_number	5	5	25	25	-1.235566114
group_document	5	2	10	25	1.764433886
approach_analyz	7	7	49	49	-2.902794475
method_consid	2	2	4	4	1.265276427
document_user	7	7	49	49	-2.902794475
languag_base	6	6	36	36	-2.069180295
commun_engin	5	4	20	25	-0.235566114
corpu_number	3	3	9	9	0.431662246
perform_term	3	3	9	9	0.431662246
collect_word	5	3	15	25	0.764433886
detail_descript	7	5	35	49	-0.902794475
inform_us	5	5	25	25	-1.235566114
tree_classifi	4	3	12	16	0.598048066
word_exist	5	5	25	25	-1.235566114
analysi_opinion	1	1	1	1	2.098890607
effect_us	3	3	9	9	0.431662246
method_measur	9	7	63	81	-2.570022836

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
paramet_valu	5	4	20	25	-0.235566114
supervis_unsupervis	8	6	48	64	-1.736408656
text_consid	8	2	16	64	2.263591344
averag_valu	5	3	15	25	0.764433886
bay_theorem	7	5	35	49	-0.902794475
evalu_classifi	14	4	56	196	1.261906261
pattern_gener	2	2	4	4	1.265276427
perform_improv	8	5	40	64	-0.736408656
preprocess_data	12	5	60	144	-0.070865378
test_system	3	2	6	9	1.431662246
word_search	5	5	25	25	-1.235566114
faculti_scienc	2	1	2	4	2.265276427
form_us	9	5	45	81	-0.570022836
linguist_resourc	5	3	15	25	0.764433886
semant_network	5	3	15	25	0.764433886
variou_featur	8	3	24	64	1.263591344
written_text	14	5	70	196	0.261906261
catégori_word	1	1	1	1	2.098890607
context_awar	11	4	44	121	0.762748803
extract_tweet	16	4	64	256	1.5946779
order_logic	7	2	14	49	2.097205525
select_term	2	2	4	4	1.265276427
simpl_word	16	4	64	256	1.5946779
appear_frequent	5	4	20	25	-0.235566114
method_select	6	4	24	36	-0.069180295
modern_inform	5	4	20	25	-0.235566114
term_gener	4	4	16	16	-0.401951934
evalu_evalu	6	4	24	36	-0.069180295
method_improv	4	4	16	16	-0.401951934
model_defin	5	3	15	25	0.764433886
multinomi_distribut	3	1	3	9	2.431662246
size_train	4	2	8	16	1.598048066
specif_topic	3	3	9	9	0.431662246
approach_cluster	1	1	1	1	2.098890607
describ_detail	9	5	45	81	-0.570022836
document_thu	5	5	25	25	-1.235566114
gram_model	6	1	6	36	2.930819705
train_time	5	5	25	25	-1.235566114

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
convert_word	13	6	78	169	-0.904479558
divid_total	5	4	20	25	-0.235566114
improv_precis	5	4	20	25	-0.235566114
document_order	5	5	25	25	-1.235566114
gram_featur	4	2	8	16	1.598048066
main_featur	9	3	27	81	1.429977164
mine_machin	5	4	20	25	-0.235566114
repr_sent	9	3	27	81	1.429977164
test_evalu	7	3	21	49	1.097205525
websit_http	5	5	25	25	-1.235566114
calcul_frequenc	6	3	18	36	0.930819705
comput_semant	8	2	16	64	2.263591344
subset_featur	2	2	4	4	1.265276427
system_arab	2	2	4	4	1.265276427
algorithm_predict	6	5	30	36	-1.069180295
gener_data	4	4	16	16	-0.401951934
mine_natur	3	3	9	9	0.431662246
multi_label	3	3	9	9	0.431662246
node_graph	3	1	3	9	2.431662246
word_test	8	4	32	64	0.263591344
design_model	5	1	5	25	2.764433886
further_develop	4	2	8	16	1.598048066
model_construct	2	2	4	4	1.265276427
sampl_data	1	1	1	1	2.098890607
salton_bucklei	5	2	10	25	1.764433886
applic_develop	2	1	2	4	2.265276427
automat_document	3	3	9	9	0.431662246
document_avail	7	6	42	49	-1.902794475
model_consid	4	3	12	16	0.598048066
stem_step	1	1	1	1	2.098890607
arxiv_preprint	2	1	2	4	2.265276427
classifi_classif	1	1	1	1	2.098890607
classifi_support	5	3	15	25	0.764433886
mean_document	5	4	20	25	-0.235566114
method_comput	4	4	16	16	-0.401951934
technolog_issn	8	4	32	64	0.263591344
appear_time	9	7	63	81	-2.570022836
auto_matic	5	3	15	25	0.764433886

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
captur_semant	9	4	36	81	0.429977164
linguist_structur	2	2	4	4	1.265276427
perform_base	3	2	6	9	1.431662246
word_refer	9	8	72	81	-3.570022836
data_obtain	1	1	1	1	2.098890607
describ_system	9	5	45	81	-0.570022836
direct_graph	5	4	20	25	-0.235566114
help_improv	7	7	49	49	-2.902794475
linear_model	7	6	42	49	-1.902794475
model_provid	5	4	20	25	-0.235566114
multipl_word	6	4	24	36	-0.069180295
probabl_document	3	2	6	9	1.431662246
topic_interest	3	3	9	9	0.431662246
word_total	4	4	16	16	-0.401951934
accuraci_obtain	3	2	6	9	1.431662246
class_classifi	11	3	33	121	1.762748803
current_state	7	4	28	49	0.097205525
experi_experi	5	4	20	25	-0.235566114
mathemat_comput	2	2	4	4	1.265276427
measur_cosin	2	2	4	4	1.265276427
messag_servic	2	2	4	4	1.265276427
similar_text	11	5	55	121	-0.237251197
achiev_good	4	4	16	16	-0.401951934
algorithm_term	4	4	16	16	-0.401951934
method_model	6	6	36	36	-2.069180295
metric_evalu	5	1	5	25	2.764433886
stemmer_arab	9	4	36	81	0.429977164
system_consid	4	2	8	16	1.598048066
system_requir	4	4	16	16	-0.401951934
tweet_collect	1	1	1	1	2.098890607
word_user	4	3	12	16	0.598048066
appli_cluster	2	2	4	4	1.265276427
learn_task	2	2	4	4	1.265276427
document_organ	3	3	9	9	0.431662246
measur_comput	2	2	4	4	1.265276427
term_given	4	4	16	16	-0.401951934
user_find	6	4	24	36	-0.069180295
bay_model	6	4	24	36	-0.069180295

<b>Theme</b>	<b>2016 Tot</b>	<b>2016 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
consid_term	2	2	4	4	1.265276427
mcgraw_hill	4	2	8	16	1.598048066
method_document	6	5	30	36	-1.069180295
model_cluster	3	2	6	9	1.431662246
retriev_data	2	2	4	4	1.265276427
search_inform	1	1	1	1	2.098890607
basic_idea	6	4	24	36	-0.069180295
blog_post	3	3	9	9	0.431662246
comput_survei	2	2	4	4	1.265276427
deriv_word	5	4	20	25	-0.235566114
main_contribut	2	2	4	4	1.265276427
estim_paramet	4	3	12	16	0.598048066
form_cluster	4	4	16	16	-0.401951934
method_name	5	5	25	25	-1.235566114
model_techniqu	3	3	9	9	0.431662246
neural_inform	3	3	9	9	0.431662246
binari_classifi	11	3	33	121	1.762748803
charact_token	7	3	21	49	1.097205525
latent_variabl	5	1	5	25	2.764433886
system_comput	5	3	15	25	0.764433886
task_automat	4	3	12	16	0.598048066
text_includ	3	3	9	9	0.431662246
us_neural	5	4	20	25	-0.235566114
algorithm_describ	5	4	20	25	-0.235566114
algorithm_method	5	5	25	25	-1.235566114
algorithm_requir	4	4	16	16	-0.401951934
applic_us	3	2	6	9	1.431662246
calcul_score	9	7	63	81	-2.570022836
featur_number	3	3	9	9	0.431662246
inform_base	3	3	9	9	0.431662246
method_achiev	2	2	4	4	1.265276427
studi_focus	3	2	6	9	1.431662246
comput_program	5	3	15	25	0.764433886
dataset_test	4	3	12	16	0.598048066
identifi_emot	10	3	30	100	1.596362983
replac_word	11	7	77	121	-2.237251197
statist_data	4	2	8	16	1.598048066
automat_detect	2	2	4	4	1.265276427

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
calcul_word	7	6	42	49	-1.902794475
commun_system	7	4	28	49	0.097205525
develop_tool	5	5	25	25	-1.235566114
featur_classif	6	4	24	36	-0.069180295
graphic_model	5	4	20	25	-0.235566114
process_term	10	6	60	100	-1.403637017
semant_resourc	12	3	36	144	1.929134622
text_analyt	1	1	1	1	2.098890607
word_weight	6	4	24	36	-0.069180295
match_match	1	1	1	1	2.098890607
valu_obtain	4	2	8	16	1.598048066
defin_term	5	5	25	25	-1.235566114
us_maximum	4	3	12	16	0.598048066
cluster_comput	1	1	1	1	2.098890607
space_word	5	3	15	25	0.764433886
token_document	2	1	2	4	2.265276427
model_dataset	3	3	9	9	0.431662246
novel_approach	6	5	30	36	-1.069180295
vocabulari_word	4	4	16	16	-0.401951934
frequenc_measur	4	4	16	16	-0.401951934
ground_truth	4	2	8	16	1.598048066
levelRepresent	2	1	2	4	2.265276427
process_select	4	4	16	16	-0.401951934
algorithm_automat	2	1	2	4	2.265276427
index_word	10	5	50	100	-0.403637017
proc_sigir	3	2	6	9	1.431662246
algorithm_achiev	9	6	54	81	-1.570022836
appli_algorithm	6	4	24	36	-0.069180295
averag_length	6	4	24	36	-0.069180295
evalu_base	7	5	35	49	-0.902794475
form_term	3	2	6	9	1.431662246
machin_intellig	4	4	16	16	-0.401951934
mine_base	3	3	9	9	0.431662246
professor_comput	1	1	1	1	2.098890607
techniqu_reduc	2	2	4	4	1.265276427
us_tool	5	3	15	25	0.764433886
vector_term	2	2	4	4	1.265276427
evalu_dataset	6	4	24	36	-0.069180295

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
extract_semant	4	4	16	16	-0.401951934
process_machin	6	3	18	36	0.930819705
adject_noun	5	5	25	25	-1.235566114
collect_process	3	2	6	9	1.431662246
gradient_descent	5	3	15	25	0.764433886
inform_structur	2	2	4	4	1.265276427
languag_world	3	3	9	9	0.431662246
learn_us	7	5	35	49	-0.902794475
model_make	7	6	42	49	-1.902794475
text_form	6	6	36	36	-2.069180295
analysi_natur	7	3	21	49	1.097205525
complex_system	2	2	4	4	1.265276427
levenshtein_distanc	4	3	12	16	0.598048066
million_peopl	3	3	9	9	0.431662246
model_structur	6	3	18	36	0.930819705
remain_word	11	7	77	121	-2.237251197
search_data	5	3	15	25	0.764433886
approach_solv	7	5	35	49	-0.902794475
document_convert	3	3	9	9	0.431662246
extern_knowledg	2	2	4	4	1.265276427
appli_document	6	3	18	36	0.930819705
assign_categori	4	4	16	16	-0.401951934
distribut_data	2	1	2	4	2.265276427
network_commun	2	2	4	4	1.265276427
tree_base	4	2	8	16	1.598048066
larger_number	7	3	21	49	1.097205525
novel_method	6	3	18	36	0.930819705
preprint_arxiv	2	1	2	4	2.265276427
represent_vector	5	3	15	25	0.764433886
us_keyword	4	4	16	16	-0.401951934
data_classifi	2	1	2	4	2.265276427
distribut_term	3	2	6	9	1.431662246
group_base	3	2	6	9	1.431662246
relev_user	8	4	32	64	0.263591344
summar_task	4	3	12	16	0.598048066
type_word	6	6	36	36	-2.069180295
vector_weight	4	4	16	16	-0.401951934
weight_weight	3	2	6	9	1.431662246

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
approach_method	2	1	2	4	2.265276427
column_repres	6	5	30	36	-1.069180295
dept_comput	2	2	4	4	1.265276427
keyword_search	3	2	6	9	1.431662246
measur_word	4	3	12	16	0.598048066
model_analysi	6	2	12	36	1.930819705
perform_comparison	6	5	30	36	-1.069180295
user_input	4	3	12	16	0.598048066
approach_gener	4	4	16	16	-0.401951934
base_keyword	4	3	12	16	0.598048066
base_multi	4	3	12	16	0.598048066
base_score	5	5	25	25	-1.235566114
base_valu	1	1	1	1	2.098890607
data_size	7	5	35	49	-0.902794475
data_social	7	3	21	49	1.097205525
perform_variou	4	2	8	16	1.598048066
reduc_comput	7	3	21	49	1.097205525
studi_us	3	2	6	9	1.431662246
us_measur	2	2	4	4	1.265276427
word_input	3	3	9	9	0.431662246
workshop_text	1	1	1	1	2.098890607
accuraci_score	4	2	8	16	1.598048066
approach_identifi	2	2	4	4	1.265276427
base_queri	7	5	35	49	-0.902794475
determin_word	8	6	48	64	-1.736408656
maximum_valu	1	1	1	1	2.098890607
model_creat	2	2	4	4	1.265276427
take_time	4	4	16	16	-0.401951934
us_number	4	2	8	16	1.598048066
user_us	5	4	20	25	-0.235566114
averag_time	8	4	32	64	0.263591344
classifi_predict	2	2	4	4	1.265276427
knowledg_inform	1	1	1	1	2.098890607
perform_stem	5	4	20	25	-0.235566114
valu_given	5	2	10	25	1.764433886
word_replac	14	4	56	196	1.261906261
document_appear	7	5	35	49	-0.902794475
kullback_leibler	1	1	1	1	2.098890607

<b>Theme</b>	<b>2016 Tot</b>	<b>2016 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
number_distinct	2	2	4	4	1.265276427
learn_autom	1	1	1	1	2.098890607
requir_number	1	1	1	1	2.098890607
becom_popular	4	4	16	16	-0.401951934
process_call	2	1	2	4	2.265276427
similar_featur	6	2	12	36	1.930819705
singl_term	3	3	9	9	0.431662246
term_calcul	3	3	9	9	0.431662246
term_topic	5	5	25	25	-1.235566114
type_document	1	1	1	1	2.098890607
appli_mathemat	4	2	8	16	1.598048066
creat_word	5	3	15	25	0.764433886
decreas_number	4	4	16	16	-0.401951934
master_degre	5	3	15	25	0.764433886
test_train	4	4	16	16	-0.401951934
text_evalu	3	3	9	9	0.431662246
cosin_angl	3	3	9	9	0.431662246
evalu_cluster	5	3	15	25	0.764433886
evalu_lrec	1	1	1	1	2.098890607
given_user	5	3	15	25	0.764433886
includ_step	3	3	9	9	0.431662246
likelihood_estim	9	5	45	81	-0.570022836
mine_icdm	5	5	25	25	-1.235566114
model_experi	3	3	9	9	0.431662246
optim_number	9	4	36	81	0.429977164
process_order	7	3	21	49	1.097205525
queri_queri	9	8	72	81	-3.570022836
recent_studi	1	1	1	1	2.098890607
similar_concept	2	2	4	4	1.265276427
strip_program	2	2	4	4	1.265276427
classifi_emot	2	1	2	4	2.265276427
consid_word	6	4	24	36	-0.069180295
inform_featur	6	2	12	36	1.930819705
measur_combin	3	3	9	9	0.431662246
model_number	6	4	24	36	-0.069180295
refer_word	2	2	4	4	1.265276427
techniqu_stem	2	2	4	4	1.265276427
word_letter	1	1	1	1	2.098890607

<b>Theme</b>	<b>2016 Tot</b>	<b>2016 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
approach_present	5	3	15	25	0.764433886
integr_data	1	1	1	1	2.098890607
method_data	7	5	35	49	-0.902794475
model_present	2	2	4	4	1.265276427
multi_dimension	2	1	2	4	2.265276427
select_select	4	2	8	16	1.598048066
system_abl	1	1	1	1	2.098890607
text_exampl	3	3	9	9	0.431662246
base_function	3	2	6	9	1.431662246
develop_base	2	2	4	4	1.265276427
emot_analysi	3	2	6	9	1.431662246
mine_introduct	4	4	16	16	-0.401951934
morpholog_syntact	2	2	4	4	1.265276427
score_evalu	9	4	36	81	0.429977164
servic_name	1	1	1	1	2.098890607
precis_rate	1	1	1	1	2.098890607
order_compar	3	2	6	9	1.431662246
similar_function	1	1	1	1	2.098890607
step_algorithm	4	4	16	16	-0.401951934
neg_emot	5	3	15	25	0.764433886
particular_categori	4	2	8	16	1.598048066
advanc_neural	2	2	4	4	1.265276427
cluster_form	3	1	3	9	2.431662246
html_http	3	2	6	9	1.431662246
particular_document	2	2	4	4	1.265276427
reduc_dimens	2	2	4	4	1.265276427
stem_approach	3	3	9	9	0.431662246
twitter_social	5	4	20	25	-0.235566114
accuraci_text	4	4	16	16	-0.401951934
learn_theori	3	3	9	9	0.431662246
select_appropri	2	2	4	4	1.265276427
task_document	4	4	16	16	-0.401951934
term_index	7	5	35	49	-0.902794475
text_model	9	5	45	81	-0.570022836
time_frame	2	2	4	4	1.265276427
analysi_determin	5	3	15	25	0.764433886
classifi_class	5	3	15	25	0.764433886
creativ_common	4	4	16	16	-0.401951934

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
lower_valu	9	5	45	81	-0.570022836
match_algorithm	3	3	9	9	0.431662246
problem_data	5	4	20	25	-0.235566114
techniqu_term	5	5	25	25	-1.235566114
word_algorithm	2	2	4	4	1.265276427
class_cluster	4	1	4	16	2.598048066
evalu_topic	9	3	27	81	1.429977164
process_describ	2	2	4	4	1.265276427
system_inform	7	4	28	49	0.097205525
tion_retriev	12	4	48	144	0.929134622
total_score	5	4	20	25	-0.235566114
user_select	1	1	1	1	2.098890607
word_defin	5	4	20	25	-0.235566114
word_find	5	5	25	25	-1.235566114
collect_us	6	5	30	36	-1.069180295
data_perform	9	7	63	81	-2.570022836
dice_similar	6	2	12	36	1.930819705
formal_defin	9	3	27	81	1.429977164
respons_time	1	1	1	1	2.098890607
techniqu_order	6	6	36	36	-2.069180295
distribut_similar	1	1	1	1	2.098890607
probabl_term	3	3	9	9	0.431662246
document_assign	3	3	9	9	0.431662246
leibler_diverg	1	1	1	1	2.098890607
bucklei_term	2	2	4	4	1.265276427
categor_comput	1	1	1	1	2.098890607
collect_dataset	3	2	6	9	1.431662246
introduct_modern	5	5	25	25	-1.235566114
keyword_arab	4	4	16	16	-0.401951934
search_us	5	2	10	25	1.764433886
size_document	1	1	1	1	2.098890607
system_page	6	5	30	36	-1.069180295
time_document	4	3	12	16	0.598048066
charact_number	4	4	16	16	-0.401951934
document_select	6	3	18	36	0.930819705
effect_method	2	2	4	4	1.265276427
languag_complex	7	7	49	49	-2.902794475
method_take	1	1	1	1	2.098890607

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
signific_amount	3	2	6	9	1.431662246
analysi_classif	4	4	16	16	-0.401951934
appli_comput	1	1	1	1	2.098890607
document_obtain	4	3	12	16	0.598048066
main_focu	5	5	25	25	-1.235566114
model_outperform	6	4	24	36	-0.069180295
probabl_class	1	1	1	1	2.098890607
represent_method	2	1	2	4	2.265276427
term_mean	6	5	30	36	-1.069180295
word_singl	4	4	16	16	-0.401951934
algorithm_present	4	4	16	16	-0.401951934
approach_comput	2	2	4	4	1.265276427
corpu_includ	1	1	1	1	2.098890607
data_analyz	1	1	1	1	2.098890607
data_experi	2	2	4	4	1.265276427
depend_word	5	3	15	25	0.764433886
describ_method	2	2	4	4	1.265276427
distribu_tion	6	4	24	36	-0.069180295
frequenc_featur	6	4	24	36	-0.069180295
good_accuraci	2	2	4	4	1.265276427
human_behavior	1	1	1	1	2.098890607
lucen_apach	7	6	42	49	-1.902794475
main_advantag	4	2	8	16	1.598048066
saudi_arabia	4	3	12	16	0.598048066
tag_tag	10	5	50	100	-0.403637017
us_automat	2	2	4	4	1.265276427
word_inform	5	5	25	25	-1.235566114
analysi_identifi	5	3	15	25	0.764433886
common_attribut	4	4	16	16	-0.401951934
exampl_tweet	2	2	4	4	1.265276427
model_find	8	6	48	64	-1.736408656
normal_term	4	3	12	16	0.598048066
polar_text	2	2	4	4	1.265276427
preci_sion	13	3	39	169	2.095520442
system_includ	3	3	9	9	0.431662246
text_therefor	4	4	16	16	-0.401951934
theori_applic	1	1	1	1	2.098890607
us_linguist	4	2	8	16	1.598048066

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
word_correspond	2	2	4	4	1.265276427
neg_train	3	1	3	9	2.431662246
cluster_hierarch	3	3	9	9	0.431662246
document_reduc	1	1	1	1	2.098890607
index_databas	1	1	1	1	2.098890607
stage_text	3	2	6	9	1.431662246
class_repres	2	2	4	4	1.265276427
cluster_evalu	4	2	8	16	1.598048066
document_includ	1	1	1	1	2.098890607
experiment_studi	6	3	18	36	0.930819705
identifi_topic	2	2	4	4	1.265276427
social_interact	5	4	20	25	-0.235566114
user_label	6	2	12	36	1.930819705
vector_similar	7	4	28	49	0.097205525
word_normal	5	4	20	25	-0.235566114
descend_order	6	4	24	36	-0.069180295
form_verb	1	1	1	1	2.098890607
semant_represent	5	3	15	25	0.764433886
stem_gener	1	1	1	1	2.098890607
stem_porter	2	2	4	4	1.265276427
term_contain	6	5	30	36	-1.069180295
text_obtain	3	3	9	9	0.431662246
us_languag	1	1	1	1	2.098890607
us_queri	2	1	2	4	2.265276427
document_content	5	4	20	25	-0.235566114
document_increas	4	4	16	16	-0.401951934
evalu_qualiti	2	2	4	4	1.265276427
filter_us	5	5	25	25	-1.235566114
huge_number	1	1	1	1	2.098890607
match_user	5	3	15	25	0.764433886
remov_letter	2	2	4	4	1.265276427
step_preprocess	2	2	4	4	1.265276427
weight_score	8	4	32	64	0.263591344
word_vocabulari	8	4	32	64	0.263591344
avail_abl	6	4	24	36	-0.069180295
document_distribut	2	2	4	4	1.265276427
extract_task	1	1	1	1	2.098890607
imag_analysi	1	1	1	1	2.098890607

<b>Theme</b>	<b>2016 Tot</b>	<b>2016 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
languag_make	3	3	9	9	0.431662246
obtain_cluster	4	2	8	16	1.598048066
process_identifi	1	1	1	1	2.098890607
significantli_reduc	4	4	16	16	-0.401951934
step_extract	1	1	1	1	2.098890607
step_identifi	4	3	12	16	0.598048066
system_term	5	5	25	25	-1.235566114
us_graph	2	2	4	4	1.265276427
us_knowledg	2	2	4	4	1.265276427
approach_machin	6	5	30	36	-1.069180295
independ_assumpt	6	5	30	36	-1.069180295
method_mean	5	3	15	25	0.764433886
number_sampl	4	3	12	16	0.598048066
origin_dataset	4	3	12	16	0.598048066
problem_automat	3	3	9	9	0.431662246
twitter_stream	2	2	4	4	1.265276427
user_system	2	2	4	4	1.265276427
data_distribut	1	1	1	1	2.098890607
document_call	1	1	1	1	2.098890607
avail_document	3	3	9	9	0.431662246
calcul_distanc	4	4	16	16	-0.401951934
input_train	1	1	1	1	2.098890607
base_emot	1	1	1	1	2.098890607
develop_evalu	5	4	20	25	-0.235566114
featur_evalu	3	3	9	9	0.431662246
linear_function	4	2	8	16	1.598048066
particular_domain	4	1	4	16	2.598048066
randomli_chosen	3	3	9	9	0.431662246
valu_measur	3	3	9	9	0.431662246
algorithm_mine	8	2	16	64	2.263591344
analyz_tweet	6	5	30	36	-1.069180295
imag_video	3	3	9	9	0.431662246
measur_find	4	3	12	16	0.598048066
number_retriev	7	5	35	49	-0.902794475
process_automat	4	4	16	16	-0.401951934
process_take	3	3	9	9	0.431662246
requir_user	2	1	2	4	2.265276427
rule_combin	1	1	1	1	2.098890607

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
signific_word	5	2	10	25	1.764433886
appli_stem	4	3	12	16	0.598048066
applic_servic	2	2	4	4	1.265276427
base_structur	2	1	2	4	2.265276427
calcu_late	6	2	12	36	1.930819705
correspond_sentenc	1	1	1	1	2.098890607
experi_text	2	2	4	4	1.265276427
featur_calcul	5	4	20	25	-0.235566114
interact_user	2	1	2	4	2.265276427
map_word	5	3	15	25	0.764433886
order_understand	1	1	1	1	2.098890607
search_retriev	5	4	20	25	-0.235566114
token_remov	4	4	16	16	-0.401951934
us_gener	3	3	9	9	0.431662246
vector_train	3	3	9	9	0.431662246
weight_obtain	2	1	2	4	2.265276427
class_posit	3	1	3	9	2.431662246
commun_comput	2	2	4	4	1.265276427
consist_phase	3	3	9	9	0.431662246
correctli_identifi	3	2	6	9	1.431662246
document_form	4	4	16	16	-0.401951934
experi_dataset	1	1	1	1	2.098890607
knowledg_resourc	1	1	1	1	2.098890607
languag_social	2	2	4	4	1.265276427
system_measur	4	4	16	16	-0.401951934
text_method	3	3	9	9	0.431662246
word_chang	3	3	9	9	0.431662246
engin_issu	1	1	1	1	2.098890607
identifi_us	3	2	6	9	1.431662246
determin_number	1	1	1	1	2.098890607
normal_word	4	4	16	16	-0.401951934
text_identifi	1	1	1	1	2.098890607
world_congress	1	1	1	1	2.098890607
comparison_method	1	1	1	1	2.098890607
document_improv	4	3	12	16	0.598048066
precis_calcul	6	4	24	36	-0.069180295
stem_document	5	5	25	25	-1.235566114
centroid_cluster	1	1	1	1	2.098890607

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
data_approach	3	3	9	9	0.431662246
indic_word	4	4	16	16	-0.401951934
interest_user	1	1	1	1	2.098890607
punctuat_remov	3	3	9	9	0.431662246
set_featur	2	1	2	4	2.265276427
twitter_facebook	5	4	20	25	-0.235566114
variou_techniqu	3	3	9	9	0.431662246
word_ad	2	2	4	4	1.265276427
accu_raci	3	2	6	9	1.431662246
algorithm_accuraci	1	1	1	1	2.098890607
algorithm_consist	2	2	4	4	1.265276427
algorithm_naiv	1	1	1	1	2.098890607
collect_collect	1	1	1	1	2.098890607
compar_us	5	5	25	25	-1.235566114
comparison_document	3	3	9	9	0.431662246
comparison_precis	7	5	35	49	-0.902794475
describ_process	4	4	16	16	-0.401951934
develop_develop	1	1	1	1	2.098890607
equal_length	4	2	8	16	1.598048066
featur_perform	6	6	36	36	-2.069180295
frequenc_corpu	10	4	40	100	0.596362983
http_lucen	5	5	25	25	-1.235566114
keyword_queri	2	2	4	4	1.265276427
measur_estim	7	1	7	49	3.097205525
model_take	3	3	9	9	0.431662246
obtain_word	5	4	20	25	-0.235566114
probabilist_classifi	5	4	20	25	-0.235566114
process_activ	2	1	2	4	2.265276427
score_comput	7	5	35	49	-0.902794475
step_select	1	1	1	1	2.098890607
system_learn	2	2	4	4	1.265276427
term_relev	5	3	15	25	0.764433886
word_structur	2	1	2	4	2.265276427
word_type	4	4	16	16	-0.401951934
algorithm_classif	4	3	12	16	0.598048066
base_mean	6	5	30	36	-1.069180295
clean_data	5	4	20	25	-0.235566114
document_creat	6	6	36	36	-2.069180295

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
document_remov	2	2	4	4	1.265276427
extract_name	7	3	21	49	1.097205525
func_tion	3	2	6	9	1.431662246
issn_issn	2	2	4	4	1.265276427
matrix_term	6	3	18	36	0.930819705
meaning_inform	2	2	4	4	1.265276427
method_detect	7	6	42	49	-1.902794475
output_process	2	1	2	4	2.265276427
system_avail	3	3	9	9	0.431662246
system_detect	4	4	16	16	-0.401951934
text_sourc	3	3	9	9	0.431662246
time_base	5	3	15	25	0.764433886
remov_step	2	2	4	4	1.265276427
parent_node	2	1	2	4	2.265276427
perform_obtain	3	3	9	9	0.431662246
word_lead	1	1	1	1	2.098890607
appear_text	1	1	1	1	2.098890607
cluster_repres	2	2	4	4	1.265276427
inform_servic	3	1	3	9	2.431662246
predefin_class	5	4	20	25	-0.235566114
applic_inform	5	5	25	25	-1.235566114
becom_increasingli	4	3	12	16	0.598048066
classif_data	3	3	9	9	0.431662246
inform_social	2	1	2	4	2.265276427
lower_number	3	3	9	9	0.431662246
techniqu_featur	1	1	1	1	2.098890607
affix_word	3	2	6	9	1.431662246
classif_arab	2	2	4	4	1.265276427
dataset_avail	3	2	6	9	1.431662246
dataset_creat	5	3	15	25	0.764433886
featur_semant	4	3	12	16	0.598048066
function_similar	3	3	9	9	0.431662246
perform_step	1	1	1	1	2.098890607
repres_singl	2	2	4	4	1.265276427
step_gener	1	1	1	1	2.098890607
time_number	1	1	1	1	2.098890607
token_us	2	2	4	4	1.265276427
vector_number	6	4	24	36	-0.069180295

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
approach_pattern	2	2	4	4	1.265276427
contain_topic	3	1	3	9	2.431662246
content_type	4	1	4	16	2.598048066
degre_similar	2	2	4	4	1.265276427
form_inform	4	4	16	16	-0.401951934
improv_us	5	5	25	25	-1.235566114
inform_form	2	2	4	4	1.265276427
interest_pattern	1	1	1	1	2.098890607
model_produc	1	1	1	1	2.098890607
present_text	2	2	4	4	1.265276427
score_precis	4	3	12	16	0.598048066
stem_exampl	1	1	1	1	2.098890607
text_appli	4	3	12	16	0.598048066
valu_chosen	2	2	4	4	1.265276427
automat_emot	5	2	10	25	1.764433886
base_perform	1	1	1	1	2.098890607
cluster_topic	2	2	4	4	1.265276427
contain_specif	3	3	9	9	0.431662246
data_describ	6	4	24	36	-0.069180295
data_estim	3	2	6	9	1.431662246
data_user	2	2	4	4	1.265276427
electron_commun	5	3	15	25	0.764433886
exist_techniqu	3	2	6	9	1.431662246
frequenc_text	2	2	4	4	1.265276427
languag_stem	4	3	12	16	0.598048066
method_topic	5	3	15	25	0.764433886
model_increas	5	4	20	25	-0.235566114
object_base	4	3	12	16	0.598048066
produc_cluster	3	1	3	9	2.431662246
rela_tionship	2	2	4	4	1.265276427
signific_number	1	1	1	1	2.098890607
similar_semant	4	3	12	16	0.598048066
system_creat	1	1	1	1	2.098890607
time_accuraci	6	2	12	36	1.930819705
topic_us	5	3	15	25	0.764433886
train_word	3	3	9	9	0.431662246
word_valu	2	2	4	4	1.265276427
semant_concept	1	1	1	1	2.098890607

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
languag_form	3	3	9	9	0.431662246
stemmer_compar	1	1	1	1	2.098890607
distribut_class	1	1	1	1	2.098890607
binari_valu	1	1	1	1	2.098890607
consid_number	2	2	4	4	1.265276427
document_therefor	2	2	4	4	1.265276427
gener_train	1	1	1	1	2.098890607
higher_weight	4	3	12	16	0.598048066
method_present	1	1	1	1	2.098890607
word_preposit	1	1	1	1	2.098890607
approach_select	2	2	4	4	1.265276427
assign_cluster	2	1	2	4	2.265276427
cluster_compar	1	1	1	1	2.098890607
form_form	3	3	9	9	0.431662246
grow_rapidli	3	3	9	9	0.431662246
matrix_contain	1	1	1	1	2.098890607
method_semant	2	2	4	4	1.265276427
term_identifi	1	1	1	1	2.098890607
text_present	1	1	1	1	2.098890607
topic_similar	1	1	1	1	2.098890607
vector_input	6	2	12	36	1.930819705
analysi_comput	1	1	1	1	2.098890607
analysi_problem	3	2	6	9	1.431662246
approach_compar	1	1	1	1	2.098890607
emerg_technolog	1	1	1	1	2.098890607
exist_algorithm	3	1	3	9	2.431662246
graph_model	1	1	1	1	2.098890607
luhn_automat	1	1	1	1	2.098890607
method_construct	2	2	4	4	1.265276427
order_measur	2	2	4	4	1.265276427
perform_fold	7	3	21	49	1.097205525
remov_nois	5	3	15	25	0.764433886
similar_approach	7	5	35	49	-0.902794475
system_refer	1	1	1	1	2.098890607
tool_provid	4	3	12	16	0.598048066
transact_pattern	4	2	8	16	1.598048066
analysi_knowledg	4	4	16	16	-0.401951934
base_appli	4	3	12	16	0.598048066

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
base_rank	5	3	15	25	0.764433886
classifi_term	3	2	6	9	1.431662246
crucial_role	4	2	8	16	1.598048066
featur_learn	5	3	15	25	0.764433886
field_data	3	3	9	9	0.431662246
function_defin	4	4	16	16	-0.401951934
gener_architectur	5	3	15	25	0.764433886
good_featur	7	3	21	49	1.097205525
lemmat_word	5	3	15	25	0.764433886
mathemat_scienc	2	2	4	4	1.265276427
media_content	2	2	4	4	1.265276427
model_machin	2	2	4	4	1.265276427
morpho_syntact	4	1	4	16	2.598048066
number_attribut	5	2	10	25	1.764433886
number_concept	1	1	1	1	2.098890607
perform_dataset	6	4	24	36	-0.069180295
similar_group	3	3	9	9	0.431662246
simpl_probabilist	6	4	24	36	-0.069180295
solv_issu	2	2	4	4	1.265276427
split_text	3	2	6	9	1.431662246
step_find	2	2	4	4	1.265276427
stochast_gradient	2	2	4	4	1.265276427
text_step	3	3	9	9	0.431662246
third_type	4	3	12	16	0.598048066
type_system	6	2	12	36	1.930819705
cluster_correspond	2	2	4	4	1.265276427
compar_origin	1	1	1	1	2.098890607
sequenc_model	1	1	1	1	2.098890607
rule_defin	2	1	2	4	2.265276427
correspond_featur	2	2	4	4	1.265276427
process_search	5	3	15	25	0.764433886
therrefor_develop	1	1	1	1	2.098890607
word_indic	1	1	1	1	2.098890607
categori_us	2	1	2	4	2.265276427
classif_new	2	2	4	4	1.265276427
correspond_topic	3	3	9	9	0.431662246
dictionari_dictionari	3	3	9	9	0.431662246
document_normal	1	1	1	1	2.098890607

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
engin_retriev	1	1	1	1	2.098890607
inquiri_word	2	2	4	4	1.265276427
remov_arab	2	2	4	4	1.265276427
requir_addit	4	3	12	16	0.598048066
step_token	3	3	9	9	0.431662246
us_normal	4	4	16	16	-0.401951934
alphabet_charact	3	3	9	9	0.431662246
base_implement	1	1	1	1	2.098890607
base_pattern	1	1	1	1	2.098890607
base_probabl	2	2	4	4	1.265276427
case_text	1	1	1	1	2.098890607
charact_punctuat	2	2	4	4	1.265276427
engin_inform	2	2	4	4	1.265276427
extract_phrase	2	2	4	4	1.265276427
initi_step	3	3	9	9	0.431662246
measur_qualiti	2	2	4	4	1.265276427
method_effect	3	3	9	9	0.431662246
model_calcul	1	1	1	1	2.098890607
particular_case	2	2	4	4	1.265276427
rapid_develop	2	1	2	4	2.265276427
string_number	1	1	1	1	2.098890607
system_make	3	1	3	9	2.431662246
toulous_franc	1	1	1	1	2.098890607
us_resourc	2	2	4	4	1.265276427
valu_model	5	4	20	25	-0.235566114
vector_length	5	3	15	25	0.764433886
word_porter	2	2	4	4	1.265276427
approach_found	3	3	9	9	0.431662246
call_term	1	1	1	1	2.098890607
classifi_decis	3	3	9	9	0.431662246
content_tweet	3	3	9	9	0.431662246
database_commun	4	4	16	16	-0.401951934
document_specif	5	3	15	25	0.764433886
human_social	3	3	9	9	0.431662246
inform_analysi	2	2	4	4	1.265276427
linguist_volum	1	1	1	1	2.098890607
method_case	2	2	4	4	1.265276427
model_thu	1	1	1	1	2.098890607

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
page_contain	3	3	9	9	0.431662246
partial_support	2	2	4	4	1.265276427
plai_crucial	3	1	3	9	2.431662246
problem_includ	3	2	6	9	1.431662246
scienc_softwar	1	1	1	1	2.098890607
step_approach	7	3	21	49	1.097205525
step_featur	6	2	12	36	1.930819705
studi_comput	7	2	14	49	2.097205525
system_capabl	1	1	1	1	2.098890607
system_project	5	5	25	25	-1.235566114
techniqu_help	3	2	6	9	1.431662246
techniqu_perform	3	3	9	9	0.431662246
text_twitter	2	2	4	4	1.265276427
time_exampl	3	3	9	9	0.431662246
tool_gener	3	3	9	9	0.431662246
us_preprocess	3	3	9	9	0.431662246
vector_contain	5	5	25	25	-1.235566114
document_phrase	1	1	1	1	2.098890607
text_vector	1	1	1	1	2.098890607
algorithm_given	1	1	1	1	2.098890607
method_word	1	1	1	1	2.098890607
problem_word	1	1	1	1	2.098890607
spend_time	2	2	4	4	1.265276427
state_model	1	1	1	1	2.098890607
combin_term	2	2	4	4	1.265276427
effici_search	1	1	1	1	2.098890607
enorm_amount	1	1	1	1	2.098890607
further_increas	1	1	1	1	2.098890607
model_addit	2	2	4	4	1.265276427
model_requir	2	2	4	4	1.265276427
select_topic	2	2	4	4	1.265276427
term_search	2	1	2	4	2.265276427
test_compar	2	2	4	4	1.265276427
addit_word	2	2	4	4	1.265276427
analysi_applic	1	1	1	1	2.098890607
approach_reli	1	1	1	1	2.098890607
databas_search	3	2	6	9	1.431662246
elimin_stem	2	2	4	4	1.265276427

<b>Theme</b>	<b>2016 Tot</b>	<b>2016 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
eval_uation	3	3	9	9	0.431662246
identifi_similar	2	2	4	4	1.265276427
knowledg_document	2	2	4	4	1.265276427
network_machin	2	2	4	4	1.265276427
split_data	3	3	9	9	0.431662246
steinbach_karypi	2	2	4	4	1.265276427
store_file	1	1	1	1	2.098890607
topic_exampl	3	2	6	9	1.431662246
user_data	3	3	9	9	0.431662246
valu_posit	2	2	4	4	1.265276427
accord_word	3	2	6	9	1.431662246
algorithm_determin	2	2	4	4	1.265276427
anger_fear	1	1	1	1	2.098890607
approach_consist	3	3	9	9	0.431662246
approach_outperform	5	3	15	25	0.764433886
candid_gener	6	3	18	36	0.930819705
choos_number	5	3	15	25	0.764433886
collect_period	1	1	1	1	2.098890607
compar_number	2	2	4	4	1.265276427
construct_graph	1	1	1	1	2.098890607
count_time	1	1	1	1	2.098890607
descrip_tion	3	2	6	9	1.431662246
design_algorithm	2	2	4	4	1.265276427
document_view	3	3	9	9	0.431662246
extract_textual	5	4	20	25	-0.235566114
featur_preprocess	4	2	8	16	1.598048066
filter_step	3	3	9	9	0.431662246
help_classifi	2	2	4	4	1.265276427
independ_given	2	1	2	4	2.265276427
knowledg_sourc	2	2	4	4	1.265276427
label_class	2	2	4	4	1.265276427
method_produc	3	3	9	9	0.431662246
overal_score	3	3	9	9	0.431662246
process_human	1	1	1	1	2.098890607
step_construct	1	1	1	1	2.098890607
strength_weak	1	1	1	1	2.098890607
test_purpos	4	3	12	16	0.598048066
us_extern	4	4	16	16	-0.401951934

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
word_divid	1	1	1	1	2.098890607
word_system	1	1	1	1	2.098890607
topic_categor	2	1	2	4	2.265276427
consid_time	1	1	1	1	2.098890607
data_partit	2	1	2	4	2.265276427
exist_document	2	2	4	4	1.265276427
featur_name	2	2	4	4	1.265276427
iter_step	1	1	1	1	2.098890607
label_base	3	3	9	9	0.431662246
media_platform	1	1	1	1	2.098890607
method_keyword	1	1	1	1	2.098890607
base_frequent	1	1	1	1	2.098890607
cate_gori	3	3	9	9	0.431662246
comparison_baselin	2	2	4	4	1.265276427
comput_perform	2	2	4	4	1.265276427
consid_case	1	1	1	1	2.098890607
dataset_method	2	2	4	4	1.265276427
distribut_represent	1	1	1	1	2.098890607
introduc_concept	1	1	1	1	2.098890607
level_document	2	1	2	4	2.265276427
metric_text	3	3	9	9	0.431662246
queri_gener	1	1	1	1	2.098890607
support_grant	2	2	4	4	1.265276427
user_perform	1	1	1	1	2.098890607
variou_approach	2	2	4	4	1.265276427
accuraci_number	2	2	4	4	1.265276427
affect_user	1	1	1	1	2.098890607
analysi_emot	2	2	4	4	1.265276427
analysi_featur	1	1	1	1	2.098890607
analysi_order	2	2	4	4	1.265276427
averag_sentenc	1	1	1	1	2.098890607
categori_tweet	4	2	8	16	1.598048066
contain_singl	2	2	4	4	1.265276427
discoveri_databas	3	2	6	9	1.431662246
distanc_calcul	1	1	1	1	2.098890607
experi_featur	3	3	9	9	0.431662246
graph_structur	1	1	1	1	2.098890607
increas_precis	1	1	1	1	2.098890607

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
keyword_cluster	2	2	4	4	1.265276427
level_system	1	1	1	1	2.098890607
main_sourc	2	1	2	4	2.265276427
neg_affect	2	2	4	4	1.265276427
network_data	3	3	9	9	0.431662246
order_base	2	2	4	4	1.265276427
process_construct	2	1	2	4	2.265276427
sampl_test	3	2	6	9	1.431662246
step_build	3	3	9	9	0.431662246
us_exampl	2	2	4	4	1.265276427
user_give	3	3	9	9	0.431662246
vector_calcul	1	1	1	1	2.098890607
word_retriev	4	2	8	16	1.598048066
written_java	3	3	9	9	0.431662246
ad_word	1	1	1	1	2.098890607
extern_sourc	1	1	1	1	2.098890607
featur_posit	3	2	6	9	1.431662246
overal_system	2	2	4	4	1.265276427
stem_languag	2	2	4	4	1.265276427
algorithm_consid	2	2	4	4	1.265276427
automat_creation	1	1	1	1	2.098890607
cluster_unsupervis	1	1	1	1	2.098890607
dataset_compar	2	2	4	4	1.265276427
describ_algorithm	2	2	4	4	1.265276427
effici_cluster	1	1	1	1	2.098890607
full_word	2	1	2	4	2.265276427
model_human	1	1	1	1	2.098890607
punctuat_stop	1	1	1	1	2.098890607
rang_valu	1	1	1	1	2.098890607
remov_frequent	1	1	1	1	2.098890607
sampl_word	1	1	1	1	2.098890607
time_text	1	1	1	1	2.098890607
word_affect	1	1	1	1	2.098890607
algorithm_obtain	1	1	1	1	2.098890607
approach_provid	4	3	12	16	0.598048066
calcul_step	3	3	9	9	0.431662246
difficult_languag	1	1	1	1	2.098890607
document_arab	3	2	6	9	1.431662246

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
equat_calcul	2	2	4	4	1.265276427
extract_variou	4	4	16	16	-0.401951934
famili_member	1	1	1	1	2.098890607
index_base	2	2	4	4	1.265276427
indic_cluster	1	1	1	1	2.098890607
inform_becom	1	1	1	1	2.098890607
manual_extract	3	3	9	9	0.431662246
metric_base	3	3	9	9	0.431662246
miller_wordnet	2	2	4	4	1.265276427
perform_supervis	4	2	8	16	1.598048066
process_design	2	1	2	4	2.265276427
process_part	3	3	9	9	0.431662246
score_method	2	2	4	4	1.265276427
stream_text	1	1	1	1	2.098890607
system_conclus	2	2	4	4	1.265276427
test_split	2	2	4	4	1.265276427
topic_cover	4	3	12	16	0.598048066
uniqu_featur	2	2	4	4	1.265276427
user_send	3	3	9	9	0.431662246
predict_categor	1	1	1	1	2.098890607
annual_symposium	1	1	1	1	2.098890607
model_respect	2	2	4	4	1.265276427
analysi_time	2	1	2	4	2.265276427
approach_deal	2	2	4	4	1.265276427
base_natur	1	1	1	1	2.098890607
collect_user	2	2	4	4	1.265276427
creation_literatur	1	1	1	1	2.098890607
data_group	3	2	6	9	1.431662246
document_pars	1	1	1	1	2.098890607
exampl_queri	3	2	6	9	1.431662246
normal_us	1	1	1	1	2.098890607
topic_refer	1	1	1	1	2.098890607
complet_text	2	2	4	4	1.265276427
context_process	2	2	4	4	1.265276427
correl_topic	2	1	2	4	2.265276427
data_chang	1	1	1	1	2.098890607
help_peopl	2	2	4	4	1.265276427
inform_thu	1	1	1	1	2.098890607

Theme	2016 Tot	2016 Doc	XY	X^2	Distance
limit_word	1	1	1	1	2.098890607
method_exampl	3	3	9	9	0.431662246
mine_word	1	1	1	1	2.098890607
model_prove	2	2	4	4	1.265276427
model_singl	1	1	1	1	2.098890607
nois_data	3	3	9	9	0.431662246
perform_find	2	2	4	4	1.265276427
term_process	3	3	9	9	0.431662246
time_make	2	2	4	4	1.265276427
us_collect	2	2	4	4	1.265276427
us_determin	1	1	1	1	2.098890607
user_accord	2	2	4	4	1.265276427
valu_text	1	1	1	1	2.098890607
word_correl	2	1	2	4	2.265276427
mean_approach	1	1	1	1	2.098890607
current_version	1	1	1	1	2.098890607
martin_porter	1	1	1	1	2.098890607
obtain_relev	2	2	4	4	1.265276427
refer_mean	1	1	1	1	2.098890607
term_obtain	1	1	1	1	2.098890607
approach_discov	1	1	1	1	2.098890607
approach_estim	3	3	9	9	0.431662246
catégori_classif	1	1	1	1	2.098890607
classifi_built	3	2	6	9	1.431662246
classifi_simpl	1	1	1	1	2.098890607
data_initi	2	2	4	4	1.265276427
featur_input	2	2	4	4	1.265276427
function_determin	2	2	4	4	1.265276427
improv_document	2	2	4	4	1.265276427
measur_emot	3	2	6	9	1.431662246
preprocess_token	2	2	4	4	1.265276427
problem_lack	3	3	9	9	0.431662246
process_complet	2	1	2	4	2.265276427
provid_signific	1	1	1	1	2.098890607
select_group	1	1	1	1	2.098890607
system_stem	3	2	6	9	1.431662246
thousand_document	1	1	1	1	2.098890607
train_remain	1	1	1	1	2.098890607

<b>Theme</b>	<b>2016 Tot</b>	<b>2016 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
contain_user	1	1	1	1	2.098890607
email_address	1	1	1	1	2.098890607
account_order	1	1	1	1	2.098890607
accuraci_significantli	1	1	1	1	2.098890607
base_lexic	2	1	2	4	2.265276427
base_theori	1	1	1	1	2.098890607
becom_time	1	1	1	1	2.098890607
featur_task	1	1	1	1	2.098890607
limit_term	1	1	1	1	2.098890607
process_break	1	1	1	1	2.098890607
public_date	1	1	1	1	2.098890607
retriev_semant	1	1	1	1	2.098890607
space_number	1	1	1	1	2.098890607
studi_analysi	1	1	1	1	2.098890607
symposium_document	1	1	1	1	2.098890607
tree_approach	1	1	1	1	2.098890607
apach_core	1	1	1	1	2.098890607

## APPENDIX 5-L

This appendix contains the distance from trend calculations for 2017.

Column H	Column I
SUM x	24076.0
SUM Y	9922.0
SUM XY	246350
SUM X^2	1237886
n	2202
a	2.959308327
b	0.141452196
Trend Formula	$Y = 2.95930832723747 + 0.141452195689612X$

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
machin_learn	304	37	11248	92416	8.960775817
text_mine	160	40	6400	25600	-14.40834036
natur_languag	163	35	5705	26569	-8.983983775
inform_retriev	80	33	2640	6400	-18.72451602
data_mine	208	31	6448	43264	1.381365031
stop_word	181	32	5792	32761	-3.437844253
naiv_bay	270	33	8910	72900	8.151401163
text_classif	148	29	4292	21904	-5.105766711
languag_process	113	33	3729	12769	-14.05659356
featur_select	198	23	4554	39204	7.966843074
text_document	152	23	3496	23104	1.460042072
sentiment_analysi	257	18	4626	66049	21.31252262
neural_network	256	20	5120	65536	19.17107042
social_media	176	19	3344	30976	8.854894769
precis_recal	100	16	1600	10000	1.104527896
social_network	127	13	1651	16129	7.92373718
document_cluster	98	8	784	9604	8.821623505
part_speech	204	16	3264	41616	15.81555625
comput_linguist	92	20	1840	8464	-4.027089669

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
arab_text	157	7	1099	24649	18.16730305
topic_model	39	6	234	1521	2.475943959
term_frequenc	78	22	1716	6084	-8.007420409
text_categor	39	12	468	1521	-3.524056041
support_vector	124	26	3224	15376	-5.500619407
vector_space	40	9	360	1600	-0.382603845
train_data	90	25	2250	8100	-9.309994061
vector_machin	114	25	2850	12996	-5.915141364
name_entiti	18	7	126	324	-1.49455215
search_engin	26	9	234	676	-2.362934585
similar_measur	41	9	369	1681	-0.241151649
document_frequenc	51	21	1071	2601	-10.82662969
featur_extract	71	17	1207	5041	-3.997585779
posit_neg	118	12	1416	13924	7.650667419
base_approach	85	10	850	7225	4.982744961
term_weight	50	9	450	2500	1.031918112
text_process	121	21	2541	14641	-0.924975994
text_analysi	39	18	702	1521	-9.524056041
learn_algorithm	86	24	2064	7396	-8.875802843
word_remov	42	20	840	1764	-11.09969945
space_model	40	10	400	1600	-1.382603845
artifici_intellig	66	19	1254	4356	-6.704846757
cross_valid	71	17	1207	5041	-3.997585779
arab_languag	66	5	330	4356	7.295153243
featur_vector	65	13	845	4225	-0.846298953
stem_algorithm	30	13	390	900	-5.797125802
cluster_algorithm	48	10	480	2304	-0.25098628
word_document	42	16	672	1764	-7.099699454
train_test	53	12	636	2809	-1.543725301
scienc_engin	55	13	715	3025	-2.26082091
number_word	38	15	570	1444	-6.665508237
word_stem	45	22	990	2025	-12.67534287
inform_extract	80	9	720	6400	5.275483982
decis_tree	89	17	1513	7921	-1.451446256
document_collect	17	9	153	289	-3.636004346
semant_analysi	43	11	473	1849	-1.958247258
softwar_engin	105	7	735	11025	10.81178887
document_document	40	14	560	1600	-5.382603845

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
latent_semant	32	9	288	1024	-1.514221411
invers_document	38	20	760	1444	-11.66550824
retriev_system	8	7	56	64	-2.909074107
depart_comput	41	18	738	1681	-9.241151649
bay_classifi	63	15	945	3969	-3.129203344
test_data	81	15	1215	6561	-0.583063822
cosin_similar	13	6	78	169	-1.201813129
document_term	29	14	406	841	-6.938577998
data_process	56	14	784	3136	-3.119368714
data_set	57	18	1026	3249	-6.977916518
data_collect	60	13	780	3600	-1.553559931
rule_base	64	13	832	4096	-0.987751149
word_list	31	7	217	961	0.344326394
train_model	16	6	96	256	-0.777456542
keyword_extract	10	5	50	100	-0.626169716
random_forest	98	12	1176	9604	4.821623505
base_method	28	13	364	784	-6.080030193
nearest_neighbor	40	14	560	1600	-5.382603845
latent_dirichlet	32	4	128	1024	3.485778589
stem_word	33	14	462	1089	-6.372769215
classif_algorithm	76	18	1368	5776	-4.2903248
porter_stemmer	16	9	144	256	-3.777456542
speech_tag	51	8	408	2601	2.173370307
mine_techniqu	32	8	256	1024	-0.514221411
knowledg_base	14	9	126	196	-4.060360933
scienc_technolog	21	10	210	441	-4.070195563
electr_engin	7	6	42	49	-2.050526303
supervis_learn	48	16	768	2304	-6.25098628
semant_similar	4	4	16	16	-0.47488289
model_base	70	12	840	4900	0.860962026
base_featur	18	9	162	324	-3.49455215
engin_comput	11	10	110	121	-5.48471752
light_stem	72	4	288	5184	9.143866417
text_file	71	13	923	5041	0.002414221
cloud_comput	118	9	1062	13924	10.65066742
data_analysi	47	15	705	2209	-5.392438475
document_contain	18	13	234	324	-7.49455215
dirichlet_alloc	32	4	128	1024	3.485778589

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
automat_text	16	10	160	256	-4.777456542
remov_stop	23	16	368	529	-9.787291172
engin_technolog	19	9	171	361	-3.353099955
cluster_cluster	25	7	175	625	-0.504386781
document_classif	39	12	468	1521	-3.524056041
word_sentenc	28	13	364	784	-6.080030193
model_us	82	15	1230	6724	-0.441611626
word_frequenc	36	12	432	1296	-3.948412628
languag_model	23	8	184	529	-1.787291172
classif_us	30	15	450	900	-7.797125802
solv_problem	59	7	413	3481	4.304987873
system_us	28	14	392	784	-7.080030193
recal_precis	19	7	133	361	-1.353099955
learn_approach	32	14	448	1024	-6.514221411
document_summar	8	4	32	64	0.090925893
frequenc_word	22	11	242	484	-4.928743368
inform_scienc	22	12	264	484	-5.928743368
word_text	46	16	736	2116	-6.533890671
frequenc_term	21	11	231	441	-5.070195563
frequenc_invers	32	17	544	1024	-9.514221411
improv_perform	43	15	645	1849	-5.958247258
relev_document	9	7	63	81	-2.767621912
inform_process	32	13	416	1024	-5.514221411
comput_applic	20	9	180	400	-3.211647759
document_word	19	10	190	361	-4.353099955
extract_featur	32	14	448	1024	-6.514221411
compar_studi	24	12	288	576	-5.645838976
method_base	29	12	348	841	-4.938577998
select_method	41	12	492	1681	-3.241151649
recal_measur	38	10	380	1444	-1.665508237
classif_accuraci	39	14	546	1521	-5.524056041
number_time	33	11	363	1089	-3.372769215
topic_topic	16	6	96	256	-0.777456542
learn_model	24	10	240	576	-3.645838976
document_repres	20	12	240	400	-6.211647759
languag_text	31	9	279	961	-1.655673606
learn_techniqu	46	15	690	2116	-5.533890671
cluster_method	28	5	140	784	1.919969807

<b>Theme</b>	<b>2017 Tot</b>	<b>2017 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
similar_document	10	7	70	100	-2.626169716
multi_document	8	3	24	64	1.090925893
base_model	36	11	396	1296	-2.948412628
number_featur	27	7	189	729	-0.221482389
document_us	13	10	130	169	-5.201813129
knowledg_discoveri	16	9	144	256	-3.777456542
word_appear	17	12	204	289	-6.636004346
word_featur	23	8	184	529	-1.787291172
document_vector	12	7	84	144	-2.343265324
mean_word	15	7	105	225	-1.918908737
extract_text	32	11	352	1024	-3.514221411
textual_data	44	14	616	1936	-4.816795062
form_word	19	13	247	361	-7.353099955
model_inform	95	6	570	9025	10.39726692
repres_document	16	8	128	256	-2.777456542
model_model	29	8	232	841	-0.938577998
process_step	49	18	882	2401	-8.109534084
extract_inform	35	8	280	1225	-0.089864824
base_similar	7	4	28	49	-0.050526303
languag_technolog	17	10	170	289	-4.636004346
word_base	8	5	40	64	-0.909074107
comput_engin	39	13	507	1521	-4.524056041
scienc_inform	36	10	360	1296	-1.948412628
right_reserv	12	3	36	144	1.656734676
opinion_mine	17	9	153	289	-3.636004346
process_text	33	13	429	1089	-5.372769215
evalu_metric	54	4	216	2916	6.597726894
manag_system	65	8	520	4225	4.153701047
classif_task	17	10	170	289	-4.636004346
document_number	42	10	420	1764	-1.099699454
stem_process	18	13	234	324	-7.49455215
test_dataset	19	14	266	361	-8.353099955
document_represent	17	8	136	289	-2.636004346
noun_verb	35	8	280	1225	-0.089864824
weight_term	22	10	220	484	-3.928743368
us_word	18	13	234	324	-7.49455215
amount_data	37	9	333	1369	-0.806960432
word_model	8	5	40	64	-0.909074107

<b>Theme</b>	<b>2017 Tot</b>	<b>2017 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
document_matrix	22	10	220	484	-3.928743368
number_topic	14	4	56	196	0.939639067
fold_cross	30	11	330	900	-3.797125802
similar_word	5	5	25	25	-1.333430694
word_vector	4	2	8	16	1.52511711
sentenc_document	6	5	30	36	-1.191978499
featur_space	44	14	616	1936	-4.816795062
averag_precis	2	1	2	4	2.242212719
term_base	4	4	16	16	-0.47488289
mean_cluster	22	7	154	484	-0.928743368
logist_regress	15	7	105	225	-1.918908737
term_extract	7	5	35	49	-1.050526303
collect_document	19	10	190	361	-4.353099955
recal_score	5	3	15	25	0.666569306
us_data	69	16	1104	4761	-3.28049017
khoja_stemmer	43	3	129	1849	6.041752742
text_content	10	6	60	100	-1.626169716
stock_market	88	5	440	7744	10.40710155
number_cluster	15	4	60	225	1.081091263
morpholog_analysi	23	5	115	529	1.212708828
pattern_recognit	25	11	275	625	-4.504386781
us_inform	35	7	245	1225	0.910135176
data_data	29	9	261	841	-1.938577998
contain_word	18	12	216	324	-6.49455215
classif_model	57	11	627	3249	0.022083482
base_text	27	15	405	729	-8.221482389
step_step	11	6	66	121	-1.48471752
user_queri	7	5	35	49	-1.050526303
model_train	17	8	136	289	-2.636004346
train_document	13	7	91	169	-2.201813129
featur_featur	16	8	128	256	-2.777456542
index_term	11	9	99	121	-4.48471752
select_featur	31	10	310	961	-2.655673606
unstructur_data	14	7	98	196	-2.060360933
arab_document	15	4	60	225	1.081091263
us_machin	32	12	384	1024	-4.514221411
time_consum	24	13	312	576	-6.645838976
algorithm_base	31	17	527	961	-9.655673606

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
analysi_retriev	2	1	2	4	2.242212719
knowledg_manag	11	9	99	121	-4.48471752
cluster_base	13	6	78	169	-1.201813129
cluster_document	12	5	60	144	-0.343265324
learn_method	20	11	220	400	-5.211647759
improv_accuraci	21	11	231	441	-5.070195563
word_mean	10	7	70	100	-2.626169716
textual_content	8	2	16	64	2.090925893
cluster_us	21	9	189	441	-3.070195563
human_languag	20	10	200	400	-4.211647759
predict_model	56	9	504	3136	1.880631286
weight_scheme	19	6	114	361	-0.353099955
base_system	45	11	495	2025	-1.675342867
intellig_system	40	9	360	1600	-0.382603845
collect_data	47	11	517	2209	-1.392438475
comput_inform	29	5	145	841	2.061422002
mobil_devic	26	4	104	676	2.637065415
word_occurr	14	5	70	196	-0.060360933
document_text	12	10	120	144	-5.343265324
classifi_classifi	15	10	150	225	-4.918908737
cluster_techniqu	13	4	52	169	0.798186871
term_occur	9	7	63	81	-2.767621912
gold_standard	23	5	115	529	1.212708828
queri_term	36	5	180	1296	3.051587372
mean_algorithm	17	7	119	289	-1.636004346
world_wide	9	4	36	81	0.232378088
text_preprocess	21	9	189	441	-3.070195563
system_develop	35	9	315	1225	-1.089864824
term_term	8	4	32	64	0.090925893
develop_inform	14	9	126	196	-4.060360933
point_view	17	5	85	289	0.363995654
word_root	11	8	88	121	-3.48471752
recommend_system	11	5	55	121	-0.48471752
maximum_entropi	14	6	84	196	-1.060360933
stem_stem	13	9	117	169	-4.201813129
error_rate	12	6	72	144	-1.343265324
plai_role	31	8	248	961	-0.655673606
singl_word	12	10	120	144	-5.343265324

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
prefix_suffix	15	7	105	225	-1.918908737
imag_process	40	6	240	1600	2.617396155
root_word	16	10	160	256	-4.777456542
document_retriev	4	3	12	16	0.52511711
retriev_document	8	6	48	64	-1.909074107
spam_filter	7	3	21	49	0.949473697
occur_document	9	5	45	81	-0.767621912
increas_number	36	10	360	1296	-1.948412628
system_base	29	8	232	841	-0.938577998
classif_method	34	12	408	1156	-4.231317019
comput_system	25	8	200	625	-1.504386781
inform_gain	23	7	161	529	-0.787291172
data_train	25	13	325	625	-6.504386781
document_similar	10	7	70	100	-2.626169716
us_text	16	9	144	256	-3.777456542
docu_ment	7	5	35	49	-1.050526303
sourc_text	54	6	324	2916	4.597726894
full_text	6	5	30	36	-1.191978499
latent_topic	7	2	14	49	1.949473697
model_text	19	8	152	361	-2.353099955
advanc_comput	31	8	248	961	-0.655673606
genet_algorithm	48	8	384	2304	1.74901372
knowledg_data	19	8	152	361	-2.353099955
search_queri	2	2	4	4	1.242212719
frequent_word	17	10	170	289	-4.636004346
inform_text	23	9	207	529	-2.787291172
term_appear	4	4	16	16	-0.47488289
class_label	25	6	150	625	0.495613219
train_dataset	17	9	153	289	-3.636004346
number_term	14	8	112	196	-3.060360933
probabl_distribut	16	6	96	256	-0.777456542
preprocess_step	14	8	112	196	-3.060360933
porter_stem	19	6	114	361	-0.353099955
issn_onlin	8	3	24	64	1.090925893
linguist_featur	3	3	9	9	0.383664914
similar_score	10	6	60	100	-1.626169716
text_retriev	4	4	16	16	-0.47488289
evalu_us	25	6	150	625	0.495613219

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
word_occur	14	6	84	196	-1.060360933
condit_probabl	31	6	186	961	1.344326394
data_engin	17	8	136	289	-2.636004346
test_document	14	5	70	196	-0.060360933
process_manag	19	8	152	361	-2.353099955
exampl_word	17	9	153	289	-3.636004346
languag_resourc	18	8	144	324	-2.49455215
reduc_number	22	6	132	484	0.071256632
base_term	7	5	35	49	-1.050526303
approach_base	17	11	187	289	-5.636004346
base_classifi	48	11	528	2304	-1.25098628
process_techniqu	30	13	390	900	-5.797125802
fals_posit	6	6	36	36	-2.191978499
frequent_pattern	11	3	33	121	1.51528248
comput_commun	17	7	119	289	-1.636004346
extract_keyword	10	2	20	100	2.373830284
deep_learn	37	9	333	1369	-0.806960432
method_us	22	9	198	484	-2.928743368
phrase_base	1	1	1	1	2.100760523
document_corpu	10	6	60	100	-1.626169716
inform_knowledg	12	8	96	144	-3.343265324
classifi_text	16	12	192	256	-6.777456542
word_extract	13	9	117	169	-4.201813129
word_count	12	9	108	144	-4.343265324
retriev_inform	6	3	18	36	0.808021501
list_word	12	6	72	144	-1.343265324
structur_data	13	7	91	169	-2.201813129
input_data	20	9	180	400	-3.211647759
appear_document	11	6	66	121	-1.48471752
train_classifi	14	9	126	196	-4.060360933
sentenc_sentenc	12	6	72	144	-1.343265324
classifi_us	39	10	390	1521	-1.524056041
text_us	23	11	253	529	-4.787291172
combin_featur	8	7	56	64	-2.909074107
classifi_train	12	7	84	144	-2.343265324
approach_us	9	8	72	81	-3.767621912
document_queri	13	6	78	169	-1.201813129
classif_problem	22	12	264	484	-5.928743368

<b>Theme</b>	<b>2017 Tot</b>	<b>2017 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
object_function	54	5	270	2916	5.597726894
text_corpu	33	8	264	1089	-0.372769215
process_inform	8	7	56	64	-2.909074107
document_base	10	7	70	100	-2.626169716
infor_mation	7	5	35	49	-1.050526303
level_featur	25	3	75	625	3.495613219
system_perform	21	8	168	441	-2.070195563
program_languag	19	7	133	361	-1.353099955
system_applic	51	14	714	2601	-3.826629693
queri_expans	2	2	4	4	1.242212719
word_order	13	7	91	169	-2.201813129
algorithm_algorithm	12	9	108	144	-4.343265324
text_base	24	10	240	576	-3.645838976
pattern_mine	3	3	9	9	0.383664914
issn_volum	10	1	10	100	3.373830284
remov_stem	13	10	130	169	-5.201813129
evalu_measur	26	4	104	676	2.637065415
artifici_neural	31	9	279	961	-1.655673606
document_featur	17	3	51	289	2.363995654
view_project	14	8	112	196	-3.060360933
model_evalu	24	7	168	576	-0.645838976
media_text	5	5	25	25	-1.333430694
euclidean_distanc	14	6	84	196	-1.060360933
contain_term	6	5	30	36	-1.191978499
algorithm_perform	20	8	160	400	-2.211647759
extract_us	20	8	160	400	-2.211647759
colleg_engin	17	6	102	289	-0.636004346
build_model	42	9	378	1764	-0.099699454
linguist_analysi	3	3	9	9	0.383664914
engin_scien	27	8	216	729	-1.221482389
contain_document	13	7	91	169	-2.201813129
singl_document	7	5	35	49	-1.050526303
data_structur	13	7	91	169	-2.201813129
system_design	27	9	243	729	-2.221482389
soft_comput	25	5	125	625	1.495613219
volum_number	24	3	72	576	3.354161024
relev_inform	5	4	20	25	-0.333430694
process_document	8	7	56	64	-2.909074107

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
text_featur	17	5	85	289	0.363995654
cluster_process	16	6	96	256	-0.777456542
word_us	7	7	49	49	-3.050526303
classif_process	9	8	72	81	-3.767621912
word_term	16	11	176	256	-5.777456542
perform_test	48	2	96	2304	7.74901372
input_output	11	5	55	121	-0.48471752
user_request	7	7	49	49	-3.050526303
word_embed	3	2	6	9	1.383664914
random_field	4	3	12	16	0.52511711
featur_base	12	8	96	144	-3.343265324
public_http	17	8	136	289	-2.636004346
word_topic	6	2	12	36	1.808021501
number_iter	34	5	170	1156	2.768682981
unigram_bigram	29	5	145	841	2.061422002
allow_user	19	11	209	361	-5.353099955
design_implement	22	6	132	484	0.071256632
content_base	5	3	15	25	0.666569306
semant_index	6	4	24	36	-0.191978499
cluster_text	11	4	44	121	0.51528248
mathemat_model	24	4	96	576	2.354161024
document_process	11	7	77	121	-2.48471752
algorithm_us	11	8	88	121	-3.48471752
period_time	25	7	175	625	-0.504386781
word_sens	14	6	84	196	-1.060360933
content_page	9	9	81	81	-4.767621912
wide_rang	23	10	230	529	-3.787291172
comput_time	11	7	77	121	-2.48471752
autom_text	6	5	30	36	-1.191978499
document_topic	10	5	50	100	-0.626169716
syntact_semant	24	5	120	576	1.354161024
method_text	11	9	99	121	-4.48471752
unsupervis_learn	12	5	60	144	-0.343265324
discoveri_data	6	5	30	36	-1.191978499
informa_tion	3	3	9	9	0.383664914
data_text	16	11	176	256	-5.777456542
topic_document	17	3	51	289	2.363995654
emot_recognit	3	1	3	9	2.383664914

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
perform_us	26	11	286	676	-4.362934585
base_word	2	2	4	4	1.242212719
vector_represent	5	4	20	25	-0.333430694
us_featur	18	10	180	324	-4.49455215
measur_similar	6	5	30	36	-1.191978499
corpu_base	10	4	40	100	0.373830284
text_word	13	8	104	169	-3.201813129
graph_base	7	5	35	49	-1.050526303
semant_featur	8	5	40	64	-0.909074107
confus_matrix	13	5	65	169	-0.201813129
emot_classif	23	3	69	529	3.212708828
network_analysi	7	3	21	49	0.949473697
unstructur_text	11	8	88	121	-3.48471752
origin_document	14	6	84	196	-1.060360933
proc_conf	11	5	55	121	-0.48471752
sentenc_word	9	8	72	81	-3.767621912
distanc_measur	22	6	132	484	0.071256632
berlin_heidelberg	27	9	243	729	-2.221482389
measur_precis	44	5	220	1936	4.183204938
similar_sentenc	2	2	4	4	1.242212719
represent_document	5	4	20	25	-0.333430694
train_corpu	13	5	65	169	-0.201813129
uniqu_word	3	3	9	9	0.383664914
data_model	8	6	48	64	-1.909074107
hierarch_cluster	9	5	45	81	-0.767621912
probabilist_model	7	5	35	49	-1.050526303
evalu_perform	11	8	88	121	-3.48471752
model_perform	12	7	84	144	-2.343265324
word_level	12	4	48	144	0.656734676
pattern_base	6	3	18	36	0.808021501
classif_techniqu	30	12	360	900	-4.797125802
calcul_us	20	11	220	400	-5.211647759
data_sourc	26	10	260	676	-3.362934585
occurr_word	16	7	112	256	-1.777456542
commun_technolog	10	6	60	100	-1.626169716
stem_arab	12	3	36	144	1.656734676
inform_commun	17	5	85	289	0.363995654
taken_account	22	11	242	484	-4.928743368

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
fals_neg	5	5	25	25	-1.333430694
tweet_contain	19	5	95	361	0.646900045
occur_term	5	3	15	25	0.666569306
base_cluster	7	6	42	49	-2.050526303
reduc_dimension	9	6	54	81	-1.767621912
system_evalu	8	7	56	64	-2.909074107
word_given	12	5	60	144	-0.343265324
mine_text	10	8	80	100	-3.626169716
dataset_dataset	10	5	50	100	-0.626169716
process_time	6	5	30	36	-1.191978499
time_period	14	3	42	196	1.939639067
automat_extract	18	8	144	324	-2.49455215
dataset_consist	5	5	25	25	-1.333430694
file_contain	12	6	72	144	-1.343265324
test_perform	38	7	266	1444	1.334491763
share_task	9	5	45	81	-0.767621912
document_train	11	5	55	121	-0.48471752
word_cluster	3	1	3	9	2.383664914
user_gener	23	4	92	529	2.212708828
base_semant	7	6	42	49	-2.050526303
statist_analysi	20	13	260	400	-7.211647759
transact_knowledg	11	4	44	121	0.51528248
model_built	34	8	272	1156	-0.231317019
twitter_user	27	5	135	729	1.778517611
model_document	7	4	28	49	-0.050526303
retriev_relev	2	2	4	4	1.242212719
gram_gram	17	6	102	289	-0.636004346
speech_recognit	6	4	24	36	-0.191978499
linear_regress	33	5	165	1089	2.627230785
data_point	7	5	35	49	-1.050526303
common_word	14	7	98	196	-2.060360933
signal_process	8	4	32	64	0.090925893
calcul_similar	9	6	54	81	-1.767621912
system_system	15	6	90	225	-0.918908737
model_data	19	9	171	361	-3.353099955
standard_arab	38	4	152	1444	4.334491763
perform_system	10	7	70	100	-2.626169716
valu_calcul	15	9	135	225	-3.918908737

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
cluster_similar	3	2	6	9	1.383664914
classif_text	14	12	168	196	-7.060360933
frequenc_document	3	3	9	9	0.383664914
perform_evalu	4	4	16	16	-0.47488289
precis_measur	17	6	102	289	-0.636004346
algorithm_appli	13	8	104	169	-3.201813129
text_classifi	9	6	54	81	-1.767621912
model_predict	26	7	182	676	-0.362934585
analysi_method	19	7	133	361	-1.353099955
algo_rithm	4	3	12	16	0.52511711
distribut_topic	7	2	14	49	1.949473697
classifi_document	9	4	36	81	0.232378088
text_collect	3	2	6	9	1.383664914
extract_term	5	3	15	25	0.666569306
repres_vector	18	8	144	324	-2.49455215
word_categori	2	2	4	4	1.242212719
accuraci_precis	9	3	27	81	1.232378088
punctuat_mark	10	5	50	100	-0.626169716
test_set	15	7	105	225	-1.918908737
data_extract	19	5	95	361	0.646900045
comput_technolog	27	7	189	729	-0.221482389
word_represent	3	3	9	9	0.383664914
tabl_perform	32	7	224	1024	0.485778589
neg_exampl	30	4	120	900	3.202874198
featur_word	6	6	36	36	-2.191978499
rule_mine	15	6	90	225	-0.918908737
test_test	33	4	132	1089	3.627230785
us_porter	6	4	24	36	-0.191978499
content_document	3	3	9	9	0.383664914
word_gener	7	5	35	49	-1.050526303
document_model	9	3	27	81	1.232378088
gener_word	12	7	84	144	-2.343265324
featur_valu	3	3	9	9	0.383664914
highest_accuraci	27	5	135	729	1.778517611
mine_method	10	4	40	100	0.373830284
develop_model	24	4	96	576	2.354161024
lexic_databas	7	4	28	49	-0.050526303
regress_model	14	4	56	196	0.939639067

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
tweet_user	25	5	125	625	1.495613219
class_class	11	6	66	121	-1.48471752
classif_cluster	4	3	12	16	0.52511711
featur_text	14	8	112	196	-3.060360933
stem_stop	16	6	96	256	-0.777456542
process_system	15	6	90	225	-0.918908737
process_extract	8	8	64	64	-3.909074107
develop_system	14	6	84	196	-1.060360933
implement_us	19	12	228	361	-6.353099955
request_enhanc	7	7	49	49	-3.050526303
dataset_contain	11	10	110	121	-5.48471752
extract_word	15	11	165	225	-5.918908737
model_featur	19	8	152	361	-2.353099955
comput_vision	15	5	75	225	0.081091263
us_classifi	35	11	385	1225	-3.089864824
train_exampl	11	5	55	121	-0.48471752
evalu_system	7	6	42	49	-2.050526303
word_contain	6	6	36	36	-2.191978499
method_appli	16	7	112	256	-1.777456542
extract_method	20	6	120	400	-0.211647759
token_token	10	7	70	100	-2.626169716
repres_text	17	7	119	289	-1.636004346
retriev_text	3	3	9	9	0.383664914
discuss_stat	7	7	49	49	-3.050526303
enhanc_download	7	7	49	49	-3.050526303
public_stat	7	7	49	49	-3.050526303
view_public	7	7	49	49	-3.050526303
word_dictionari	7	4	28	49	-0.050526303
cluster_number	26	4	104	676	2.637065415
word_repres	4	4	16	16	-0.47488289
correl_coeffici	6	4	24	36	-0.191978499
statist_machin	12	3	36	144	1.656734676
porter_algorithm	11	5	55	121	-0.48471752
twitter_data	18	9	162	324	-3.49455215
mine_algorithm	12	5	60	144	-0.343265324
extract_document	4	4	16	16	-0.47488289
sentenc_text	9	9	81	81	-4.767621912
semant_relationship	2	2	4	4	1.242212719

<b>Theme</b>	<b>2017 Tot</b>	<b>2017 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
techniqu_text	21	6	126	441	-0.070195563
make_process	21	7	147	441	-1.070195563
human_resourc	28	4	112	784	2.919969807
qualiti_cluster	4	2	8	16	1.52511711
relev_featur	8	7	56	64	-2.909074107
manual_label	1	1	1	1	2.100760523
represent_model	13	5	65	169	-0.201813129
word_consid	5	4	20	25	-0.333430694
publiccli_avail	11	5	55	121	-0.48471752
automat_index	1	1	1	1	2.100760523
springer_verlag	12	8	96	144	-3.343265324
distribut_word	6	5	30	36	-1.191978499
keyword_text	5	5	25	25	-1.333430694
word_similar	2	2	4	4	1.242212719
root_stem	2	2	4	4	1.242212719
measur_accuraci	14	4	56	196	0.939639067
cluster_approach	4	4	16	16	-0.47488289
classif_approach	9	6	54	81	-1.767621912
interest_includ	4	2	8	16	1.52511711
inform_document	3	3	9	9	0.383664914
mine_inform	6	5	30	36	-1.191978499
document_index	6	4	24	36	-0.191978499
featur_document	14	8	112	196	-3.060360933
model_repres	13	6	78	169	-1.201813129
neg_word	4	2	8	16	1.52511711
sequenc_word	16	14	224	256	-8.777456542
perform_model	12	7	84	144	-2.343265324
sens_disambigu	11	6	66	121	-1.48471752
data_base	11	10	110	121	-5.48471752
model_select	8	4	32	64	0.090925893
search_space	17	5	85	289	0.363995654
tweet_tweet	4	3	12	16	0.52511711
predict_stock	46	3	138	2116	6.466109329
classifi_base	13	11	143	169	-6.201813129
select_text	9	8	72	81	-3.767621912
bay_algorithm	20	7	140	400	-1.211647759
represent_text	5	4	20	25	-0.333430694
resourc_evalu	12	6	72	144	-1.343265324

<b>Theme</b>	<b>2017 Tot</b>	<b>2017 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
dimension_space	11	5	55	121	-0.48471752
main_idea	15	9	135	225	-3.918908737
tree_structur	10	3	30	100	1.373830284
algorithm_cluster	4	4	16	16	-0.47488289
word_stop	4	4	16	16	-0.47488289
measur_measur	18	4	72	324	1.50544785
extract_sentenc	5	3	15	25	0.666569306
problem_solv	20	4	80	400	1.788352241
word_corpu	3	3	9	9	0.383664914
word_found	7	5	35	49	-1.050526303
base_search	5	3	15	25	0.666569306
data_store	8	5	40	64	-0.909074107
neg_neutral	32	6	192	1024	1.485778589
issu_march	12	4	48	144	0.656734676
search_algorithm	23	3	69	529	3.212708828
recal_valu	3	3	9	9	0.383664914
techniqu_base	11	5	55	121	-0.48471752
data_preprocess	17	9	153	289	-3.636004346
method_perform	23	8	184	529	-1.787291172
obtain_us	18	10	180	324	-4.49455215
statist_model	9	7	63	81	-2.767621912
accuraci_rate	13	5	65	169	-0.201813129
textual_inform	9	6	54	81	-1.767621912
cluster_data	5	4	20	25	-0.333430694
test_collect	2	2	4	4	1.242212719
semant_inform	4	3	12	16	0.52511711
assist_professor	5	4	20	25	-0.333430694
weight_word	9	4	36	81	0.232378088
bayesian_classifi	21	7	147	441	-1.070195563
given_text	2	2	4	4	1.242212719
word_filter	23	5	115	529	1.212708828
content_word	2	2	4	4	1.242212719
execut_time	12	4	48	144	0.656734676
highest_score	9	6	54	81	-1.767621912
repres_number	6	5	30	36	-1.191978499
analyz_data	23	4	92	529	2.212708828
model_gener	11	7	77	121	-2.48471752
repres_word	4	4	16	16	-0.47488289

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
languag_word	6	6	36	36	-2.191978499
topic_word	15	5	75	225	0.081091263
represent_word	3	2	6	9	1.383664914
tweet_us	14	5	70	196	-0.060360933
base_algorithm	9	7	63	81	-2.767621912
model_paramet	9	3	27	81	1.232378088
document_sentenc	1	1	1	1	2.100760523
content_text	12	10	120	144	-5.343265324
method_automat	16	8	128	256	-2.777456542
user_user	16	4	64	256	1.222543458
further_process	13	6	78	169	-1.201813129
system_implement	3	3	9	9	0.383664914
process_perform	13	6	78	169	-1.201813129
springer_berlin	17	5	85	289	0.363995654
accuraci_us	25	8	200	625	-1.504386781
technolog_comput	4	2	8	16	1.52511711
volum_page	10	4	40	100	0.373830284
featur_gener	4	4	16	16	-0.47488289
perform_measur	4	2	8	16	1.52511711
base_analysi	8	5	40	64	-0.909074107
amount_inform	8	4	32	64	0.090925893
document_level	5	4	20	25	-0.333430694
input_document	6	3	18	36	0.808021501
sentenc_base	3	3	9	9	0.383664914
mine_applic	5	5	25	25	-1.333430694
valu_term	16	6	96	256	-0.777456542
word_cloud	9	4	36	81	0.232378088
root_form	2	2	4	4	1.242212719
improv_qualiti	24	8	192	576	-1.645838976
societi_inform	4	4	16	16	-0.47488289
us_algorithm	11	9	99	121	-4.48471752
model_develop	23	6	138	529	0.212708828
previou_studi	18	5	90	324	0.50544785
posit_word	4	4	16	16	-0.47488289
text_contain	15	9	135	225	-3.918908737
detect_system	15	7	105	225	-1.918908737
charact_recognit	28	3	84	784	3.919969807
model_test	25	6	150	625	0.495613219

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
frequent_itemset	5	1	5	25	2.666569306
measur_perform	7	4	28	49	-0.050526303
document_calcul	2	2	4	4	1.242212719
gibb_sampl	14	2	28	196	2.939639067
solut_problem	13	4	52	169	0.798186871
avail_onlin	13	6	78	169	-1.201813129
weight_assign	17	5	85	289	0.363995654
model_topic	8	3	24	64	1.090925893
measur_text	7	5	35	49	-1.050526303
help_user	8	5	40	64	-0.909074107
cluster_perform	6	5	30	36	-1.191978499
rank_document	1	1	1	1	2.100760523
train_sampl	16	5	80	256	0.222543458
perform_experi	18	8	144	324	-2.49455215
previou_step	10	6	60	100	-1.626169716
step_process	13	10	130	169	-5.201813129
time_complex	6	3	18	36	0.808021501
number_text	14	4	56	196	0.939639067
us_techniqu	18	5	90	324	0.50544785
find_similar	1	1	1	1	2.100760523
correctli_classifi	11	5	55	121	-0.48471752
word_process	15	8	120	225	-2.918908737
languag_arab	16	6	96	256	-0.777456542
type_data	23	5	115	529	1.212708828
data_avail	12	6	72	144	-1.343265324
mine_data	15	9	135	225	-3.918908737
number_user	4	2	8	16	1.52511711
extract_system	5	3	15	25	0.666569306
dimension_vector	1	1	1	1	2.100760523
learn_text	8	6	48	64	-1.909074107
techniqu_appli	14	6	84	196	-1.060360933
semant_mean	5	4	20	25	-0.333430694
similar_valu	6	5	30	36	-1.191978499
charact_word	3	3	9	9	0.383664914
cluster_centroid	28	5	140	784	1.919969807
function_word	19	4	76	361	1.646900045
user_search	4	4	16	16	-0.47488289
word_number	11	11	121	121	-6.48471752

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
order_reduc	7	4	28	49	-0.050526303
degre_comput	7	5	35	49	-1.050526303
dimension_data	7	4	28	49	-0.050526303
exist_method	6	4	24	36	-0.191978499
extract_data	8	6	48	64	-1.909074107
vector_word	2	2	4	4	1.242212719
knowledg_engin	8	6	48	64	-1.909074107
scienc_depart	13	3	39	169	1.798186871
string_match	3	2	6	9	1.383664914
main_problem	14	2	28	196	2.939639067
model_classifi	21	7	147	441	-1.070195563
measur_us	11	7	77	121	-2.48471752
origin_text	4	4	16	16	-0.47488289
statist_inform	6	3	18	36	0.808021501
measur_evalu	6	3	18	36	0.808021501
find_relev	4	2	8	16	1.52511711
arab_corpu	15	3	45	225	2.081091263
system_architectur	10	5	50	100	-0.626169716
assign_weight	10	8	80	100	-3.626169716
mean_text	16	8	128	256	-2.777456542
addit_featur	9	7	63	81	-2.767621912
topic_base	5	3	15	25	0.666569306
weight_averag	10	4	40	100	0.373830284
word_token	2	2	4	4	1.242212719
group_group	8	4	32	64	0.090925893
process_model	7	3	21	49	0.949473697
score_score	9	5	45	81	-0.767621912
preprocess_text	8	8	64	64	-3.909074107
algorithm_document	6	4	24	36	-0.191978499
classifi_perform	6	5	30	36	-1.191978499
word_semant	1	1	1	1	2.100760523
analysi_document	2	2	4	4	1.242212719
us_term	8	6	48	64	-1.909074107
combin_word	4	3	12	16	0.52511711
network_base	3	2	6	9	1.383664914
time_term	2	2	4	4	1.242212719
gener_topic	4	3	12	16	0.52511711
improv_effici	10	7	70	100	-2.626169716

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
data_contain	13	8	104	169	-3.201813129
free_text	4	2	8	16	1.52511711
linear_combin	4	3	12	16	0.52511711
system_extract	8	6	48	64	-1.909074107
classifi_test	12	8	96	144	-3.343265324
tech_niqu	5	4	20	25	-0.333430694
us_train	12	9	108	144	-4.343265324
word_common	8	8	64	64	-3.909074107
count_number	9	7	63	81	-2.767621912
evalu_model	9	4	36	81	0.232378088
experi_perform	11	7	77	121	-2.48471752
classif_base	12	8	96	144	-3.343265324
featur_train	7	5	35	49	-1.050526303
mine_us	3	3	9	9	0.383664914
term_text	8	5	40	64	-0.909074107
model_method	11	8	88	121	-3.48471752
provid_inform	7	6	42	49	-2.050526303
start_point	11	4	44	121	0.51528248
process_method	15	11	165	225	-5.918908737
textual_document	1	1	1	1	2.100760523
applic_text	9	5	45	81	-0.767621912
corpu_document	4	3	12	16	0.52511711
gener_model	5	3	15	25	0.666569306
group_similar	9	6	54	81	-1.767621912
lexicon_base	15	6	90	225	-0.918908737
valu_document	10	5	50	100	-0.626169716
data_test	13	7	91	169	-2.201813129
word_select	6	6	36	36	-2.191978499
base_topic	5	4	20	25	-0.333430694
human_factor	7	3	21	49	0.949473697
predefin_categorii	4	4	16	16	-0.47488289
classifi_categorii	7	7	49	49	-3.050526303
document_total	10	8	80	100	-3.626169716
sentenc_length	6	6	36	36	-2.191978499
word_approach	6	3	18	36	0.808021501
cluster_qualiti	4	3	12	16	0.52511711
collect_text	8	7	56	64	-2.909074107
maximum_likelihood	3	3	9	9	0.383664914

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
measur_valu	13	5	65	169	-0.201813129
us_support	8	8	64	64	-3.909074107
word_includ	4	3	12	16	0.52511711
document_consid	2	2	4	4	1.242212719
empir_studi	12	6	72	144	-1.343265324
system_test	10	4	40	100	0.373830284
comput_similar	1	1	1	1	2.100760523
corpu_text	13	7	91	169	-2.201813129
morgan_kaufmann	5	5	25	25	-1.333430694
stem_us	5	3	15	25	0.666569306
averag_number	4	4	16	16	-0.47488289
frequenc_count	2	2	4	4	1.242212719
includ_text	7	7	49	49	-3.050526303
techniqu_extract	7	3	21	49	0.949473697
develop_method	17	6	102	289	-0.636004346
given_word	6	5	30	36	-1.191978499
process_reduc	10	9	90	100	-4.626169716
train_us	14	5	70	196	-0.060360933
us_simpl	12	6	72	144	-1.343265324
word_context	4	4	16	16	-0.47488289
wordnet_lexic	5	3	15	25	0.666569306
emot_categor	17	4	68	289	1.363995654
represent_us	13	3	39	169	1.798186871
time_word	2	2	4	4	1.242212719
word_exampl	8	7	56	64	-2.909074107
issu_issn	2	2	4	4	1.242212719
posit_fals	3	3	9	9	0.383664914
user_tweet	12	6	72	144	-1.343265324
weight_approach	4	4	16	16	-0.47488289
index_document	1	1	1	1	2.100760523
perform_classifi	6	5	30	36	-1.191978499
address_problem	9	5	45	81	-0.767621912
document_rank	1	1	1	1	2.100760523
pattern_analysi	12	7	84	144	-2.343265324
us_vector	11	4	44	121	0.51528248
princip_compon	14	3	42	196	1.939639067
term_number	10	4	40	100	0.373830284
mine_task	5	4	20	25	-0.333430694

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
perform_cluster	11	6	66	121	-1.48471752
take_advantag	7	7	49	49	-3.050526303
algorithm_stem	12	6	72	144	-1.343265324
white_space	17	5	85	289	0.363995654
featur_us	7	5	35	49	-1.050526303
graph_node	8	2	16	64	2.090925893
weight_calcul	22	2	44	484	4.071256632
spam_detect	1	1	1	1	2.100760523
store_databas	10	7	70	100	-2.626169716
mixtur_model	2	1	2	4	2.242212719
method_evalu	4	3	12	16	0.52511711
inform_avail	1	1	1	1	2.100760523
precis_valu	2	2	4	4	1.242212719
suffix_strip	7	4	28	49	-0.050526303
sourc_inform	6	5	30	36	-1.191978499
featur_repres	12	6	72	144	-1.343265324
classifi_featur	8	6	48	64	-1.909074107
process_word	6	4	24	36	-0.191978499
algorithm_develop	10	7	70	100	-2.626169716
main_reason	5	5	25	25	-1.333430694
base_stem	4	3	12	16	0.52511711
comput_approach	9	3	27	81	1.232378088
given_queri	4	2	8	16	1.52511711
perform_algorithm	11	3	33	121	1.51528248
stopword_remov	3	3	9	9	0.383664914
inform_word	3	2	6	9	1.383664914
model_word	1	1	1	1	2.100760523
optic_charact	20	3	60	400	2.788352241
scienc_applic	18	4	72	324	1.50544785
learn_object	9	3	27	81	1.232378088
automat_evalu	10	4	40	100	0.373830284
vector_featur	2	2	4	4	1.242212719
model_compar	9	6	54	81	-1.767621912
term_select	11	6	66	121	-1.48471752
us_gram	13	6	78	169	-1.201813129
user_defin	6	3	18	36	0.808021501
base_user	7	4	28	49	-0.050526303
index_process	1	1	1	1	2.100760523

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
similar_mean	4	4	16	16	-0.47488289
gram_base	8	4	32	64	0.090925893
sourc_data	8	4	32	64	0.090925893
text_messag	2	2	4	4	1.242212719
technolog_volum	4	2	8	16	1.52511711
analysi_social	8	5	40	64	-0.909074107
base_techniqu	9	7	63	81	-2.767621912
dataset_train	8	7	56	64	-2.909074107
select_algorithm	9	3	27	81	1.232378088
token_stop	6	5	30	36	-1.191978499
us_wordnet	3	1	3	9	2.383664914
valu_pair	11	5	55	121	-0.48471752
base_represent	5	5	25	25	-1.333430694
facebook_twitter	13	3	39	169	1.798186871
us_wikipedia	2	2	4	4	1.242212719
class_number	7	6	42	49	-2.050526303
dimension_featur	13	7	91	169	-2.201813129
extract_techniqu	1	1	1	1	2.100760523
model_automat	9	5	45	81	-0.767621912
european_languag	3	3	9	9	0.383664914
text_repres	4	4	16	16	-0.47488289
comput_network	9	6	54	81	-1.767621912
method_combin	12	9	108	144	-4.343265324
word_match	1	1	1	1	2.100760523
algorithm_find	9	7	63	81	-2.767621912
data_consist	6	6	36	36	-2.191978499
featur_includ	4	4	16	16	-0.47488289
form_stem	7	5	35	49	-1.050526303
token_process	9	7	63	81	-2.767621912
weight_vector	3	3	9	9	0.383664914
consist_document	10	5	50	100	-0.626169716
sentenc_structur	11	6	66	121	-1.48471752
system_consist	9	4	36	81	0.232378088
test_model	5	3	15	25	0.666569306
analysi_machin	15	10	150	225	-4.918908737
frequenc_weight	13	7	91	169	-2.201813129
measur_calcul	9	6	54	81	-1.767621912
workshop_comput	8	5	40	64	-0.909074107

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
text_dataset	18	5	90	324	0.50544785
us_equat	6	3	18	36	0.808021501
collect_corpu	12	6	72	144	-1.343265324
lexic_featur	6	3	18	36	0.808021501
mean_valu	6	4	24	36	-0.191978499
model_extract	16	4	64	256	1.222543458
perform_analysi	5	3	15	25	0.666569306
corpu_word	8	6	48	64	-1.909074107
model_system	11	3	33	121	1.51528248
us_rule	14	2	28	196	2.939639067
concept_document	1	1	1	1	2.100760523
categori_categori	1	1	1	1	2.100760523
length_document	1	1	1	1	2.100760523
north_chapter	3	2	6	9	1.383664914
overal_perform	4	3	12	16	0.52511711
document_length	2	2	4	4	1.242212719
cluster_accuraci	9	3	27	81	1.232378088
good_perform	14	7	98	196	-2.060360933
list_stop	7	5	35	49	-1.050526303
index_html	8	5	40	64	-0.909074107
algorithm_implement	10	6	60	100	-1.626169716
convert_text	4	3	12	16	0.52511711
word_elimin	6	2	12	36	1.808021501
improv_text	9	5	45	81	-0.767621912
collect_tweet	5	5	25	25	-1.333430694
count_word	6	6	36	36	-2.191978499
extract_knowledg	9	7	63	81	-2.767621912
statist_signific	8	6	48	64	-1.909074107
emot_text	3	3	9	9	0.383664914
knowledg_extract	14	8	112	196	-3.060360933
term_queri	5	2	10	25	1.666569306
semant_evalu	5	5	25	25	-1.333430694
method_extract	5	4	20	25	-0.333430694
overal_accuraci	2	2	4	4	1.242212719
repres_term	1	1	1	1	2.100760523
approach_automat	4	4	16	16	-0.47488289
automat_classifi	7	5	35	49	-1.050526303
method_describ	10	4	40	100	0.373830284

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
languag_specif	6	4	24	36	-0.191978499
node_repres	4	3	12	16	0.52511711
topic_text	2	2	4	4	1.242212719
difficult_task	4	4	16	16	-0.47488289
access_inform	10	4	40	100	0.373830284
depart_inform	8	6	48	64	-1.909074107
naïv_bayesian	9	4	36	81	0.232378088
queri_word	7	3	21	49	0.949473697
caus_effect	9	3	27	81	1.232378088
comput_base	8	7	56	64	-2.909074107
fine_grain	5	5	25	25	-1.333430694
measur_defin	5	4	20	25	-0.333430694
text_written	10	6	60	100	-1.626169716
distribut_document	11	5	55	121	-0.48471752
lower_case	13	9	117	169	-4.201813129
recognit_system	7	3	21	49	0.949473697
semi_automat	6	3	18	36	0.808021501
consist_word	5	3	15	25	0.666569306
context_base	10	4	40	100	0.373830284
dataset_us	9	6	54	81	-1.767621912
process_phase	9	4	36	81	0.232378088
us_corpu	20	4	80	400	1.788352241
word_distribut	3	2	6	9	1.383664914
term_occurr	8	6	48	64	-1.909074107
method_cluster	4	4	16	16	-0.47488289
token_text	4	4	16	16	-0.47488289
compon_analysi	11	4	44	121	0.51528248
gener_term	3	3	9	9	0.383664914
semant_structur	4	4	16	16	-0.47488289
stem_reduc	5	5	25	25	-1.333430694
term_accuraci	7	4	28	49	-0.050526303
cluster_word	2	2	4	4	1.242212719
document_given	2	2	4	4	1.242212719
system_text	2	2	4	4	1.242212719
text_understand	6	2	12	36	1.808021501
us_mean	5	3	15	25	0.666569306
document_extract	5	4	20	25	-0.333430694
frequenc_calcul	4	4	16	16	-0.47488289

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
document_group	3	3	9	9	0.383664914
domain_knowledg	2	2	4	4	1.242212719
gener_content	15	4	60	225	1.081091263
learn_data	6	6	36	36	-2.191978499
retriev_base	4	4	16	16	-0.47488289
algorithm_mean	10	5	50	100	-0.626169716
approach_perform	6	3	18	36	0.808021501
model_approach	9	7	63	81	-2.767621912
network_us	14	6	84	196	-1.060360933
gram_word	3	3	9	9	0.383664914
model_combin	8	6	48	64	-1.909074107
stemmer_algorithm	7	4	28	49	-0.050526303
valu_paramet	14	5	70	196	-0.060360933
valu_word	13	10	130	169	-5.201813129
accuraci_tabl	7	6	42	49	-2.050526303
assign_word	4	4	16	16	-0.47488289
base_measur	4	2	8	16	1.52511711
process_approach	19	4	76	361	1.646900045
us_latent	3	2	6	9	1.383664914
gener_algorithm	2	2	4	4	1.242212719
preprocess_techniqu	16	7	112	256	-1.777456542
rule_rule	14	4	56	196	0.939639067
level_text	5	2	10	25	1.666569306
process_base	13	5	65	169	-0.201813129
relev_queri	3	2	6	9	1.383664914
document_test	5	5	25	25	-1.333430694
document_accord	4	4	16	16	-0.47488289
order_evalu	5	4	20	25	-0.333430694
base_learn	10	5	50	100	-0.626169716
algorithm_suffix	4	3	12	16	0.52511711
approach_featur	3	3	9	9	0.383664914
time_process	13	5	65	169	-0.201813129
equal_number	5	3	15	25	0.666569306
improv_cluster	9	3	27	81	1.232378088
classif_document	6	4	24	36	-0.191978499
gener_process	7	5	35	49	-1.050526303
jordan_latent	4	4	16	16	-0.47488289
label_train	2	2	4	4	1.242212719

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
model_describ	7	4	28	49	-0.050526303
us_topic	3	2	6	9	1.383664914
base_machin	12	11	132	144	-6.343265324
frequenc_number	6	5	30	36	-1.191978499
process_includ	6	5	30	36	-1.191978499
word_assign	2	2	4	4	1.242212719
automat_classif	16	10	160	256	-4.777456542
calcul_term	7	7	49	49	-3.050526303
signific_improv	7	5	35	49	-1.050526303
stage_process	8	4	32	64	0.090925893
valu_indic	6	3	18	36	0.808021501
analysi_tool	6	4	24	36	-0.191978499
gener_method	3	3	9	9	0.383664914
vector_us	5	3	15	25	0.666569306
origin_data	11	4	44	121	0.51528248
comput_secur	19	3	57	361	2.646900045
engin_depart	8	5	40	64	-0.909074107
frequent_item	1	1	1	1	2.100760523
http_github	9	7	63	81	-2.767621912
increas_perform	12	6	72	144	-1.343265324
occurr_document	5	4	20	25	-0.333430694
similar_cluster	5	4	20	25	-0.333430694
studi_featur	9	6	54	81	-1.767621912
token_stem	1	1	1	1	2.100760523
us_weight	8	7	56	64	-2.909074107
word_reduc	4	4	16	16	-0.47488289
base_number	9	6	54	81	-1.767621912
data_includ	7	5	35	49	-1.050526303
dataset_collect	4	2	8	16	1.52511711
find_word	4	4	16	16	-0.47488289
learn_train	1	1	1	1	2.100760523
reduc_time	10	6	60	100	-1.626169716
weight_document	2	2	4	4	1.242212719
word_collect	7	5	35	49	-1.050526303
corpu_train	8	4	32	64	0.090925893
learn_system	14	6	84	196	-1.060360933
accuraci_classif	5	4	20	25	-0.333430694
algorithm_compar	6	2	12	36	1.808021501

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
base_form	2	2	4	4	1.242212719
contain_text	4	4	16	16	-0.47488289
dataset_experi	8	7	56	64	-2.909074107
pair_word	1	1	1	1	2.100760523
approach_combin	4	2	8	16	1.52511711
includ_word	6	5	30	36	-1.191978499
problem_text	3	3	9	9	0.383664914
reduct_techniqu	7	4	28	49	-0.050526303
remov_punctuat	12	6	72	144	-1.343265324
score_system	2	2	4	4	1.242212719
select_document	3	2	6	9	1.383664914
type_featur	3	3	9	9	0.383664914
us_model	15	6	90	225	-0.918908737
mobil_phone	6	4	24	36	-0.191978499
select_relev	2	2	4	4	1.242212719
system_data	6	5	30	36	-1.191978499
gener_us	9	6	54	81	-1.767621912
order_extract	5	5	25	25	-1.333430694
perfor_manc	4	4	16	16	-0.47488289
recal_recal	1	1	1	1	2.100760523
rule_extract	13	1	13	169	3.798186871
structur_text	7	6	42	49	-2.050526303
word_train	6	5	30	36	-1.191978499
combin_model	18	3	54	324	2.50544785
data_classif	15	7	105	225	-1.918908737
time_featur	4	4	16	16	-0.47488289
gener_categor	3	2	6	9	1.383664914
model_term	5	3	15	25	0.666569306
probabilist_latent	4	2	8	16	1.52511711
search_word	6	4	24	36	-0.191978499
order_word	6	4	24	36	-0.191978499
predict_class	10	6	60	100	-1.626169716
base_applic	10	4	40	100	0.373830284
bay_classif	6	4	24	36	-0.191978499
binari_classif	2	2	4	4	1.242212719
learn_inform	9	3	27	81	1.232378088
note_comput	5	5	25	25	-1.333430694
number_class	3	3	9	9	0.383664914

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
perform_inform	3	3	9	9	0.383664914
techniqu_find	4	2	8	16	1.52511711
main_step	8	2	16	64	2.090925893
make_difficult	5	4	20	25	-0.333430694
servic_servic	6	4	24	36	-0.191978499
method_classif	10	5	50	100	-0.626169716
model_latent	3	2	6	9	1.383664914
model_process	12	5	60	144	-0.343265324
statist_measur	2	2	4	4	1.242212719
stem_method	4	3	12	16	0.52511711
topic_gener	3	2	6	9	1.383664914
tradit_approach	12	5	60	144	-0.343265324
data_format	4	4	16	16	-0.47488289
featur_term	9	3	27	81	1.232378088
posit_class	4	2	8	16	1.52511711
score_function	2	2	4	4	1.242212719
term_precis	3	3	9	9	0.383664914
total_word	4	4	16	16	-0.47488289
divid_number	11	5	55	121	-0.48471752
present_model	19	5	95	361	0.646900045
word_group	1	1	1	1	2.100760523
approach_develop	13	4	52	169	0.798186871
compar_word	2	2	4	4	1.242212719
find_optim	10	4	40	100	0.373830284
further_improv	1	1	1	1	2.100760523
probabl_word	2	2	4	4	1.242212719
proce_ing	3	3	9	9	0.383664914
data_form	14	5	70	196	-0.060360933
neg_sentiment	13	6	78	169	-1.201813129
servic_orient	7	4	28	49	-0.050526303
cluster_gener	1	1	1	1	2.100760523
train_phase	6	6	36	36	-2.191978499
cluster_mean	3	2	6	9	1.383664914
document_set	10	2	20	100	2.373830284
file_file	11	5	55	121	-0.48471752
inform_sourc	2	2	4	4	1.242212719
neighbor_algorithm	4	4	16	16	-0.47488289
preprocess_document	3	3	9	9	0.383664914

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
structur_inform	4	3	12	16	0.52511711
us_approach	9	5	45	81	-0.767621912
dataset_evalu	6	4	24	36	-0.191978499
mine_pattern	3	3	9	9	0.383664914
model_user	12	5	60	144	-0.343265324
model_vector	3	3	9	9	0.383664914
size_data	9	7	63	81	-2.767621912
struc_ture	1	1	1	1	2.100760523
calcul_number	6	4	24	36	-0.191978499
number_charact	5	4	20	25	-0.333430694
system_support	7	4	28	49	-0.050526303
us_combin	10	7	70	100	-2.626169716
user_interact	11	5	55	121	-0.48471752
data_represent	8	4	32	64	0.090925893
experi_evalu	10	7	70	100	-2.626169716
gener_purpos	5	3	15	25	0.666569306
linguist_human	5	3	15	25	0.666569306
tech_nologi	7	3	21	49	0.949473697
word_frequent	4	4	16	16	-0.47488289
automat_process	4	3	12	16	0.52511711
remov_prefix	5	4	20	25	-0.333430694
select_word	6	6	36	36	-2.191978499
us_naïv	19	3	57	361	2.646900045
correct_word	2	2	4	4	1.242212719
perform_poorli	5	3	15	25	0.666569306
type_type	2	2	4	4	1.242212719
retriev_perform	3	2	6	9	1.383664914
effect_featur	4	2	8	16	1.52511711
data_gather	7	3	21	49	0.949473697
inform_filter	2	2	4	4	1.242212719
overcom_problem	9	8	72	81	-3.767621912
method_arab	3	3	9	9	0.383664914
reduc_size	7	6	42	49	-2.050526303
stem_techniqu	3	3	9	9	0.383664914
us_document	5	5	25	25	-1.333430694
import_word	4	3	12	16	0.52511711
perform_featur	7	5	35	49	-1.050526303
approach_classifi	3	3	9	9	0.383664914

<b>Theme</b>	<b>2017 Tot</b>	<b>2017 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
perform_document	6	3	18	36	0.808021501
algorithm_data	9	7	63	81	-2.767621912
cluster_group	8	7	56	64	-2.909074107
estim_probabl	8	4	32	64	0.090925893
given_topic	2	2	4	4	1.242212719
model_implement	12	5	60	144	-0.343265324
order_achiev	7	5	35	49	-1.050526303
vector_model	6	3	18	36	0.808021501
inform_data	5	4	20	25	-0.333430694
total_document	6	4	24	36	-0.191978499
document_comput	2	2	4	4	1.242212719
algorithm_test	6	4	24	36	-0.191978499
fuzzi_set	1	1	1	1	2.100760523
system_process	8	4	32	64	0.090925893
term_semant	4	4	16	16	-0.47488289
token_part	4	4	16	16	-0.47488289
train_train	6	5	30	36	-1.191978499
tree_algorithm	9	3	27	81	1.232378088
detect_us	10	7	70	100	-2.626169716
help_identifi	12	8	96	144	-3.343265324
input_word	2	2	4	4	1.242212719
contain_number	1	1	1	1	2.100760523
group_document	2	2	4	4	1.242212719
approach_analyz	1	1	1	1	2.100760523
method_consid	10	7	70	100	-2.626169716
document_user	2	1	2	4	2.242212719
languag_base	3	3	9	9	0.383664914
commun_engin	6	6	36	36	-2.191978499
corpu_number	3	3	9	9	0.383664914
perform_term	1	1	1	1	2.100760523
collect_word	4	4	16	16	-0.47488289
detail_descript	4	3	12	16	0.52511711
inform_us	6	6	36	36	-2.191978499
tree_classifi	6	3	18	36	0.808021501
word_exist	4	4	16	16	-0.47488289
analysi_opinion	3	3	9	9	0.383664914
effect_us	8	5	40	64	-0.909074107
method_measur	1	1	1	1	2.100760523

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
paramet_valu	9	4	36	81	0.232378088
supervis_unsupervis	7	7	49	49	-3.050526303
text_consid	4	4	16	16	-0.47488289
averag_valu	8	2	16	64	2.090925893
bay_theorem	9	8	72	81	-3.767621912
evalu_classifi	5	3	15	25	0.666569306
pattern_gener	5	3	15	25	0.666569306
perform_improv	4	4	16	16	-0.47488289
preprocess_data	4	3	12	16	0.52511711
test_system	16	5	80	256	0.222543458
word_search	2	2	4	4	1.242212719
faculti_scienc	2	2	4	4	1.242212719
form_us	5	3	15	25	0.666569306
linguist_resourc	1	1	1	1	2.100760523
semant_network	2	2	4	4	1.242212719
variou_featur	5	5	25	25	-1.333430694
written_text	4	4	16	16	-0.47488289
catégori_word	4	3	12	16	0.52511711
context_awar	8	4	32	64	0.090925893
extract_tweet	3	3	9	9	0.383664914
order_logic	14	2	28	196	2.939639067
select_term	3	3	9	9	0.383664914
simpl_word	1	1	1	1	2.100760523
appear_frequent	6	4	24	36	-0.191978499
method_select	6	6	36	36	-2.191978499
modern_inform	5	2	10	25	1.666569306
term_gener	1	1	1	1	2.100760523
evalu_evalu	6	4	24	36	-0.191978499
method_improv	9	7	63	81	-2.767621912
model_defin	11	3	33	121	1.51528248
multinomi_distribut	2	1	2	4	2.242212719
size_train	5	5	25	25	-1.333430694
specif_topic	2	2	4	4	1.242212719
approach_cluster	3	3	9	9	0.383664914
describ_detail	2	2	4	4	1.242212719
document_thu	4	3	12	16	0.52511711
gram_model	5	2	10	25	1.666569306
train_time	7	4	28	49	-0.050526303

<b>Theme</b>	<b>2017 Tot</b>	<b>2017 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
convert_word	1	1	1	1	2.100760523
divid_total	5	3	15	25	0.666569306
improv_precis	3	3	9	9	0.383664914
document_order	2	2	4	4	1.242212719
gram_featur	1	1	1	1	2.100760523
main_featur	3	2	6	9	1.383664914
mine_machin	4	4	16	16	-0.47488289
repr_sent	1	1	1	1	2.100760523
test_evalu	6	4	24	36	-0.191978499
websit_http	13	4	52	169	0.798186871
calcul_frequenc	8	7	56	64	-2.909074107
comput_semant	2	2	4	4	1.242212719
subset_featur	11	3	33	121	1.51528248
system_arab	6	4	24	36	-0.191978499
algorithm_predict	11	6	66	121	-1.48471752
gener_data	9	3	27	81	1.232378088
mine_natur	8	8	64	64	-3.909074107
multi_label	7	5	35	49	-1.050526303
node_graph	2	2	4	4	1.242212719
word_test	6	2	12	36	1.808021501
design_model	16	6	96	256	-0.777456542
further_develop	7	1	7	49	2.949473697
model_construct	11	5	55	121	-0.48471752
sampl_data	16	7	112	256	-1.777456542
salton_bucklei	2	2	4	4	1.242212719
applic_develop	10	4	40	100	0.373830284
automat_document	1	1	1	1	2.100760523
document_avail	1	1	1	1	2.100760523
model_consid	6	3	18	36	0.808021501
stem_step	4	4	16	16	-0.47488289
arxiv_preprint	7	3	21	49	0.949473697
classifi_classif	6	6	36	36	-2.191978499
classifi_support	5	5	25	25	-1.333430694
mean_document	6	4	24	36	-0.191978499
method_comput	1	1	1	1	2.100760523
technolog_issn	4	4	16	16	-0.47488289
appear_time	1	1	1	1	2.100760523
auto_matic	6	4	24	36	-0.191978499

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
captur_semant	1	1	1	1	2.100760523
linguist_structur	2	2	4	4	1.242212719
perform_base	8	5	40	64	-0.909074107
word_refer	3	3	9	9	0.383664914
data_obtain	7	6	42	49	-2.050526303
describ_system	2	2	4	4	1.242212719
direct_graph	3	3	9	9	0.383664914
help_improv	7	5	35	49	-1.050526303
linear_model	3	2	6	9	1.383664914
model_provid	6	4	24	36	-0.191978499
multipl_word	1	1	1	1	2.100760523
probabl_document	3	2	6	9	1.383664914
topic_interest	1	1	1	1	2.100760523
word_total	4	4	16	16	-0.47488289
accuraci_obtain	4	2	8	16	1.52511711
class_classifi	6	6	36	36	-2.191978499
current_state	9	4	36	81	0.232378088
experi_experi	11	6	66	121	-1.48471752
mathemat_comput	5	4	20	25	-0.333430694
measur_cosin	4	3	12	16	0.52511711
messag_servic	16	3	48	256	2.222543458
similar_text	3	3	9	9	0.383664914
achiev_good	8	5	40	64	-0.909074107
algorithm_term	9	5	45	81	-0.767621912
method_model	10	5	50	100	-0.626169716
metric_evalu	12	6	72	144	-1.343265324
stemmer_arab	5	1	5	25	2.666569306
system_consid	8	5	40	64	-0.909074107
system_requir	12	4	48	144	0.656734676
tweet_collect	2	1	2	4	2.242212719
word_user	2	2	4	4	1.242212719
appli_cluster	4	4	16	16	-0.47488289
learn_task	3	3	9	9	0.383664914
document_organ	4	3	12	16	0.52511711
measur_comput	3	3	9	9	0.383664914
term_given	1	1	1	1	2.100760523
user_find	2	2	4	4	1.242212719
bay_model	1	1	1	1	2.100760523

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
consid_term	2	2	4	4	1.242212719
mcgraw_hill	5	4	20	25	-0.333430694
method_document	1	1	1	1	2.100760523
model_cluster	2	2	4	4	1.242212719
retriev_data	4	4	16	16	-0.47488289
search_inform	2	1	2	4	2.242212719
basic_idea	4	4	16	16	-0.47488289
blog_post	2	1	2	4	2.242212719
comput_survei	6	4	24	36	-0.191978499
deriv_word	2	2	4	4	1.242212719
main_contribut	4	4	16	16	-0.47488289
estim_paramet	7	3	21	49	0.949473697
form_cluster	6	4	24	36	-0.191978499
method_name	9	3	27	81	1.232378088
model_techniqu	5	5	25	25	-1.333430694
neural_inform	9	5	45	81	-0.767621912
binari_classifi	3	3	9	9	0.383664914
charact_token	5	2	10	25	1.666569306
latent_variabl	6	1	6	36	2.808021501
system_comput	9	3	27	81	1.232378088
task_automat	2	2	4	4	1.242212719
text_includ	6	4	24	36	-0.191978499
us_neural	5	5	25	25	-1.333430694
algorithm_describ	7	2	14	49	1.949473697
algorithm_method	5	4	20	25	-0.333430694
algorithm_requir	8	6	48	64	-1.909074107
applic_us	13	5	65	169	-0.201813129
calcul_score	2	2	4	4	1.242212719
featur_number	11	4	44	121	0.51528248
inform_base	8	4	32	64	0.090925893
method_achiev	13	6	78	169	-1.201813129
studi_focus	10	4	40	100	0.373830284
comput_program	6	4	24	36	-0.191978499
dataset_test	8	5	40	64	-0.909074107
identifi_emot	3	3	9	9	0.383664914
replac_word	2	1	2	4	2.242212719
statist_data	13	5	65	169	-0.201813129
automat_detect	12	5	60	144	-0.343265324

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
calcul_word	6	4	24	36	-0.191978499
commun_system	12	4	48	144	0.656734676
develop_tool	11	6	66	121	-1.48471752
featur_classif	5	4	20	25	-0.333430694
graphic_model	3	1	3	9	2.383664914
process_term	3	3	9	9	0.383664914
semant_resourc	2	2	4	4	1.242212719
text_analyt	6	4	24	36	-0.191978499
word_weight	4	4	16	16	-0.47488289
match_match	8	2	16	64	2.090925893
valu_obtain	4	4	16	16	-0.47488289
defin_term	1	1	1	1	2.100760523
us_maximum	2	2	4	4	1.242212719
cluster_comput	4	4	16	16	-0.47488289
space_word	4	4	16	16	-0.47488289
token_document	2	2	4	4	1.242212719
model_dataset	3	3	9	9	0.383664914
novel_approach	1	1	1	1	2.100760523
vocabulari_word	2	2	4	4	1.242212719
frequenc_measur	3	3	9	9	0.383664914
ground_truth	1	1	1	1	2.100760523
levelRepresent	1	1	1	1	2.100760523
process_select	5	5	25	25	-1.333430694
algorithm_automat	6	4	24	36	-0.191978499
index_word	1	1	1	1	2.100760523
proc_sigir	1	1	1	1	2.100760523
algorithm_achiev	4	3	12	16	0.52511711
appli_algorithm	5	5	25	25	-1.333430694
averag_length	2	2	4	4	1.242212719
evalu_base	6	4	24	36	-0.191978499
form_term	5	3	15	25	0.666569306
machin_intellig	8	7	56	64	-2.909074107
mine_base	3	3	9	9	0.383664914
professor_comput	1	1	1	1	2.100760523
techniqu_reduc	8	8	64	64	-3.909074107
us_tool	6	4	24	36	-0.191978499
vector_term	10	4	40	100	0.373830284
evalu_dataset	4	4	16	16	-0.47488289

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
extract_semant	2	2	4	4	1.242212719
process_machin	5	5	25	25	-1.333430694
adject_noun	8	4	32	64	0.090925893
collect_process	5	4	20	25	-0.333430694
gradient_descent	5	2	10	25	1.666569306
inform_structur	5	3	15	25	0.666569306
languag_world	7	4	28	49	-0.050526303
learn_us	8	4	32	64	0.090925893
model_make	9	4	36	81	0.232378088
text_form	7	5	35	49	-1.050526303
analysi_natur	3	3	9	9	0.383664914
complex_system	14	5	70	196	-0.060360933
levenshtein_distanc	4	3	12	16	0.52511711
million_peopl	6	4	24	36	-0.191978499
model_structur	4	3	12	16	0.52511711
remain_word	1	1	1	1	2.100760523
search_data	2	2	4	4	1.242212719
approach_solv	1	1	1	1	2.100760523
document_convert	4	3	12	16	0.52511711
extern_knowledg	2	1	2	4	2.242212719
appli_document	3	3	9	9	0.383664914
assign_categori	3	3	9	9	0.383664914
distribut_data	3	3	9	9	0.383664914
network_commun	3	3	9	9	0.383664914
tree_base	6	5	30	36	-1.191978499
larger_number	3	3	9	9	0.383664914
novel_method	1	1	1	1	2.100760523
preprint_arxiv	6	2	12	36	1.808021501
represent_vector	2	2	4	4	1.242212719
us_keyword	1	1	1	1	2.100760523
data_classifi	3	3	9	9	0.383664914
distribut_term	3	3	9	9	0.383664914
group_base	5	3	15	25	0.666569306
relev_user	1	1	1	1	2.100760523
summar_task	2	1	2	4	2.242212719
type_word	6	6	36	36	-2.191978499
vector_weight	4	3	12	16	0.52511711
weight_weight	3	3	9	9	0.383664914

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
approach_method	9	3	27	81	1.232378088
column_repres	6	4	24	36	-0.191978499
dept_comput	1	1	1	1	2.100760523
keyword_search	1	1	1	1	2.100760523
measur_word	4	4	16	16	-0.47488289
model_analysi	5	3	15	25	0.666569306
perform_comparison	3	3	9	9	0.383664914
user_input	5	4	20	25	-0.333430694
approach_gener	8	5	40	64	-0.909074107
base_keyword	3	1	3	9	2.383664914
base_multi	4	3	12	16	0.52511711
base_score	2	2	4	4	1.242212719
base_valu	8	6	48	64	-1.909074107
data_size	3	3	9	9	0.383664914
data_social	5	4	20	25	-0.333430694
perform_variou	7	5	35	49	-1.050526303
reduc_comput	4	4	16	16	-0.47488289
studi_us	7	5	35	49	-1.050526303
us_measur	4	2	8	16	1.52511711
word_input	5	5	25	25	-1.333430694
workshop_text	2	2	4	4	1.242212719
accuraci_score	2	2	4	4	1.242212719
approach_identifi	7	4	28	49	-0.050526303
base_queri	2	2	4	4	1.242212719
determin_word	4	3	12	16	0.52511711
maximum_valu	6	3	18	36	0.808021501
model_creat	11	5	55	121	-0.48471752
take_time	5	3	15	25	0.666569306
us_number	6	5	30	36	-1.191978499
user_us	7	5	35	49	-1.050526303
averag_time	3	3	9	9	0.383664914
classifi_predict	10	6	60	100	-1.626169716
knowledg_inform	2	2	4	4	1.242212719
perform_stem	2	2	4	4	1.242212719
valu_given	5	5	25	25	-1.333430694
word_replac	4	4	16	16	-0.47488289
document_appear	1	1	1	1	2.100760523
kullback_leibler	2	1	2	4	2.242212719

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
number_distinct	1	1	1	1	2.100760523
learn_autom	1	1	1	1	2.100760523
requir_number	4	4	16	16	-0.47488289
becom_popular	3	2	6	9	1.383664914
process_call	4	3	12	16	0.52511711
similar_featur	2	2	4	4	1.242212719
singl_term	7	4	28	49	-0.050526303
term_calcul	2	2	4	4	1.242212719
term_topic	1	1	1	1	2.100760523
type_document	2	1	2	4	2.242212719
appli_mathemat	3	2	6	9	1.383664914
creat_word	2	2	4	4	1.242212719
decreas_number	2	2	4	4	1.242212719
master_degre	5	5	25	25	-1.333430694
test_train	4	2	8	16	1.52511711
text_evalu	6	2	12	36	1.808021501
cosin_angl	2	2	4	4	1.242212719
evalu_cluster	5	3	15	25	0.666569306
evalu_lrec	7	3	21	49	0.949473697
given_user	6	3	18	36	0.808021501
includ_step	3	3	9	9	0.383664914
likelihood_estim	2	2	4	4	1.242212719
mine_icdm	1	1	1	1	2.100760523
model_experi	11	4	44	121	0.51528248
optim_number	2	2	4	4	1.242212719
process_order	6	4	24	36	-0.191978499
queri_queri	1	1	1	1	2.100760523
recent_studi	3	3	9	9	0.383664914
similar_concept	8	3	24	64	1.090925893
strip_program	4	3	12	16	0.52511711
classifi_emot	6	3	18	36	0.808021501
consid_word	4	4	16	16	-0.47488289
inform_featur	7	3	21	49	0.949473697
measur_combin	1	1	1	1	2.100760523
model_number	5	5	25	25	-1.333430694
refer_word	6	3	18	36	0.808021501
techniqu_stem	9	4	36	81	0.232378088
word_letter	3	3	9	9	0.383664914

<b>Theme</b>	<b>2017 Tot</b>	<b>2017 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
approach_present	6	2	12	36	1.808021501
integr_data	8	5	40	64	-0.909074107
method_data	5	4	20	25	-0.333430694
model_present	7	5	35	49	-1.050526303
multi_dimension	1	1	1	1	2.100760523
select_select	1	1	1	1	2.100760523
system_abl	12	4	48	144	0.656734676
text_exampl	5	5	25	25	-1.333430694
base_function	2	2	4	4	1.242212719
develop_base	9	5	45	81	-0.767621912
emot_analysi	8	4	32	64	0.090925893
mine_introduct	5	5	25	25	-1.333430694
morpholog_syntact	6	2	12	36	1.808021501
score_evalu	3	1	3	9	2.383664914
servic_name	3	1	3	9	2.383664914
precis_rate	1	1	1	1	2.100760523
order_compar	4	4	16	16	-0.47488289
similar_function	1	1	1	1	2.100760523
step_algorithm	5	5	25	25	-1.333430694
neg_emot	1	1	1	1	2.100760523
particular_categori	2	1	2	4	2.242212719
advanc_neural	7	5	35	49	-1.050526303
cluster_form	1	1	1	1	2.100760523
html_http	4	3	12	16	0.52511711
particular_document	2	2	4	4	1.242212719
reduc_dimens	2	2	4	4	1.242212719
stem_approach	2	1	2	4	2.242212719
twitter_social	6	2	12	36	1.808021501
accuraci_text	3	3	9	9	0.383664914
learn_theori	6	5	30	36	-1.191978499
select_appropri	4	3	12	16	0.52511711
task_document	3	3	9	9	0.383664914
term_index	1	1	1	1	2.100760523
text_model	1	1	1	1	2.100760523
time_frame	5	3	15	25	0.666569306
analysi_determin	5	5	25	25	-1.333430694
classifi_class	3	3	9	9	0.383664914
creativ_common	8	3	24	64	1.090925893

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
lower_valu	2	2	4	4	1.242212719
match_algorithm	5	2	10	25	1.666569306
problem_data	3	3	9	9	0.383664914
techniqu_term	3	3	9	9	0.383664914
word_algorithm	7	6	42	49	-2.050526303
class_cluster	9	3	27	81	1.232378088
evalu_topic	1	1	1	1	2.100760523
process_describ	4	3	12	16	0.52511711
system_inform	3	2	6	9	1.383664914
tion_retriev	1	1	1	1	2.100760523
total_score	10	2	20	100	2.373830284
user_select	7	5	35	49	-1.050526303
word_defin	2	2	4	4	1.242212719
word_find	1	1	1	1	2.100760523
collect_us	5	3	15	25	0.666569306
data_perform	5	5	25	25	-1.333430694
dice_similar	9	2	18	81	2.232378088
formal_defin	2	2	4	4	1.242212719
respons_time	8	4	32	64	0.090925893
techniqu_order	6	4	24	36	-0.191978499
distribut_similar	2	2	4	4	1.242212719
probabl_term	1	1	1	1	2.100760523
document_assign	1	1	1	1	2.100760523
leibler_diverg	2	1	2	4	2.242212719
bucklei_term	2	2	4	4	1.242212719
categor_comput	1	1	1	1	2.100760523
collect_dataset	5	3	15	25	0.666569306
introduct_modern	2	1	2	4	2.242212719
keyword_arab	3	3	9	9	0.383664914
search_us	3	3	9	9	0.383664914
size_document	4	3	12	16	0.52511711
system_page	2	2	4	4	1.242212719
time_document	1	1	1	1	2.100760523
charact_number	6	6	36	36	-2.191978499
document_select	1	1	1	1	2.100760523
effect_method	6	5	30	36	-1.191978499
languag_complex	2	2	4	4	1.242212719
method_take	6	6	36	36	-2.191978499

<b>Theme</b>	<b>2017 Tot</b>	<b>2017 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
signific_amount	5	5	25	25	-1.333430694
analysi_classif	5	4	20	25	-0.333430694
appli_comput	3	3	9	9	0.383664914
document_obtain	1	1	1	1	2.100760523
main_focu	3	3	9	9	0.383664914
model_outperform	6	5	30	36	-1.191978499
probabl_class	3	1	3	9	2.383664914
represent_method	1	1	1	1	2.100760523
term_mean	1	1	1	1	2.100760523
word_singl	1	1	1	1	2.100760523
algorithm_present	3	3	9	9	0.383664914
approach_comput	7	5	35	49	-1.050526303
corpu_includ	4	2	8	16	1.52511711
data_analyz	7	3	21	49	0.949473697
data_experi	4	4	16	16	-0.47488289
depend_word	4	3	12	16	0.52511711
describ_method	2	1	2	4	2.242212719
distribu_tion	3	2	6	9	1.383664914
frequenc_featur	4	3	12	16	0.52511711
good_accuraci	8	4	32	64	0.090925893
human_behavior	8	2	16	64	2.090925893
lucen_apach	2	1	2	4	2.242212719
main_advantag	7	5	35	49	-1.050526303
saudi_arabia	5	3	15	25	0.666569306
tag_tag	1	1	1	1	2.100760523
us_automat	3	2	6	9	1.383664914
word_inform	3	3	9	9	0.383664914
analysi_identifi	4	4	16	16	-0.47488289
common_attribut	8	3	24	64	1.090925893
exampl_tweet	6	4	24	36	-0.191978499
model_find	4	4	16	16	-0.47488289
normal_term	7	2	14	49	1.949473697
polar_text	12	2	24	144	2.656734676
preci_sion	1	1	1	1	2.100760523
system_includ	5	3	15	25	0.666569306
text_therefor	4	2	8	16	1.52511711
theori_applic	9	4	36	81	0.232378088
us_linguist	2	2	4	4	1.242212719

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
word_correspond	6	3	18	36	0.808021501
neg_train	4	3	12	16	0.52511711
cluster_hierarch	3	3	9	9	0.383664914
document_reduc	1	1	1	1	2.100760523
index_databas	3	1	3	9	2.383664914
stage_text	2	1	2	4	2.242212719
class_repres	4	2	8	16	1.52511711
cluster_evalu	2	1	2	4	2.242212719
document_includ	3	3	9	9	0.383664914
experiment_studi	1	1	1	1	2.100760523
identifi_topic	2	1	2	4	2.242212719
social_interact	3	3	9	9	0.383664914
user_label	1	1	1	1	2.100760523
vector_similar	1	1	1	1	2.100760523
word_normal	1	1	1	1	2.100760523
descend_order	2	2	4	4	1.242212719
form_verb	3	1	3	9	2.383664914
semant_represent	1	1	1	1	2.100760523
stem_gener	7	3	21	49	0.949473697
stem_porter	6	6	36	36	-2.191978499
term_contain	2	2	4	4	1.242212719
text_obtain	5	3	15	25	0.666569306
us_languag	4	2	8	16	1.52511711
us_queri	3	2	6	9	1.383664914
document_content	1	1	1	1	2.100760523
document_increas	4	2	8	16	1.52511711
evalu_qualiti	7	4	28	49	-0.050526303
filter_us	6	3	18	36	0.808021501
huge_number	6	5	30	36	-1.191978499
match_user	1	1	1	1	2.100760523
remov_letter	3	3	9	9	0.383664914
step_preprocess	6	4	24	36	-0.191978499
weight_score	4	2	8	16	1.52511711
word_vocabulari	1	1	1	1	2.100760523
avail_abl	3	3	9	9	0.383664914
document_distribut	6	4	24	36	-0.191978499
extract_task	5	3	15	25	0.666569306
imag_analysi	2	2	4	4	1.242212719

<b>Theme</b>	<b>2017 Tot</b>	<b>2017 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
languag_make	6	4	24	36	-0.191978499
obtain_cluster	2	2	4	4	1.242212719
process_identifi	6	5	30	36	-1.191978499
significantli_reduc	3	2	6	9	1.383664914
step_extract	2	2	4	4	1.242212719
step_identifi	3	3	9	9	0.383664914
system_term	3	3	9	9	0.383664914
us_graph	4	4	16	16	-0.47488289
us_knowledg	1	1	1	1	2.100760523
approach_machin	6	4	24	36	-0.191978499
independ_assumpt	4	3	12	16	0.52511711
method_mean	5	3	15	25	0.666569306
number_sampl	5	5	25	25	-1.333430694
origin_dataset	4	1	4	16	2.52511711
problem_automat	2	2	4	4	1.242212719
twitter_stream	5	3	15	25	0.666569306
user_system	6	6	36	36	-2.191978499
data_distribut	2	2	4	4	1.242212719
document_call	2	2	4	4	1.242212719
avail_document	2	2	4	4	1.242212719
calcul_distanc	3	2	6	9	1.383664914
input_train	4	4	16	16	-0.47488289
base_emot	2	2	4	4	1.242212719
develop_evalu	2	2	4	4	1.242212719
featur_evalu	5	3	15	25	0.666569306
linear_function	2	2	4	4	1.242212719
particular_domain	3	3	9	9	0.383664914
randomli_chosen	5	3	15	25	0.666569306
valu_measur	2	2	4	4	1.242212719
algorithm_mine	1	1	1	1	2.100760523
analyz_tweet	3	3	9	9	0.383664914
imag_video	5	5	25	25	-1.333430694
measur_find	2	2	4	4	1.242212719
number_retriev	1	1	1	1	2.100760523
process_automat	3	3	9	9	0.383664914
process_take	4	4	16	16	-0.47488289
requir_user	3	3	9	9	0.383664914
rule_combin	7	1	7	49	2.949473697

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
signific_word	1	1	1	1	2.100760523
appli_stem	3	2	6	9	1.383664914
applic_servic	4	4	16	16	-0.47488289
base_structur	5	5	25	25	-1.333430694
calcu_late	1	1	1	1	2.100760523
correspond_sentenc	5	3	15	25	0.666569306
experi_text	3	3	9	9	0.383664914
featur_calcul	3	3	9	9	0.383664914
interact_user	5	3	15	25	0.666569306
map_word	2	1	2	4	2.242212719
order_understand	7	3	21	49	0.949473697
search_retriev	2	2	4	4	1.242212719
token_remov	1	1	1	1	2.100760523
us_gener	4	4	16	16	-0.47488289
vector_train	3	3	9	9	0.383664914
weight_obtain	7	3	21	49	0.949473697
class_posit	2	2	4	4	1.242212719
commun_comput	7	4	28	49	-0.050526303
consist_phase	6	4	24	36	-0.191978499
correctli_identifi	1	1	1	1	2.100760523
document_form	1	1	1	1	2.100760523
experi_dataset	7	5	35	49	-1.050526303
knowledg_resourc	1	1	1	1	2.100760523
languag_social	2	2	4	4	1.242212719
system_measur	3	2	6	9	1.383664914
text_method	3	3	9	9	0.383664914
word_chang	7	7	49	49	-3.050526303
engin_issu	2	2	4	4	1.242212719
identifi_us	1	1	1	1	2.100760523
determin_number	2	1	2	4	2.242212719
normal_word	2	2	4	4	1.242212719
text_identifi	2	1	2	4	2.242212719
world_congress	5	3	15	25	0.666569306
comparison_method	1	1	1	1	2.100760523
document_improv	1	1	1	1	2.100760523
precis_calcul	1	1	1	1	2.100760523
stem_document	1	1	1	1	2.100760523
centroid_cluster	5	3	15	25	0.666569306

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
data_approach	2	2	4	4	1.242212719
indic_word	2	2	4	4	1.242212719
interest_user	5	3	15	25	0.666569306
punctuat_remov	7	5	35	49	-1.050526303
set_featur	4	3	12	16	0.52511711
twitter_facebook	3	3	9	9	0.383664914
variou_techniqu	2	2	4	4	1.242212719
word_ad	5	3	15	25	0.666569306
accu_raci	3	3	9	9	0.383664914
algorithm_accuraci	5	4	20	25	-0.333430694
algorithm_consist	4	4	16	16	-0.47488289
algorithm_naiv	7	6	42	49	-2.050526303
collect_collect	6	2	12	36	1.808021501
compar_us	3	1	3	9	2.383664914
comparison_document	1	1	1	1	2.100760523
comparison_precis	3	1	3	9	2.383664914
describ_process	3	2	6	9	1.383664914
develop_develop	8	4	32	64	0.090925893
equal_length	4	2	8	16	1.52511711
featur_perform	1	1	1	1	2.100760523
frequenc_corpu	1	1	1	1	2.100760523
http_lucen	2	1	2	4	2.242212719
keyword_queri	2	2	4	4	1.242212719
measur_estim	3	3	9	9	0.383664914
model_take	5	3	15	25	0.666569306
obtain_word	2	2	4	4	1.242212719
probabilist_classifi	1	1	1	1	2.100760523
process_activ	1	1	1	1	2.100760523
score_comput	1	1	1	1	2.100760523
step_select	3	3	9	9	0.383664914
system_learn	1	1	1	1	2.100760523
term_relev	2	1	2	4	2.242212719
word_structur	6	5	30	36	-1.191978499
word_type	2	2	4	4	1.242212719
algorithm_classif	3	2	6	9	1.383664914
base_mean	2	2	4	4	1.242212719
clean_data	3	2	6	9	1.383664914
document_creat	2	2	4	4	1.242212719

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
document_remov	3	3	9	9	0.383664914
extract_name	2	2	4	4	1.242212719
func_tion	7	4	28	49	-0.050526303
issn_issn	8	3	24	64	1.090925893
matrix_term	3	2	6	9	1.383664914
meaning_inform	6	4	24	36	-0.191978499
method_detect	2	2	4	4	1.242212719
output_process	5	3	15	25	0.666569306
system_avail	5	3	15	25	0.666569306
system_detect	4	4	16	16	-0.47488289
text_sourc	6	3	18	36	0.808021501
time_base	4	2	8	16	1.52511711
remov_step	1	1	1	1	2.100760523
parent_node	1	1	1	1	2.100760523
perform_obtain	2	2	4	4	1.242212719
word_lead	1	1	1	1	2.100760523
appear_text	4	4	16	16	-0.47488289
cluster_repres	2	1	2	4	2.242212719
inform_servic	4	4	16	16	-0.47488289
predefin_class	1	1	1	1	2.100760523
applic_inform	2	2	4	4	1.242212719
becom_increasingli	2	1	2	4	2.242212719
classif_data	1	1	1	1	2.100760523
inform_social	2	2	4	4	1.242212719
lower_number	1	1	1	1	2.100760523
techniqu_featur	3	3	9	9	0.383664914
affix_word	3	3	9	9	0.383664914
classif_arab	4	3	12	16	0.52511711
dataset_avail	3	3	9	9	0.383664914
dataset_creat	2	2	4	4	1.242212719
featur_semant	1	1	1	1	2.100760523
function_similar	2	2	4	4	1.242212719
perform_step	2	2	4	4	1.242212719
repres_singl	5	3	15	25	0.666569306
step_gener	2	1	2	4	2.242212719
time_number	6	4	24	36	-0.191978499
token_us	2	2	4	4	1.242212719
vector_number	1	1	1	1	2.100760523

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
approach_pattern	1	1	1	1	2.100760523
contain_topic	1	1	1	1	2.100760523
content_type	4	2	8	16	1.52511711
degre_similar	2	2	4	4	1.242212719
form_inform	3	1	3	9	2.383664914
improv_us	5	5	25	25	-1.333430694
inform_form	2	1	2	4	2.242212719
interest_pattern	2	1	2	4	2.242212719
model_produc	7	3	21	49	0.949473697
present_text	3	3	9	9	0.383664914
score_precis	1	1	1	1	2.100760523
stem_exampl	2	2	4	4	1.242212719
text_appli	4	4	16	16	-0.47488289
valu_chosen	6	3	18	36	0.808021501
automat_emot	1	1	1	1	2.100760523
base_perform	6	2	12	36	1.808021501
cluster_topic	1	1	1	1	2.100760523
contain_specif	7	5	35	49	-1.050526303
data_describ	1	1	1	1	2.100760523
data_estim	5	2	10	25	1.666569306
data_user	6	6	36	36	-2.191978499
electron_commun	2	2	4	4	1.242212719
exist_techniqu	5	3	15	25	0.666569306
frequenc_text	5	5	25	25	-1.333430694
languag_stem	3	3	9	9	0.383664914
method_topic	4	3	12	16	0.52511711
model_increas	5	1	5	25	2.666569306
object_base	5	5	25	25	-1.333430694
produc_cluster	1	1	1	1	2.100760523
rela_tionship	1	1	1	1	2.100760523
signific_number	7	5	35	49	-1.050526303
similar_semant	2	1	2	4	2.242212719
system_creat	6	3	18	36	0.808021501
time_accuraci	3	2	6	9	1.383664914
topic_us	2	2	4	4	1.242212719
train_word	2	2	4	4	1.242212719
word_valu	3	3	9	9	0.383664914
semant_concept	1	1	1	1	2.100760523

<b>Theme</b>	<b>2017 Tot</b>	<b>2017 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
languag_form	2	2	4	4	1.242212719
stemmer_compar	1	1	1	1	2.100760523
distribut_class	3	3	9	9	0.383664914
binari_valu	5	5	25	25	-1.333430694
consid_number	1	1	1	1	2.100760523
document_therefor	2	2	4	4	1.242212719
gener_train	3	3	9	9	0.383664914
higher_weight	1	1	1	1	2.100760523
method_present	2	2	4	4	1.242212719
word_preposit	2	2	4	4	1.242212719
approach_select	3	2	6	9	1.383664914
assign_cluster	1	1	1	1	2.100760523
cluster_compar	5	3	15	25	0.666569306
form_form	2	2	4	4	1.242212719
grow_rapidli	2	1	2	4	2.242212719
matrix_contain	5	4	20	25	-0.333430694
method_semant	4	2	8	16	1.52511711
term_identifi	2	2	4	4	1.242212719
text_present	5	3	15	25	0.666569306
topic_similar	1	1	1	1	2.100760523
vector_input	2	2	4	4	1.242212719
analysi_comput	2	1	2	4	2.242212719
analysi_problem	3	3	9	9	0.383664914
approach_compar	5	4	20	25	-0.333430694
emerg_technolog	4	4	16	16	-0.47488289
exist_algorithm	1	1	1	1	2.100760523
graph_model	1	1	1	1	2.100760523
luhn_automat	2	2	4	4	1.242212719
method_construct	1	1	1	1	2.100760523
order_measur	5	3	15	25	0.666569306
perform_fold	1	1	1	1	2.100760523
remov_nois	1	1	1	1	2.100760523
similar_approach	1	1	1	1	2.100760523
system_refer	4	3	12	16	0.52511711
tool_provid	1	1	1	1	2.100760523
transact_pattern	5	5	25	25	-1.333430694
analysi_knowledg	5	5	25	25	-1.333430694
base_appli	4	4	16	16	-0.47488289

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
base_rank	4	3	12	16	0.52511711
classifi_term	3	3	9	9	0.383664914
crucial_role	4	4	16	16	-0.47488289
featur_learn	2	2	4	4	1.242212719
field_data	4	4	16	16	-0.47488289
function_defin	2	2	4	4	1.242212719
gener_architectur	1	1	1	1	2.100760523
good_featur	1	1	1	1	2.100760523
lemmat_word	1	1	1	1	2.100760523
mathemat_scienc	2	2	4	4	1.242212719
media_content	7	4	28	49	-0.050526303
model_machin	6	4	24	36	-0.191978499
morpho_syntact	2	2	4	4	1.242212719
number_attribut	4	4	16	16	-0.47488289
number_concept	3	3	9	9	0.383664914
perform_dataset	2	2	4	4	1.242212719
similar_group	1	1	1	1	2.100760523
simpl_probabilist	3	3	9	9	0.383664914
solv_issu	4	2	8	16	1.52511711
split_text	4	4	16	16	-0.47488289
step_find	3	3	9	9	0.383664914
stochast_gradient	2	1	2	4	2.242212719
text_step	2	2	4	4	1.242212719
third_type	4	2	8	16	1.52511711
type_system	3	2	6	9	1.383664914
cluster_correspond	1	1	1	1	2.100760523
compar_origin	2	2	4	4	1.242212719
sequenc_model	2	2	4	4	1.242212719
rule_defin	2	2	4	4	1.242212719
correspond_featur	2	2	4	4	1.242212719
process_search	1	1	1	1	2.100760523
therrefor_develop	4	4	16	16	-0.47488289
word_indic	3	3	9	9	0.383664914
categori_us	1	1	1	1	2.100760523
classif_new	2	1	2	4	2.242212719
correspond_topic	1	1	1	1	2.100760523
dictionari_dictionari	2	2	4	4	1.242212719
document_normal	1	1	1	1	2.100760523

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
engin_retriev	1	1	1	1	2.100760523
inquiri_word	1	1	1	1	2.100760523
remov_arab	2	2	4	4	1.242212719
requir_addit	1	1	1	1	2.100760523
step_token	2	2	4	4	1.242212719
us_normal	1	1	1	1	2.100760523
alphabet_charact	1	1	1	1	2.100760523
base_implement	3	3	9	9	0.383664914
base_pattern	3	3	9	9	0.383664914
base_probabl	5	3	15	25	0.666569306
case_text	6	6	36	36	-2.191978499
charact_punctuat	3	3	9	9	0.383664914
engin_inform	4	4	16	16	-0.47488289
extract_phrase	2	1	2	4	2.242212719
initi_step	2	1	2	4	2.242212719
measur_qualiti	2	2	4	4	1.242212719
method_effect	3	3	9	9	0.383664914
model_calcul	2	1	2	4	2.242212719
particular_case	2	2	4	4	1.242212719
rapid_develop	5	3	15	25	0.666569306
string_number	1	1	1	1	2.100760523
system_make	1	1	1	1	2.100760523
toulous_franc	1	1	1	1	2.100760523
us_resourc	5	4	20	25	-0.333430694
valu_model	2	1	2	4	2.242212719
vector_length	2	2	4	4	1.242212719
word_porter	3	3	9	9	0.383664914
approach_found	4	2	8	16	1.52511711
call_term	1	1	1	1	2.100760523
classifi_decis	4	2	8	16	1.52511711
content_tweet	4	4	16	16	-0.47488289
databas_commun	1	1	1	1	2.100760523
document_specif	3	3	9	9	0.383664914
human_social	1	1	1	1	2.100760523
inform_analysi	4	3	12	16	0.52511711
linguist_volum	1	1	1	1	2.100760523
method_case	5	4	20	25	-0.333430694
model_thu	4	3	12	16	0.52511711

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
page_contain	3	2	6	9	1.383664914
partial_support	5	4	20	25	-0.333430694
plai_crucial	4	4	16	16	-0.47488289
problem_includ	4	2	8	16	1.52511711
scienc_softwar	6	4	24	36	-0.191978499
step_approach	2	2	4	4	1.242212719
step_featur	3	3	9	9	0.383664914
studi_comput	1	1	1	1	2.100760523
system_capabl	1	1	1	1	2.100760523
system_project	3	3	9	9	0.383664914
techniqu_help	5	5	25	25	-1.333430694
techniqu_perform	3	3	9	9	0.383664914
text_twitter	6	4	24	36	-0.191978499
time_exampl	4	4	16	16	-0.47488289
tool_gener	4	2	8	16	1.52511711
us_preprocess	6	4	24	36	-0.191978499
vector_contain	3	2	6	9	1.383664914
document_phrase	1	1	1	1	2.100760523
text_vector	1	1	1	1	2.100760523
algorithm_given	2	2	4	4	1.242212719
method_word	1	1	1	1	2.100760523
problem_word	1	1	1	1	2.100760523
spend_time	3	3	9	9	0.383664914
state_model	3	3	9	9	0.383664914
combin_term	1	1	1	1	2.100760523
effici_search	2	2	4	4	1.242212719
enorm_amount	4	4	16	16	-0.47488289
further_increas	1	1	1	1	2.100760523
model_addit	1	1	1	1	2.100760523
model_requir	3	1	3	9	2.383664914
select_topic	1	1	1	1	2.100760523
term_search	1	1	1	1	2.100760523
test_compar	2	2	4	4	1.242212719
addit_word	2	1	2	4	2.242212719
analysi_applic	4	4	16	16	-0.47488289
approach_reli	3	3	9	9	0.383664914
databas_search	1	1	1	1	2.100760523
elimin_stem	1	1	1	1	2.100760523

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
eval_uation	4	2	8	16	1.52511711
identifi_similar	2	2	4	4	1.242212719
knowledg_document	1	1	1	1	2.100760523
network_machin	5	3	15	25	0.666569306
split_data	1	1	1	1	2.100760523
steinbach_karypi	1	1	1	1	2.100760523
store_file	1	1	1	1	2.100760523
topic_exampl	1	1	1	1	2.100760523
user_data	4	3	12	16	0.52511711
valu_posit	5	5	25	25	-1.333430694
accord_word	1	1	1	1	2.100760523
algorithm_determin	4	3	12	16	0.52511711
anger_fear	3	3	9	9	0.383664914
approach_consist	3	2	6	9	1.383664914
approach_outperform	2	1	2	4	2.242212719
candid_gener	2	1	2	4	2.242212719
choos_number	1	1	1	1	2.100760523
collect_period	3	3	9	9	0.383664914
compar_number	3	3	9	9	0.383664914
construct_graph	2	1	2	4	2.242212719
count_time	1	1	1	1	2.100760523
descrip_tion	2	2	4	4	1.242212719
design_algorithm	1	1	1	1	2.100760523
document_view	1	1	1	1	2.100760523
extract_textual	1	1	1	1	2.100760523
featur_preprocess	4	4	16	16	-0.47488289
filter_step	2	2	4	4	1.242212719
help_classifi	5	4	20	25	-0.333430694
independ_given	4	4	16	16	-0.47488289
knowledg_sourc	3	3	9	9	0.383664914
label_class	3	3	9	9	0.383664914
method_produc	1	1	1	1	2.100760523
overal_score	1	1	1	1	2.100760523
process_human	3	3	9	9	0.383664914
step_construct	4	4	16	16	-0.47488289
strength_weak	2	1	2	4	2.242212719
test_purpos	2	2	4	4	1.242212719
us_extern	1	1	1	1	2.100760523

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
word_divid	3	3	9	9	0.383664914
word_system	4	4	16	16	-0.47488289
topic_categor	1	1	1	1	2.100760523
consid_time	3	3	9	9	0.383664914
data_partit	1	1	1	1	2.100760523
exist_document	2	2	4	4	1.242212719
featur_name	3	3	9	9	0.383664914
iter_step	1	1	1	1	2.100760523
label_base	2	2	4	4	1.242212719
media_platform	2	2	4	4	1.242212719
method_keyword	1	1	1	1	2.100760523
base_frequent	1	1	1	1	2.100760523
cate_gori	1	1	1	1	2.100760523
comparison_baselin	4	2	8	16	1.52511711
comput_perform	1	1	1	1	2.100760523
consid_case	4	4	16	16	-0.47488289
dataset_method	2	2	4	4	1.242212719
distribut_represent	2	1	2	4	2.242212719
introduc_concept	2	2	4	4	1.242212719
level_document	3	3	9	9	0.383664914
metric_text	1	1	1	1	2.100760523
queri_gener	1	1	1	1	2.100760523
support_grant	2	2	4	4	1.242212719
user_perform	5	3	15	25	0.666569306
variou_approach	1	1	1	1	2.100760523
accuraci_number	2	2	4	4	1.242212719
affect_user	4	4	16	16	-0.47488289
analysi_emot	4	3	12	16	0.52511711
analysi_featur	3	3	9	9	0.383664914
analysi_order	5	5	25	25	-1.333430694
averag_sentenc	2	2	4	4	1.242212719
categori_tweet	2	2	4	4	1.242212719
contain_singl	4	4	16	16	-0.47488289
discoveri_databas	1	1	1	1	2.100760523
distanc_calcul	5	3	15	25	0.666569306
experi_featur	3	1	3	9	2.383664914
graph_structur	2	2	4	4	1.242212719
increas_precis	2	2	4	4	1.242212719

<b>Theme</b>	<b>2017 Tot</b>	<b>2017 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
keyword_cluster	4	4	16	16	-0.47488289
level_system	3	3	9	9	0.383664914
main_sourc	5	4	20	25	-0.333430694
neg_affect	2	2	4	4	1.242212719
network_data	2	2	4	4	1.242212719
order_base	2	2	4	4	1.242212719
process_construct	2	2	4	4	1.242212719
sampl_test	4	3	12	16	0.52511711
step_build	3	3	9	9	0.383664914
us_exampl	1	1	1	1	2.100760523
user_give	1	1	1	1	2.100760523
vector_calcul	1	1	1	1	2.100760523
word_retriev	1	1	1	1	2.100760523
written_java	3	3	9	9	0.383664914
ad_word	1	1	1	1	2.100760523
extern_sourc	2	1	2	4	2.242212719
featur_posit	1	1	1	1	2.100760523
overal_system	1	1	1	1	2.100760523
stem_languag	1	1	1	1	2.100760523
algorithm_consid	1	1	1	1	2.100760523
automat_creation	2	2	4	4	1.242212719
cluster_unsupervis	2	2	4	4	1.242212719
dataset_compar	3	3	9	9	0.383664914
describ_algorithm	3	2	6	9	1.383664914
effici_cluster	1	1	1	1	2.100760523
full_word	2	1	2	4	2.242212719
model_human	4	3	12	16	0.52511711
punctuat_stop	3	3	9	9	0.383664914
rang_valu	4	1	4	16	2.52511711
remov_frequent	1	1	1	1	2.100760523
sampl_word	1	1	1	1	2.100760523
time_text	1	1	1	1	2.100760523
word_affect	2	1	2	4	2.242212719
algorithm_obtain	1	1	1	1	2.100760523
approach_provid	1	1	1	1	2.100760523
calcul_step	2	2	4	4	1.242212719
difficult_languag	3	1	3	9	2.383664914
document_arab	1	1	1	1	2.100760523

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
equat_calcul	1	1	1	1	2.100760523
extract_variou	1	1	1	1	2.100760523
famili_member	4	2	8	16	1.52511711
index_base	1	1	1	1	2.100760523
indic_cluster	2	1	2	4	2.242212719
inform_becom	2	1	2	4	2.242212719
manual_extract	2	1	2	4	2.242212719
metric_base	1	1	1	1	2.100760523
miller_wordnet	1	1	1	1	2.100760523
perform_supervis	2	2	4	4	1.242212719
process_design	1	1	1	1	2.100760523
process_part	1	1	1	1	2.100760523
score_method	1	1	1	1	2.100760523
stream_text	1	1	1	1	2.100760523
system_conclus	3	2	6	9	1.383664914
test_split	3	2	6	9	1.383664914
topic_cover	1	1	1	1	2.100760523
uniqu_featur	3	2	6	9	1.383664914
user_send	1	1	1	1	2.100760523
predict_categor	1	1	1	1	2.100760523
annual_symposium	2	2	4	4	1.242212719
model_respect	1	1	1	1	2.100760523
analysi_time	1	1	1	1	2.100760523
approach_deal	1	1	1	1	2.100760523
base_natur	1	1	1	1	2.100760523
collect_user	1	1	1	1	2.100760523
creation_literatur	2	2	4	4	1.242212719
data_group	1	1	1	1	2.100760523
document_pars	1	1	1	1	2.100760523
exampl_queri	1	1	1	1	2.100760523
normal_us	1	1	1	1	2.100760523
topic_refer	1	1	1	1	2.100760523
complet_text	3	2	6	9	1.383664914
context_process	1	1	1	1	2.100760523
correl_topic	1	1	1	1	2.100760523
data_chang	2	2	4	4	1.242212719
help_peopl	1	1	1	1	2.100760523
inform_thu	1	1	1	1	2.100760523

Theme	2017 Tot	2017 Doc	XY	X^2	Distance
limit_word	1	1	1	1	2.100760523
method_exampl	1	1	1	1	2.100760523
mine_word	1	1	1	1	2.100760523
model_prove	2	1	2	4	2.242212719
model_singl	3	2	6	9	1.383664914
nois_data	1	1	1	1	2.100760523
perform_find	1	1	1	1	2.100760523
term_process	1	1	1	1	2.100760523
time_make	1	1	1	1	2.100760523
us_collect	1	1	1	1	2.100760523
us_determin	1	1	1	1	2.100760523
user_accord	3	3	9	9	0.383664914
valu_text	3	3	9	9	0.383664914
word_correl	3	2	6	9	1.383664914
mean_approach	1	1	1	1	2.100760523
current_version	1	1	1	1	2.100760523
martin_porter	2	2	4	4	1.242212719
obtain_relev	1	1	1	1	2.100760523
refer_mean	2	2	4	4	1.242212719
term_obtain	2	1	2	4	2.242212719
approach_discov	2	2	4	4	1.242212719
approach_estim	1	1	1	1	2.100760523
catégori_classif	1	1	1	1	2.100760523
classifi_built	1	1	1	1	2.100760523
classifi_simpl	1	1	1	1	2.100760523
data_initi	2	2	4	4	1.242212719
featur_input	1	1	1	1	2.100760523
function_determin	2	2	4	4	1.242212719
improv_document	1	1	1	1	2.100760523
measur_emot	1	1	1	1	2.100760523
preprocess_token	2	2	4	4	1.242212719
problem_lack	1	1	1	1	2.100760523
process_complet	1	1	1	1	2.100760523
provid_signific	2	2	4	4	1.242212719
select_group	1	1	1	1	2.100760523
system_stem	1	1	1	1	2.100760523
thousand_document	2	1	2	4	2.242212719
train_remain	1	1	1	1	2.100760523

<b>Theme</b>	<b>2017 Tot</b>	<b>2017 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
contain_user	1	1	1	1	2.100760523
email_address	1	1	1	1	2.100760523
account_order	1	1	1	1	2.100760523
accuraci_significantli	2	2	4	4	1.242212719
base_lexic	1	1	1	1	2.100760523
base_theori	2	2	4	4	1.242212719
becom_time	2	2	4	4	1.242212719
featur_task	2	2	4	4	1.242212719
limit_term	1	1	1	1	2.100760523
process_break	1	1	1	1	2.100760523
public_date	1	1	1	1	2.100760523
retriev_semant	1	1	1	1	2.100760523
space_number	1	1	1	1	2.100760523
studi_analysi	1	1	1	1	2.100760523
symposium_document	2	1	2	4	2.242212719
tree_approach	2	2	4	4	1.242212719
apach_core	1	1	1	1	2.100760523

## APPENDIX 5-M

This appendix contains the distance from trend calculations for 2018.

Column H	Column I
SUM x	6412.0
SUM Y	3733.0
SUM XY	19210
SUM X^2	67476
n	2202
a	1.197685817
b	0.17088207
Trend Formula	$Y = 1.19768581665414 + 0.170882069826511X$

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
machin_learn	58	15	870	3364	-3.891154133
text_mine	32	12	384	1024	-5.334087949
natur_languag	33	10	330	1089	-3.163205879
inform_retriev	31	8	248	961	-1.504970019
data_mine	17	7	119	289	-2.897318996
stop_word	49	14	686	2401	-4.429092762
naiv_bay	30	5	150	900	1.324147911
text_classif	22	4	88	484	0.957091353
languag_process	24	8	192	576	-2.701144508
featur_select	6	3	18	36	-0.777021764
text_document	25	9	225	625	-3.530262438
sentiment_analysi	15	3	45	225	0.760916864
neural_network	12	5	60	144	-1.751729345
social_media	45	5	225	2025	3.887378959
precis_recal	19	7	133	361	-2.555554857
social_network	20	3	60	400	1.615327213
document_cluster	27	4	108	729	1.811501702
part_speech	2	2	4	4	-0.460550044

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
comput_linguist	16	8	128	256	-4.068201066
arab_text	12	2	24	144	1.248270655
topic_model	76	4	304	5776	10.18472312
term_frequenc	26	8	208	676	-2.359380368
text_categor	11	4	44	121	-0.922611415
support_vector	9	6	54	81	-3.264375555
vector_space	22	9	198	484	-4.042908647
train_data	11	6	66	121	-2.922611415
vector_machin	9	6	54	81	-3.264375555
name_entiti	8	3	24	64	-0.435257625
search_engin	76	3	228	5776	11.18472312
similar_measur	11	5	55	121	-1.922611415
document_frequenc	11	7	77	121	-3.922611415
featur_extract	11	5	55	121	-1.922611415
posit_neg	16	6	96	256	-2.068201066
base_approach	10	5	50	100	-2.093493485
term_weight	6	2	12	36	0.222978236
text_process	2	2	4	4	-0.460550044
text_analysi	13	8	104	169	-4.580847276
learn_algorithm	7	4	28	49	-1.606139695
word_remov	19	10	190	361	-5.555554857
space_model	13	5	65	169	-1.580847276
artifici_intellig	6	5	30	36	-2.777021764
cross_valid	16	5	80	256	-1.068201066
arab_languag	6	3	18	36	-0.777021764
featur_vector	6	3	18	36	-0.777021764
stem_algorithm	20	7	140	400	-2.384672787
cluster_algorithm	11	1	11	121	2.077388585
word_document	21	10	210	441	-5.213790717
train_test	22	9	198	484	-4.042908647
scienc_engin	8	3	24	64	-0.435257625
number_word	10	7	70	100	-4.093493485
word_stem	6	4	24	36	-1.777021764
inform_extract	4	3	12	16	-1.118785904
decis_tree	2	1	2	4	0.539449956
document_collect	12	5	60	144	-1.751729345
semant_analysi	15	5	75	225	-1.239083136
softwar_engin	2	2	4	4	-0.460550044

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
document_document	5	3	15	25	-0.947903834
latent_semant	11	5	55	121	-1.922611415
invers_document	9	7	63	81	-4.264375555
retriev_system	9	3	27	81	-0.264375555
depart_comput	4	4	16	16	-2.118785904
bay_classifi	9	1	9	81	1.735624445
test_data	4	3	12	16	-1.118785904
cosin_similar	13	5	65	169	-1.580847276
document_term	5	2	10	25	0.052096166
data_process	1	1	1	1	0.368567886
data_set	3	3	9	9	-1.289667974
data_collect	6	3	18	36	-0.777021764
rule_base	2	2	4	4	-0.460550044
word_list	4	3	12	16	-1.118785904
train_model	25	6	150	625	-0.530262438
keyword_extract	1	1	1	1	0.368567886
random_forest	8	2	16	64	0.564742375
base_method	5	4	20	25	-1.947903834
nearest_neighbor	2	1	2	4	0.539449956
latent_dirichlet	15	3	45	225	0.760916864
stem_word	4	4	16	16	-2.118785904
classif_algorithm	3	2	6	9	-0.289667974
porter_stemmer	13	9	117	169	-5.580847276
speech_tag	1	1	1	1	0.368567886
mine_techniqu	13	5	65	169	-1.580847276
knowledg_base	6	4	24	36	-1.777021764
scienc_technolog	12	4	48	144	-0.751729345
electr_engin	8	3	24	64	-0.435257625
supervis_learn	1	1	1	1	0.368567886
semant_similar	9	5	45	81	-2.264375555
model_base	3	1	3	9	0.710332026
base_featur	5	4	20	25	-1.947903834
engin_comput	9	4	36	81	-1.264375555
light_stem	1	1	1	1	0.368567886
text_file	11	4	44	121	-0.922611415
cloud_comput	1	1	1	1	0.368567886
data_analysi	4	4	16	16	-2.118785904
document_contain	10	7	70	100	-4.093493485

<b>Theme</b>	<b>2018 Tot</b>	<b>2018 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
dirichlet_alloc	15	3	45	225	0.760916864
automat_text	2	2	4	4	-0.460550044
remov_stop	11	6	66	121	-2.922611415
engin_technolog	13	5	65	169	-1.580847276
cluster_cluster	3	2	6	9	-0.289667974
document_classif	4	4	16	16	-2.118785904
word_sentenc	1	1	1	1	0.368567886
model_us	13	6	78	169	-2.580847276
word_frequenc	7	4	28	49	-1.606139695
languag_model	3	1	3	9	0.710332026
classif_us	15	4	60	225	-0.239083136
solv_problem	1	1	1	1	0.368567886
system_us	9	4	36	81	-1.264375555
recal_precis	14	4	56	196	-0.409965206
learn_approach	5	3	15	25	-0.947903834
document_summar	2	1	2	4	0.539449956
frequenc_word	10	5	50	100	-2.093493485
inform_scienc	5	3	15	25	-0.947903834
word_text	5	4	20	25	-1.947903834
frequenc_term	4	2	8	16	-0.118785904
frequenc_invers	7	6	42	49	-3.606139695
improv_perform	16	5	80	256	-1.068201066
relev_document	9	3	27	81	-0.264375555
inform_process	6	4	24	36	-1.777021764
comput_applic	17	4	68	289	0.102681004
document_word	3	3	9	9	-1.289667974
extract_featur	9	6	54	81	-3.264375555
compar_studi	1	1	1	1	0.368567886
method_base	5	3	15	25	-0.947903834
select_method	4	2	8	16	-0.118785904
recal_measur	3	3	9	9	-1.289667974
classif_accuraci	2	2	4	4	-0.460550044
number_time	2	2	4	4	-0.460550044
topic_topic	8	3	24	64	-0.435257625
learn_model	11	4	44	121	-0.922611415
document_repres	5	4	20	25	-1.947903834
languag_text	2	2	4	4	-0.460550044
learn_techniqu	3	3	9	9	-1.289667974

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
cluster_method	8	2	16	64	0.564742375
similar_document	4	2	8	16	-0.118785904
multi_document	2	1	2	4	0.539449956
base_model	2	2	4	4	-0.460550044
number_featur	4	3	12	16	-1.118785904
document_us	5	3	15	25	-0.947903834
knowledg_discoveri	4	3	12	16	-1.118785904
word_appear	4	4	16	16	-2.118785904
word_featur	4	4	16	16	-2.118785904
document_vector	8	4	32	64	-1.435257625
mean_word	9	5	45	81	-2.264375555
extract_text	4	4	16	16	-2.118785904
textual_data	4	2	8	16	-0.118785904
form_word	3	1	3	9	0.710332026
model_inform	4	3	12	16	-1.118785904
repres_document	3	2	6	9	-0.289667974
model_model	8	5	40	64	-2.435257625
process_step	6	2	12	36	0.222978236
extract_inform	1	1	1	1	0.368567886
base_similar	14	6	84	196	-2.409965206
languag_technolog	8	2	16	64	0.564742375
word_base	3	3	9	9	-1.289667974
comput_engin	1	1	1	1	0.368567886
scienc_inform	2	1	2	4	0.539449956
right_reserv	5	1	5	25	1.052096166
opinion_mine	6	4	24	36	-1.777021764
process_text	3	3	9	9	-1.289667974
evalu_metric	7	5	35	49	-2.606139695
manag_system	2	2	4	4	-0.460550044
classif_task	3	1	3	9	0.710332026
document_number	6	5	30	36	-2.777021764
stem_process	14	5	70	196	-1.409965206
test_dataset	5	3	15	25	-0.947903834
document_represent	3	1	3	9	0.710332026
noun_verb	1	1	1	1	0.368567886
weight_term	2	1	2	4	0.539449956
us_word	11	5	55	121	-1.922611415
amount_data	2	2	4	4	-0.460550044

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
word_model	11	5	55	121	-1.922611415
document_matrix	7	1	7	49	1.393860305
number_topic	13	3	39	169	0.419152724
fold_cross	8	4	32	64	-1.435257625
similar_word	5	5	25	25	-2.947903834
word_vector	40	5	200	1600	3.03296861
sentenc_document	2	1	2	4	0.539449956
featur_space	1	1	1	1	0.368567886
averag_precis	7	2	14	49	0.393860305
term_base	2	2	4	4	-0.460550044
mean_cluster	9	2	18	81	0.735624445
logist_regress	17	3	51	289	1.102681004
term_extract	10	2	20	100	0.906506515
collect_document	9	4	36	81	-1.264375555
recal_score	1	1	1	1	0.368567886
us_data	3	3	9	9	-1.289667974
khoja_stemmer	1	1	1	1	0.368567886
text_content	3	1	3	9	0.710332026
stock_market	1	1	1	1	0.368567886
number_cluster	9	3	27	81	-0.264375555
morpholog_analysi	1	1	1	1	0.368567886
pattern_recognit	6	3	18	36	-0.777021764
us_inform	4	3	12	16	-1.118785904
data_data	3	2	6	9	-0.289667974
contain_word	3	3	9	9	-1.289667974
classif_model	3	3	9	9	-1.289667974
base_text	3	3	9	9	-1.289667974
step_step	1	1	1	1	0.368567886
user_queri	23	2	46	529	3.127973423
model_train	8	6	48	64	-3.435257625
train_document	1	1	1	1	0.368567886
featur_featur	5	4	20	25	-1.947903834
index_term	4	3	12	16	-1.118785904
select_featur	3	2	6	9	-0.289667974
unstructur_data	1	1	1	1	0.368567886
arab_document	2	1	2	4	0.539449956
us_machin	1	1	1	1	0.368567886
time_consum	7	5	35	49	-2.606139695

<b>Theme</b>	<b>2018 Tot</b>	<b>2018 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
algorithm_base	5	4	20	25	-1.947903834
analysi_retriev	4	3	12	16	-1.118785904
knowledg_manag	2	1	2	4	0.539449956
cluster_base	5	2	10	25	0.052096166
cluster_document	5	1	5	25	1.052096166
learn_method	4	4	16	16	-2.118785904
improv_accuraci	8	4	32	64	-1.435257625
word_mean	5	5	25	25	-2.947903834
textual_content	1	1	1	1	0.368567886
cluster_us	5	3	15	25	-0.947903834
human_languag	7	2	14	49	0.393860305
predict_model	9	3	27	81	-0.264375555
weight_scheme	4	3	12	16	-1.118785904
base_system	1	1	1	1	0.368567886
intellig_system	6	6	36	36	-3.777021764
collect_data	3	2	6	9	-0.289667974
comput_inform	4	3	12	16	-1.118785904
mobil_devic	1	1	1	1	0.368567886
word_occurr	1	1	1	1	0.368567886
document_text	3	2	6	9	-0.289667974
classifi_classifi	7	2	14	49	0.393860305
cluster_techniqu	7	3	21	49	-0.606139695
term_occur	5	4	20	25	-1.947903834
gold_standard	3	1	3	9	0.710332026
queri_term	15	2	30	225	1.760916864
mean_algorithm	4	1	4	16	0.881214096
world_wide	2	2	4	4	-0.460550044
text_preprocess	2	1	2	4	0.539449956
system_develop	4	2	8	16	-0.118785904
term_term	3	1	3	9	0.710332026
develop_inform	5	3	15	25	-0.947903834
point_view	2	1	2	4	0.539449956
word_root	1	1	1	1	0.368567886
recommend_system	1	1	1	1	0.368567886
maximum_entropi	1	1	1	1	0.368567886
stem_stem	1	1	1	1	0.368567886
error_rate	2	1	2	4	0.539449956
plai_role	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
singl_word	5	1	5	25	1.052096166
prefix_suffix	4	1	4	16	0.881214096
imag_process	2	1	2	4	0.539449956
root_word	6	4	24	36	-1.777021764
document_retriev	5	2	10	25	0.052096166
retriev_document	4	2	8	16	-0.118785904
spam_filter	13	3	39	169	0.419152724
occur_document	3	3	9	9	-1.289667974
increas_number	3	3	9	9	-1.289667974
system_base	3	2	6	9	-0.289667974
classif_method	1	1	1	1	0.368567886
comput_system	12	3	36	144	0.248270655
inform_gain	2	2	4	4	-0.460550044
data_train	7	4	28	49	-1.606139695
document_similar	8	2	16	64	0.564742375
us_text	1	1	1	1	0.368567886
docu_ment	4	3	12	16	-1.118785904
sourc_text	2	2	4	4	-0.460550044
full_text	3	2	6	9	-0.289667974
latent_topic	2	1	2	4	0.539449956
model_text	3	3	9	9	-1.289667974
advanc_comput	1	1	1	1	0.368567886
genet_algorithm	1	1	1	1	0.368567886
knowledg_data	1	1	1	1	0.368567886
search_queri	3	2	6	9	-0.289667974
frequent_word	11	4	44	121	-0.922611415
inform_text	3	3	9	9	-1.289667974
term_appear	4	1	4	16	0.881214096
class_label	10	6	60	100	-3.093493485
train_dataset	3	2	6	9	-0.289667974
number_term	6	2	12	36	0.222978236
probabl_distribut	6	3	18	36	-0.777021764
preprocess_step	4	3	12	16	-1.118785904
porter_stem	1	1	1	1	0.368567886
issn_onlin	1	1	1	1	0.368567886
linguist_featur	34	2	68	1156	5.007676191
similar_score	9	4	36	81	-1.264375555
text_retriev	4	2	8	16	-0.118785904

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
evalu_us	2	2	4	4	-0.460550044
word_occur	2	2	4	4	-0.460550044
condit_probabl	2	1	2	4	0.539449956
data_engin	1	1	1	1	0.368567886
test_document	1	1	1	1	0.368567886
process_manag	3	2	6	9	-0.289667974
exampl_word	4	3	12	16	-1.118785904
languag_resourc	2	1	2	4	0.539449956
reduc_number	1	1	1	1	0.368567886
base_term	3	1	3	9	0.710332026
approach_base	11	4	44	121	-0.922611415
base_classifi	1	1	1	1	0.368567886
process_techniqu	1	1	1	1	0.368567886
fals_posit	22	4	88	484	0.957091353
frequent_pattern	10	1	10	100	1.906506515
comput_commun	2	2	4	4	-0.460550044
extract_keyword	2	2	4	4	-0.460550044
deep_learn	9	3	27	81	-0.264375555
method_us	7	5	35	49	-2.606139695
phrase_base	1	1	1	1	0.368567886
document_corpu	6	3	18	36	-0.777021764
inform_knowledg	1	1	1	1	0.368567886
classifi_text	3	2	6	9	-0.289667974
word_extract	4	4	16	16	-2.118785904
word_count	7	4	28	49	-1.606139695
retriev_inform	1	1	1	1	0.368567886
list_word	1	1	1	1	0.368567886
structur_data	1	1	1	1	0.368567886
input_data	1	1	1	1	0.368567886
appear_document	2	2	4	4	-0.460550044
train_classifi	5	4	20	25	-1.947903834
sentenc_sentenc	1	1	1	1	0.368567886
classifi_us	3	3	9	9	-1.289667974
text_us	4	3	12	16	-1.118785904
combin_featur	2	2	4	4	-0.460550044
classifi_train	2	1	2	4	0.539449956
approach_us	6	4	24	36	-1.777021764
document_queri	3	2	6	9	-0.289667974

<b>Theme</b>	<b>2018 Tot</b>	<b>2018 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
classif_problem	3	2	6	9	-0.289667974
object_function	1	1	1	1	0.368567886
text_corpu	1	1	1	1	0.368567886
process_inform	2	2	4	4	-0.460550044
document_base	5	4	20	25	-1.947903834
infor_mation	3	1	3	9	0.710332026
level_featur	1	1	1	1	0.368567886
system_perform	8	5	40	64	-2.435257625
program_languag	1	1	1	1	0.368567886
system_applic	1	1	1	1	0.368567886
queri_expans	51	1	51	2601	8.912671378
word_order	3	3	9	9	-1.289667974
algorithm_algorithm	5	4	20	25	-1.947903834
text_base	3	3	9	9	-1.289667974
pattern_mine	6	1	6	36	1.222978236
issn_volum	6	2	12	36	0.222978236
remov_stem	4	4	16	16	-2.118785904
evalu_measur	2	2	4	4	-0.460550044
artifici_neural	1	1	1	1	0.368567886
document_featur	2	2	4	4	-0.460550044
view_project	2	1	2	4	0.539449956
model_evalu	10	4	40	100	-1.093493485
media_text	2	2	4	4	-0.460550044
euclidean_distanc	4	2	8	16	-0.118785904
contain_term	4	4	16	16	-2.118785904
algorithm_perform	4	1	4	16	0.881214096
extract_us	3	3	9	9	-1.289667974
colleg_engin	1	1	1	1	0.368567886
build_model	1	1	1	1	0.368567886
linguist_analysi	3	2	6	9	-0.289667974
engin_scien	1	1	1	1	0.368567886
contain_document	3	2	6	9	-0.289667974
singl_document	1	1	1	1	0.368567886
data_structur	2	2	4	4	-0.460550044
system_design	1	1	1	1	0.368567886
soft_comput	1	1	1	1	0.368567886
volum_number	1	1	1	1	0.368567886
relev_inform	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
process_document	2	2	4	4	-0.460550044
text_featur	10	2	20	100	0.906506515
cluster_process	1	1	1	1	0.368567886
word_us	2	2	4	4	-0.460550044
classif_process	3	3	9	9	-1.289667974
word_term	2	1	2	4	0.539449956
perform_test	1	1	1	1	0.368567886
input_output	1	1	1	1	0.368567886
user_request	3	2	6	9	-0.289667974
word_embed	27	3	81	729	2.811501702
random_field	5	2	10	25	0.052096166
featur_base	1	1	1	1	0.368567886
public_http	1	1	1	1	0.368567886
word_topic	18	3	54	324	1.273563074
number_iter	4	3	12	16	-1.118785904
unigram_bigram	5	2	10	25	0.052096166
allow_user	3	2	6	9	-0.289667974
design_implement	4	2	8	16	-0.118785904
content_base	1	1	1	1	0.368567886
semant_index	1	1	1	1	0.368567886
cluster_text	1	1	1	1	0.368567886
mathemat_model	1	1	1	1	0.368567886
document_process	2	1	2	4	0.539449956
algorithm_us	3	3	9	9	-1.289667974
period_time	2	1	2	4	0.539449956
word_sens	3	3	9	9	-1.289667974
content_page	1	1	1	1	0.368567886
wide_rang	1	1	1	1	0.368567886
comput_time	3	3	9	9	-1.289667974
autom_text	1	1	1	1	0.368567886
document_topic	11	5	55	121	-1.922611415
syntact_semant	1	1	1	1	0.368567886
method_text	1	1	1	1	0.368567886
unsupervis_learn	4	3	12	16	-1.118785904
discoveri_data	4	3	12	16	-1.118785904
informa_tion	5	4	20	25	-1.947903834
data_text	3	3	9	9	-1.289667974
topic_document	16	4	64	256	-0.068201066

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
emot_recognit	10	2	20	100	0.906506515
perform_us	3	3	9	9	-1.289667974
base_word	2	2	4	4	-0.460550044
vector_represent	8	4	32	64	-1.435257625
us_featur	2	1	2	4	0.539449956
measur_similar	2	2	4	4	-0.460550044
corpu_base	3	3	9	9	-1.289667974
text_word	1	1	1	1	0.368567886
graph_base	3	1	3	9	0.710332026
semant_featur	3	3	9	9	-1.289667974
confus_matrix	7	2	14	49	0.393860305
emot_classif	5	1	5	25	1.052096166
network_analysi	1	1	1	1	0.368567886
unstructur_text	6	2	12	36	0.222978236
origin_document	2	2	4	4	-0.460550044
proc_conf	1	1	1	1	0.368567886
sentenc_word	2	2	4	4	-0.460550044
distanc_measur	2	2	4	4	-0.460550044
berlin_heidelberg	5	3	15	25	-0.947903834
measur_precis	1	1	1	1	0.368567886
similar_sentenc	9	2	18	81	0.735624445
represent_document	3	1	3	9	0.710332026
train_corpu	2	1	2	4	0.539449956
uniqu_word	6	3	18	36	-0.777021764
data_model	1	1	1	1	0.368567886
hierarch_cluster	7	2	14	49	0.393860305
probabilist_model	1	1	1	1	0.368567886
evalu_perform	4	4	16	16	-2.118785904
model_perform	9	5	45	81	-2.264375555
word_level	1	1	1	1	0.368567886
pattern_base	3	1	3	9	0.710332026
classif_techniqu	3	1	3	9	0.710332026
calcul_us	2	2	4	4	-0.460550044
data_sourc	1	1	1	1	0.368567886
occurr_word	1	1	1	1	0.368567886
commun_technolog	1	1	1	1	0.368567886
stem_arab	1	1	1	1	0.368567886
inform_commun	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
taken_account	1	1	1	1	0.368567886
fals_neg	21	3	63	441	1.786209283
tweet_contain	2	1	2	4	0.539449956
occurr_term	1	1	1	1	0.368567886
base_cluster	4	1	4	16	0.881214096
reduc_dimension	4	1	4	16	0.881214096
system_evalu	2	2	4	4	-0.460550044
word_given	2	2	4	4	-0.460550044
mine_text	2	2	4	4	-0.460550044
dataset_dataset	3	3	9	9	-1.289667974
process_time	17	1	17	289	3.102681004
time_period	2	1	2	4	0.539449956
automat_extract	2	1	2	4	0.539449956
dataset_consist	7	4	28	49	-1.606139695
file_contain	1	1	1	1	0.368567886
test_perform	4	1	4	16	0.881214096
share_task	5	2	10	25	0.052096166
document_train	1	1	1	1	0.368567886
word_cluster	1	1	1	1	0.368567886
user_gener	2	2	4	4	-0.460550044
base_semant	6	4	24	36	-1.777021764
statist_analysi	1	1	1	1	0.368567886
transact_knowledg	1	1	1	1	0.368567886
model_built	1	1	1	1	0.368567886
twitter_user	3	2	6	9	-0.289667974
model_document	2	1	2	4	0.539449956
retriev_relev	8	3	24	64	-0.435257625
gram_gram	5	2	10	25	0.052096166
speech_recognit	1	1	1	1	0.368567886
linear_regress	4	3	12	16	-1.118785904
data_point	3	2	6	9	-0.289667974
common_word	1	1	1	1	0.368567886
signal_process	1	1	1	1	0.368567886
calcul_similar	3	3	9	9	-1.289667974
system_system	2	2	4	4	-0.460550044
model_data	1	1	1	1	0.368567886
standard_arab	1	1	1	1	0.368567886
perform_system	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
valu_calcul	1	1	1	1	0.368567886
cluster_similar	2	1	2	4	0.539449956
classif_text	1	1	1	1	0.368567886
frequenc_document	4	3	12	16	-1.118785904
perform_evalu	3	3	9	9	-1.289667974
precis_measur	3	3	9	9	-1.289667974
algorithm_appli	1	1	1	1	0.368567886
text_classifi	1	1	1	1	0.368567886
model_predict	9	3	27	81	-0.264375555
analysi_method	4	4	16	16	-2.118785904
algo_rithm	2	2	4	4	-0.460550044
distribut_topic	9	2	18	81	0.735624445
classifi_document	2	1	2	4	0.539449956
text_collect	1	1	1	1	0.368567886
extract_term	3	2	6	9	-0.289667974
repres_vector	3	2	6	9	-0.289667974
word_categor	1	1	1	1	0.368567886
accuraci_precis	1	1	1	1	0.368567886
punctuat_mark	1	1	1	1	0.368567886
test_set	5	4	20	25	-1.947903834
data_extract	2	2	4	4	-0.460550044
comput_technolog	1	1	1	1	0.368567886
word_represent	3	2	6	9	-0.289667974
tabl_perform	4	4	16	16	-2.118785904
neg_exampl	1	1	1	1	0.368567886
featur_word	2	1	2	4	0.539449956
rule_mine	4	1	4	16	0.881214096
test_test	4	3	12	16	-1.118785904
us_porter	6	5	30	36	-2.777021764
content_document	1	1	1	1	0.368567886
word_gener	1	1	1	1	0.368567886
document_model	2	2	4	4	-0.460550044
gener_word	3	2	6	9	-0.289667974
featur_valu	2	1	2	4	0.539449956
highest_accuraci	1	1	1	1	0.368567886
mine_method	5	2	10	25	0.052096166
develop_model	8	4	32	64	-1.435257625
lexic_databas	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
regress_model	4	2	8	16	-0.118785904
tweet_user	15	1	15	225	2.760916864
class_class	4	3	12	16	-1.118785904
classif_cluster	1	1	1	1	0.368567886
featur_text	4	4	16	16	-2.118785904
stem_stop	1	1	1	1	0.368567886
process_system	2	2	4	4	-0.460550044
process_extract	4	3	12	16	-1.118785904
develop_system	3	3	9	9	-1.289667974
implement_us	4	2	8	16	-0.118785904
request_enhanc	1	1	1	1	0.368567886
dataset_contain	2	2	4	4	-0.460550044
extract_word	2	1	2	4	0.539449956
model_featur	3	1	3	9	0.710332026
comput_vision	3	2	6	9	-0.289667974
us_classifi	1	1	1	1	0.368567886
train_exampl	1	1	1	1	0.368567886
evalu_system	15	2	30	225	1.760916864
word_contain	2	2	4	4	-0.460550044
method_appli	1	1	1	1	0.368567886
extract_method	1	1	1	1	0.368567886
token_token	3	3	9	9	-1.289667974
repres_text	2	2	4	4	-0.460550044
retriev_text	1	1	1	1	0.368567886
discuss_stat	1	1	1	1	0.368567886
enhanc_download	1	1	1	1	0.368567886
public_stat	1	1	1	1	0.368567886
view_public	1	1	1	1	0.368567886
word_dictionari	4	3	12	16	-1.118785904
cluster_number	1	1	1	1	0.368567886
word_repres	7	5	35	49	-2.606139695
correl_coeffici	2	1	2	4	0.539449956
statist_machin	1	1	1	1	0.368567886
porter_algorithm	2	2	4	4	-0.460550044
twitter_data	2	2	4	4	-0.460550044
mine_algorithm	1	1	1	1	0.368567886
extract_document	2	2	4	4	-0.460550044
sentenc_text	2	2	4	4	-0.460550044

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
semant_relationship	2	2	4	4	-0.460550044
techniqu_text	2	2	4	4	-0.460550044
make_process	1	1	1	1	0.368567886
human_resourc	2	2	4	4	-0.460550044
qualiti_cluster	12	2	24	144	1.248270655
relev_featur	4	2	8	16	-0.118785904
manual_label	1	1	1	1	0.368567886
represent_model	2	2	4	4	-0.460550044
word_consid	3	2	6	9	-0.289667974
publiccli_avail	3	1	3	9	0.710332026
automat_index	1	1	1	1	0.368567886
springer_verlag	5	3	15	25	-0.947903834
distribut_word	10	4	40	100	-1.093493485
keyword_text	1	1	1	1	0.368567886
word_similar	2	2	4	4	-0.460550044
root_stem	1	1	1	1	0.368567886
measur_accuraci	2	2	4	4	-0.460550044
cluster_approach	6	2	12	36	0.222978236
classif_approach	1	1	1	1	0.368567886
interest_includ	1	1	1	1	0.368567886
inform_document	2	2	4	4	-0.460550044
mine_inform	2	2	4	4	-0.460550044
document_index	3	2	6	9	-0.289667974
featur_document	1	1	1	1	0.368567886
model_repres	1	1	1	1	0.368567886
neg_word	1	1	1	1	0.368567886
sequenc_word	2	2	4	4	-0.460550044
perform_model	3	1	3	9	0.710332026
sens_disambigu	4	2	8	16	-0.118785904
data_base	2	2	4	4	-0.460550044
model_select	15	2	30	225	1.760916864
search_space	3	1	3	9	0.710332026
tweet_tweet	4	1	4	16	0.881214096
predict_stock	1	1	1	1	0.368567886
classifi_base	1	1	1	1	0.368567886
select_text	1	1	1	1	0.368567886
bay_algorithm	1	1	1	1	0.368567886
represent_text	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
resourc_evalu	1	1	1	1	0.368567886
dimension_space	1	1	1	1	0.368567886
main_idea	3	2	6	9	-0.289667974
tree_structur	1	1	1	1	0.368567886
algorithm_cluster	3	2	6	9	-0.289667974
word_stop	6	3	18	36	-0.777021764
measur_measur	1	1	1	1	0.368567886
extract_sentenc	2	2	4	4	-0.460550044
problem_solv	1	1	1	1	0.368567886
word_corpu	1	1	1	1	0.368567886
word_found	1	1	1	1	0.368567886
base_search	29	1	29	841	5.153265842
data_store	2	1	2	4	0.539449956
neg_neutral	1	1	1	1	0.368567886
issu_march	2	2	4	4	-0.460550044
search_algorithm	1	1	1	1	0.368567886
recal_valu	2	2	4	4	-0.460550044
techniqu_base	5	2	10	25	0.052096166
data_preprocess	2	1	2	4	0.539449956
method_perform	1	1	1	1	0.368567886
obtain_us	3	1	3	9	0.710332026
statist_model	3	2	6	9	-0.289667974
accuraci_rate	1	1	1	1	0.368567886
textual_inform	1	1	1	1	0.368567886
cluster_data	3	2	6	9	-0.289667974
test_collect	3	2	6	9	-0.289667974
semant_inform	2	2	4	4	-0.460550044
assist_professor	2	2	4	4	-0.460550044
weight_word	2	2	4	4	-0.460550044
bayesian_classifi	4	2	8	16	-0.118785904
given_text	1	1	1	1	0.368567886
word_filter	2	1	2	4	0.539449956
content_word	2	2	4	4	-0.460550044
execut_time	1	1	1	1	0.368567886
highest_score	2	2	4	4	-0.460550044
repres_number	2	1	2	4	0.539449956
analyz_data	2	1	2	4	0.539449956
model_gener	4	2	8	16	-0.118785904

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
repres_word	6	5	30	36	-2.777021764
languag_word	3	3	9	9	-1.289667974
topic_word	9	3	27	81	-0.264375555
represent_word	4	4	16	16	-2.118785904
tweet_us	1	1	1	1	0.368567886
base_algorithm	1	1	1	1	0.368567886
model_paramet	1	1	1	1	0.368567886
document_sentenc	2	2	4	4	-0.460550044
content_text	2	2	4	4	-0.460550044
method_automat	4	4	16	16	-2.118785904
user_user	2	1	2	4	0.539449956
further_process	2	1	2	4	0.539449956
system_implement	1	1	1	1	0.368567886
process_perform	1	1	1	1	0.368567886
springer_berlin	4	2	8	16	-0.118785904
accuraci_us	1	1	1	1	0.368567886
technolog_comput	1	1	1	1	0.368567886
volum_page	2	2	4	4	-0.460550044
featur_gener	2	2	4	4	-0.460550044
perform_measur	4	3	12	16	-1.118785904
base_analysi	2	2	4	4	-0.460550044
amount_inform	2	2	4	4	-0.460550044
document_level	3	2	6	9	-0.289667974
input_document	1	1	1	1	0.368567886
sentenc_base	2	2	4	4	-0.460550044
mine_applic	2	2	4	4	-0.460550044
valu_term	1	1	1	1	0.368567886
word_cloud	1	1	1	1	0.368567886
root_form	4	4	16	16	-2.118785904
improv_qualiti	2	2	4	4	-0.460550044
societi_inform	2	2	4	4	-0.460550044
us_algorithm	1	1	1	1	0.368567886
model_develop	3	3	9	9	-1.289667974
previou_studi	1	1	1	1	0.368567886
posit_word	1	1	1	1	0.368567886
text_contain	2	2	4	4	-0.460550044
detect_system	13	3	39	169	0.419152724
charact_recognit	4	2	8	16	-0.118785904

<b>Theme</b>	<b>2018 Tot</b>	<b>2018 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
model_test	2	2	4	4	-0.460550044
frequent_itemset	34	4	136	1156	3.007676191
measur_perform	2	1	2	4	0.539449956
document_calcul	1	1	1	1	0.368567886
gibb_sampl	3	2	6	9	-0.289667974
solut_problem	2	2	4	4	-0.460550044
avail_onlin	1	1	1	1	0.368567886
weight_assign	1	1	1	1	0.368567886
model_topic	9	4	36	81	-1.264375555
measur_text	3	3	9	9	-1.289667974
help_user	2	2	4	4	-0.460550044
cluster_perform	5	3	15	25	-0.947903834
rank_document	1	1	1	1	0.368567886
train_sampl	2	2	4	4	-0.460550044
perform_experi	4	4	16	16	-2.118785904
previou_step	1	1	1	1	0.368567886
step_process	1	1	1	1	0.368567886
time_complex	3	1	3	9	0.710332026
number_text	1	1	1	1	0.368567886
us_techniqu	5	3	15	25	-0.947903834
find_similar	4	2	8	16	-0.118785904
correctli_classifi	4	3	12	16	-1.118785904
word_process	1	1	1	1	0.368567886
languag_arab	2	2	4	4	-0.460550044
type_data	1	1	1	1	0.368567886
data_avail	2	1	2	4	0.539449956
mine_data	3	2	6	9	-0.289667974
number_user	2	2	4	4	-0.460550044
extract_system	1	1	1	1	0.368567886
dimension_vector	3	2	6	9	-0.289667974
learn_text	1	1	1	1	0.368567886
techniqu_appli	3	1	3	9	0.710332026
semant_mean	11	3	33	121	0.077388585
similar_valu	5	2	10	25	0.052096166
charact_word	1	1	1	1	0.368567886
cluster_centroid	1	1	1	1	0.368567886
function_word	2	2	4	4	-0.460550044
user_search	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
word_number	2	2	4	4	-0.460550044
order_reduc	2	2	4	4	-0.460550044
degre_comput	6	2	12	36	0.222978236
dimension_data	1	1	1	1	0.368567886
exist_method	4	4	16	16	-2.118785904
extract_data	1	1	1	1	0.368567886
vector_word	10	5	50	100	-2.093493485
knowledg_engin	1	1	1	1	0.368567886
scienc_depart	1	1	1	1	0.368567886
string_match	3	1	3	9	0.710332026
main_problem	2	2	4	4	-0.460550044
model_classifi	2	2	4	4	-0.460550044
measur_us	2	2	4	4	-0.460550044
origin_text	2	2	4	4	-0.460550044
statist_inform	1	1	1	1	0.368567886
measur_evalu	7	4	28	49	-1.606139695
find_relev	2	1	2	4	0.539449956
arab_corpu	1	1	1	1	0.368567886
system_architectur	4	3	12	16	-1.118785904
assign_weight	1	1	1	1	0.368567886
mean_text	2	2	4	4	-0.460550044
addit_featur	6	2	12	36	0.222978236
topic_base	2	2	4	4	-0.460550044
weight_averag	1	1	1	1	0.368567886
word_token	3	3	9	9	-1.289667974
group_group	1	1	1	1	0.368567886
process_model	1	1	1	1	0.368567886
score_score	8	3	24	64	-0.435257625
preprocess_text	3	3	9	9	-1.289667974
algorithm_document	1	1	1	1	0.368567886
classifi_perform	2	2	4	4	-0.460550044
word_semant	1	1	1	1	0.368567886
analysi_document	1	1	1	1	0.368567886
us_term	1	1	1	1	0.368567886
combin_word	1	1	1	1	0.368567886
network_base	1	1	1	1	0.368567886
time_term	2	2	4	4	-0.460550044
gener_topic	6	2	12	36	0.222978236

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
improv_effici	1	1	1	1	0.368567886
data_contain	1	1	1	1	0.368567886
free_text	3	2	6	9	-0.289667974
linear_combin	1	1	1	1	0.368567886
system_extract	4	2	8	16	-0.118785904
classifi_test	3	1	3	9	0.710332026
tech_niqu	2	2	4	4	-0.460550044
us_train	2	2	4	4	-0.460550044
word_common	1	1	1	1	0.368567886
count_number	2	2	4	4	-0.460550044
evalu_model	4	2	8	16	-0.118785904
experi_perform	3	2	6	9	-0.289667974
classif_base	4	3	12	16	-1.118785904
featur_train	2	2	4	4	-0.460550044
mine_us	2	2	4	4	-0.460550044
term_text	3	2	6	9	-0.289667974
model_method	6	2	12	36	0.222978236
provid_inform	1	1	1	1	0.368567886
start_point	1	1	1	1	0.368567886
process_method	1	1	1	1	0.368567886
textual_document	2	2	4	4	-0.460550044
applic_text	2	2	4	4	-0.460550044
corpu_document	3	2	6	9	-0.289667974
gener_model	2	2	4	4	-0.460550044
group_similar	2	2	4	4	-0.460550044
lexicon_base	6	1	6	36	1.222978236
valu_document	3	2	6	9	-0.289667974
data_test	1	1	1	1	0.368567886
word_select	2	2	4	4	-0.460550044
base_topic	7	2	14	49	0.393860305
human_factor	4	2	8	16	-0.118785904
predefin_categor	1	1	1	1	0.368567886
classifi_categor	2	2	4	4	-0.460550044
document_total	1	1	1	1	0.368567886
sentenc_length	2	1	2	4	0.539449956
word_approach	3	2	6	9	-0.289667974
cluster_qualiti	1	1	1	1	0.368567886
collect_text	2	1	2	4	0.539449956

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
maximum_likelihood	2	2	4	4	-0.460550044
measur_valu	2	1	2	4	0.539449956
us_support	3	3	9	9	-1.289667974
word_includ	1	1	1	1	0.368567886
document_consid	2	2	4	4	-0.460550044
empir_studi	1	1	1	1	0.368567886
system_test	1	1	1	1	0.368567886
comput_similar	5	2	10	25	0.052096166
corpu_text	1	1	1	1	0.368567886
morgan_kaufmann	1	1	1	1	0.368567886
stem_us	3	2	6	9	-0.289667974
averag_number	2	1	2	4	0.539449956
frequenc_count	1	1	1	1	0.368567886
includ_text	2	1	2	4	0.539449956
techniqu_extract	2	1	2	4	0.539449956
develop_method	1	1	1	1	0.368567886
given_word	2	2	4	4	-0.460550044
process_reduc	2	2	4	4	-0.460550044
train_us	3	2	6	9	-0.289667974
us_simpl	1	1	1	1	0.368567886
word_context	1	1	1	1	0.368567886
wordnet_lexic	1	1	1	1	0.368567886
emot_categori	3	2	6	9	-0.289667974
represent_us	3	2	6	9	-0.289667974
time_word	1	1	1	1	0.368567886
word_exampl	2	2	4	4	-0.460550044
issu_issn	1	1	1	1	0.368567886
posit_fals	12	3	36	144	0.248270655
user_tweet	22	2	44	484	2.957091353
weight_approach	1	1	1	1	0.368567886
index_document	2	1	2	4	0.539449956
perform_classifi	2	1	2	4	0.539449956
address_problem	2	2	4	4	-0.460550044
document_rank	1	1	1	1	0.368567886
pattern_analysi	1	1	1	1	0.368567886
us_vector	2	2	4	4	-0.460550044
princip_compon	1	1	1	1	0.368567886
term_number	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
mine_task	1	1	1	1	0.368567886
perform_cluster	3	1	3	9	0.710332026
take_advantag	4	4	16	16	-2.118785904
algorithm_stem	4	3	12	16	-1.118785904
white_space	2	2	4	4	-0.460550044
featur_us	5	3	15	25	-0.947903834
graph_node	1	1	1	1	0.368567886
weight_calcul	1	1	1	1	0.368567886
spam_detect	1	1	1	1	0.368567886
store_databas	2	1	2	4	0.539449956
mixtur_model	2	1	2	4	0.539449956
method_evalu	2	2	4	4	-0.460550044
inform_avail	1	1	1	1	0.368567886
precis_valu	2	1	2	4	0.539449956
suffix_strip	2	2	4	4	-0.460550044
sourc_inform	2	2	4	4	-0.460550044
featur_repres	4	4	16	16	-2.118785904
classifi_featur	1	1	1	1	0.368567886
process_word	2	2	4	4	-0.460550044
algorithm_develop	2	2	4	4	-0.460550044
main_reason	1	1	1	1	0.368567886
base_stem	1	1	1	1	0.368567886
comput_approach	1	1	1	1	0.368567886
given_queri	4	1	4	16	0.881214096
perform_algorithm	1	1	1	1	0.368567886
stopword_remov	1	1	1	1	0.368567886
inform_word	2	2	4	4	-0.460550044
model_word	3	2	6	9	-0.289667974
optic_charact	4	2	8	16	-0.118785904
scienc_applic	2	2	4	4	-0.460550044
learn_object	1	1	1	1	0.368567886
automat_evalu	4	2	8	16	-0.118785904
vector_featur	1	1	1	1	0.368567886
model_compar	4	3	12	16	-1.118785904
term_select	4	1	4	16	0.881214096
us_gram	4	3	12	16	-1.118785904
user_defin	3	2	6	9	-0.289667974
base_user	2	1	2	4	0.539449956

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
index_process	2	1	2	4	0.539449956
similar_mean	1	1	1	1	0.368567886
gram_base	2	2	4	4	-0.460550044
sourc_data	2	2	4	4	-0.460550044
text_messag	6	2	12	36	0.222978236
technolog_volum	2	1	2	4	0.539449956
analysi_social	2	1	2	4	0.539449956
base_techniqu	2	1	2	4	0.539449956
dataset_train	3	3	9	9	-1.289667974
select_algorithm	1	1	1	1	0.368567886
token_stop	4	4	16	16	-2.118785904
us_wordnet	1	1	1	1	0.368567886
valu_pair	1	1	1	1	0.368567886
base_represent	4	1	4	16	0.881214096
facebook_twitter	2	1	2	4	0.539449956
us_wikipedia	5	1	5	25	1.052096166
class_number	1	1	1	1	0.368567886
dimension_featur	1	1	1	1	0.368567886
extract_techniqu	1	1	1	1	0.368567886
model_automat	4	4	16	16	-2.118785904
european_languag	1	1	1	1	0.368567886
text_repres	1	1	1	1	0.368567886
comput_network	2	1	2	4	0.539449956
method_combin	1	1	1	1	0.368567886
word_match	2	2	4	4	-0.460550044
algorithm_find	1	1	1	1	0.368567886
data_consist	1	1	1	1	0.368567886
featur_includ	4	3	12	16	-1.118785904
form_stem	3	3	9	9	-1.289667974
token_process	4	4	16	16	-2.118785904
weight_vector	2	2	4	4	-0.460550044
consist_document	1	1	1	1	0.368567886
sentenc_structur	2	2	4	4	-0.460550044
system_consist	3	3	9	9	-1.289667974
test_model	4	2	8	16	-0.118785904
analysi_machin	2	2	4	4	-0.460550044
frequenc_weight	1	1	1	1	0.368567886
measur_calcul	3	3	9	9	-1.289667974

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
workshop_comput	1	1	1	1	0.368567886
text_dataset	1	1	1	1	0.368567886
us_equat	1	1	1	1	0.368567886
collect_corpu	5	5	25	25	-2.947903834
lexic_featur	1	1	1	1	0.368567886
mean_valu	2	1	2	4	0.539449956
model_extract	1	1	1	1	0.368567886
perform_analysi	1	1	1	1	0.368567886
corpu_word	1	1	1	1	0.368567886
model_system	2	1	2	4	0.539449956
us_rule	6	2	12	36	0.222978236
concept_document	1	1	1	1	0.368567886
catégori_catégori	2	1	2	4	0.539449956
length_document	1	1	1	1	0.368567886
north_chapter	1	1	1	1	0.368567886
overal_perform	2	2	4	4	-0.460550044
document_length	1	1	1	1	0.368567886
cluster_accuraci	2	1	2	4	0.539449956
good_perform	4	4	16	16	-2.118785904
list_stop	2	1	2	4	0.539449956
index_html	2	2	4	4	-0.460550044
algorithm_implement	1	1	1	1	0.368567886
convert_text	4	4	16	16	-2.118785904
word_elimin	1	1	1	1	0.368567886
improv_text	1	1	1	1	0.368567886
collect_tweet	1	1	1	1	0.368567886
count_word	3	3	9	9	-1.289667974
extract_knowledg	1	1	1	1	0.368567886
statist_signific	3	2	6	9	-0.289667974
emot_text	4	1	4	16	0.881214096
knowledg_extract	1	1	1	1	0.368567886
term_queri	14	1	14	196	2.590034794
semant_evalu	3	1	3	9	0.710332026
method_extract	1	1	1	1	0.368567886
overal_accuraci	6	1	6	36	1.222978236
repres_term	3	2	6	9	-0.289667974
approach_automat	1	1	1	1	0.368567886
automat_classifi	2	1	2	4	0.539449956

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
method_describ	1	1	1	1	0.368567886
languag_specif	2	1	2	4	0.539449956
node_repres	4	2	8	16	-0.118785904
topic_text	1	1	1	1	0.368567886
difficult_task	1	1	1	1	0.368567886
access_inform	1	1	1	1	0.368567886
depart_inform	2	2	4	4	-0.460550044
naiv_bayesian	6	1	6	36	1.222978236
queri_word	4	1	4	16	0.881214096
caus_effect	1	1	1	1	0.368567886
comput_base	6	3	18	36	-0.777021764
fine_grain	2	1	2	4	0.539449956
measur_defin	1	1	1	1	0.368567886
text_written	2	1	2	4	0.539449956
distribut_document	1	1	1	1	0.368567886
lower_case	2	1	2	4	0.539449956
recognit_system	1	1	1	1	0.368567886
semi_automat	1	1	1	1	0.368567886
consist_word	1	1	1	1	0.368567886
context_base	1	1	1	1	0.368567886
dataset_us	2	2	4	4	-0.460550044
process_phase	2	2	4	4	-0.460550044
us_corpu	1	1	1	1	0.368567886
word_distribut	11	3	33	121	0.077388585
term_occurr	1	1	1	1	0.368567886
method_cluster	4	1	4	16	0.881214096
token_text	2	2	4	4	-0.460550044
compon_analysi	1	1	1	1	0.368567886
gener_term	3	2	6	9	-0.289667974
semant_structur	1	1	1	1	0.368567886
stem_reduc	1	1	1	1	0.368567886
term_accuraci	1	1	1	1	0.368567886
cluster_word	3	2	6	9	-0.289667974
document_given	1	1	1	1	0.368567886
system_text	2	2	4	4	-0.460550044
text_understand	1	1	1	1	0.368567886
us_mean	1	1	1	1	0.368567886
document_extract	2	1	2	4	0.539449956

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
frequenc_calcul	2	1	2	4	0.539449956
document_group	6	2	12	36	0.222978236
domain_knowledg	1	1	1	1	0.368567886
gener_content	1	1	1	1	0.368567886
learn_data	5	3	15	25	-0.947903834
retriev_base	1	1	1	1	0.368567886
algorithm_mean	5	1	5	25	1.052096166
approach_perform	2	2	4	4	-0.460550044
model_approach	2	2	4	4	-0.460550044
network_us	2	1	2	4	0.539449956
gram_word	1	1	1	1	0.368567886
model_combin	8	4	32	64	-1.435257625
stemmer_algorithm	3	3	9	9	-1.289667974
valu_paramet	1	1	1	1	0.368567886
valu_word	1	1	1	1	0.368567886
accuraci_tabl	1	1	1	1	0.368567886
assign_word	3	2	6	9	-0.289667974
base_measur	3	2	6	9	-0.289667974
process_approach	1	1	1	1	0.368567886
us_latent	3	2	6	9	-0.289667974
gener_algorithm	1	1	1	1	0.368567886
preprocess_techniqu	3	3	9	9	-1.289667974
rule_rule	1	1	1	1	0.368567886
level_text	1	1	1	1	0.368567886
process_base	2	2	4	4	-0.460550044
relev_queri	3	1	3	9	0.710332026
document_test	2	2	4	4	-0.460550044
document_accord	1	1	1	1	0.368567886
order_evalu	3	2	6	9	-0.289667974
base_learn	5	3	15	25	-0.947903834
algorithm_suffix	1	1	1	1	0.368567886
approach_featur	1	1	1	1	0.368567886
time_process	1	1	1	1	0.368567886
equal_number	1	1	1	1	0.368567886
improv_cluster	1	1	1	1	0.368567886
classif_document	1	1	1	1	0.368567886
gener_process	1	1	1	1	0.368567886
jordan_latent	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
label_train	2	2	4	4	-0.460550044
model_describ	3	3	9	9	-1.289667974
us_topic	6	3	18	36	-0.777021764
base_machin	2	2	4	4	-0.460550044
frequenc_number	2	2	4	4	-0.460550044
process_includ	1	1	1	1	0.368567886
word_assign	3	3	9	9	-1.289667974
automat_classif	1	1	1	1	0.368567886
calcul_term	4	4	16	16	-2.118785904
signific_improv	3	3	9	9	-1.289667974
stage_process	1	1	1	1	0.368567886
valu_indic	4	1	4	16	0.881214096
analysi_tool	3	3	9	9	-1.289667974
gener_method	6	3	18	36	-0.777021764
vector_us	5	2	10	25	0.052096166
origin_data	2	2	4	4	-0.460550044
comput_secur	1	1	1	1	0.368567886
engin_depart	7	1	7	49	1.393860305
frequent_item	1	1	1	1	0.368567886
http_github	3	2	6	9	-0.289667974
increas_perform	4	2	8	16	-0.118785904
occurr_document	1	1	1	1	0.368567886
similar_cluster	4	1	4	16	0.881214096
studi_featur	1	1	1	1	0.368567886
token_stem	2	1	2	4	0.539449956
us_weight	2	2	4	4	-0.460550044
word_reduc	2	2	4	4	-0.460550044
base_number	1	1	1	1	0.368567886
data_includ	2	2	4	4	-0.460550044
dataset_collect	1	1	1	1	0.368567886
find_word	1	1	1	1	0.368567886
learn_train	6	3	18	36	-0.777021764
reduc_time	2	1	2	4	0.539449956
weight_document	1	1	1	1	0.368567886
word_collect	2	2	4	4	-0.460550044
corpu_train	1	1	1	1	0.368567886
learn_system	1	1	1	1	0.368567886
accuraci_classif	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
algorithm_compar	1	1	1	1	0.368567886
base_form	2	2	4	4	-0.460550044
contain_text	1	1	1	1	0.368567886
dataset_experi	2	2	4	4	-0.460550044
pair_word	4	2	8	16	-0.118785904
approach_combin	2	2	4	4	-0.460550044
includ_word	1	1	1	1	0.368567886
problem_text	1	1	1	1	0.368567886
reduct_techniqu	1	1	1	1	0.368567886
remov_punctuat	1	1	1	1	0.368567886
score_system	11	2	22	121	1.077388585
select_document	2	1	2	4	0.539449956
type_featur	1	1	1	1	0.368567886
us_model	2	2	4	4	-0.460550044
mobil_phone	6	3	18	36	-0.777021764
select_relev	11	2	22	121	1.077388585
system_data	1	1	1	1	0.368567886
gener_us	1	1	1	1	0.368567886
order_extract	1	1	1	1	0.368567886
perfor_manc	2	2	4	4	-0.460550044
recal_recal	1	1	1	1	0.368567886
rule_extract	1	1	1	1	0.368567886
structur_text	4	3	12	16	-1.118785904
word_train	2	2	4	4	-0.460550044
combin_model	2	2	4	4	-0.460550044
data_classif	1	1	1	1	0.368567886
time_featur	1	1	1	1	0.368567886
gener_categori	1	1	1	1	0.368567886
model_term	1	1	1	1	0.368567886
probabilist_latent	3	2	6	9	-0.289667974
search_word	1	1	1	1	0.368567886
order_word	1	1	1	1	0.368567886
predict_class	2	2	4	4	-0.460550044
base_applic	1	1	1	1	0.368567886
bay_classif	2	2	4	4	-0.460550044
binari_classif	1	1	1	1	0.368567886
learn_inform	1	1	1	1	0.368567886
note_comput	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
number_class	2	2	4	4	-0.460550044
perform_inform	2	2	4	4	-0.460550044
techniqu_find	1	1	1	1	0.368567886
main_step	1	1	1	1	0.368567886
make_difficult	1	1	1	1	0.368567886
servic_servic	11	1	11	121	2.077388585
method_classif	3	3	9	9	-1.289667974
model_latent	4	3	12	16	-1.118785904
model_process	1	1	1	1	0.368567886
statist_measur	3	1	3	9	0.710332026
stem_method	1	1	1	1	0.368567886
topic_gener	1	1	1	1	0.368567886
tradit_approach	1	1	1	1	0.368567886
data_format	3	1	3	9	0.710332026
featur_term	2	2	4	4	-0.460550044
posit_class	1	1	1	1	0.368567886
score_function	5	4	20	25	-1.947903834
term_precis	2	2	4	4	-0.460550044
total_word	1	1	1	1	0.368567886
divid_number	3	2	6	9	-0.289667974
present_model	3	2	6	9	-0.289667974
word_group	1	1	1	1	0.368567886
approach_develop	1	1	1	1	0.368567886
compar_word	3	3	9	9	-1.289667974
find_optim	1	1	1	1	0.368567886
further_improv	2	2	4	4	-0.460550044
probabl_word	1	1	1	1	0.368567886
proce_ing	1	1	1	1	0.368567886
data_form	1	1	1	1	0.368567886
neg_sentiment	3	2	6	9	-0.289667974
servic_orient	19	1	19	361	3.444445143
cluster_gener	4	1	4	16	0.881214096
train_phase	3	3	9	9	-1.289667974
cluster_mean	1	1	1	1	0.368567886
document_set	5	3	15	25	-0.947903834
file_file	2	2	4	4	-0.460550044
inform_sourc	1	1	1	1	0.368567886
neighbor_algorithm	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
preprocess_document	3	3	9	9	-1.289667974
structur_inform	3	2	6	9	-0.289667974
us_approach	1	1	1	1	0.368567886
dataset_evalu	1	1	1	1	0.368567886
mine_pattern	1	1	1	1	0.368567886
model_user	4	4	16	16	-2.118785904
model_vector	5	3	15	25	-0.947903834
size_data	3	2	6	9	-0.289667974
struc_ture	2	2	4	4	-0.460550044
calcul_number	3	1	3	9	0.710332026
number_charact	1	1	1	1	0.368567886
system_support	1	1	1	1	0.368567886
us_combin	1	1	1	1	0.368567886
user_interact	4	1	4	16	0.881214096
data_represent	1	1	1	1	0.368567886
experi_evalu	6	5	30	36	-2.777021764
gener_purpos	1	1	1	1	0.368567886
linguist_human	2	1	2	4	0.539449956
tech_nologi	1	1	1	1	0.368567886
word_frequent	3	2	6	9	-0.289667974
automat_process	2	2	4	4	-0.460550044
remov_prefix	1	1	1	1	0.368567886
select_word	1	1	1	1	0.368567886
us_naïv	1	1	1	1	0.368567886
correct_word	1	1	1	1	0.368567886
perform_poorli	3	3	9	9	-1.289667974
type_type	1	1	1	1	0.368567886
retriev_perform	5	2	10	25	0.052096166
effect_featur	1	1	1	1	0.368567886
data_gather	1	1	1	1	0.368567886
inform_filter	1	1	1	1	0.368567886
overcom_problem	1	1	1	1	0.368567886
method_arab	1	1	1	1	0.368567886
reduc_size	2	2	4	4	-0.460550044
stem_techniqu	3	1	3	9	0.710332026
us_document	4	3	12	16	-1.118785904
import_word	6	5	30	36	-2.777021764
perform_featur	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
approach_classifi	1	1	1	1	0.368567886
perform_document	3	1	3	9	0.710332026
algorithm_data	1	1	1	1	0.368567886
cluster_group	1	1	1	1	0.368567886
estim_probabl	1	1	1	1	0.368567886
given_topic	1	1	1	1	0.368567886
model_implement	1	1	1	1	0.368567886
order_achiev	1	1	1	1	0.368567886
vector_model	3	2	6	9	-0.289667974
inform_data	1	1	1	1	0.368567886
total_document	2	1	2	4	0.539449956
document_comput	3	2	6	9	-0.289667974
algorithm_test	1	1	1	1	0.368567886
fuzzi_set	6	2	12	36	0.222978236
system_process	1	1	1	1	0.368567886
term_semant	3	2	6	9	-0.289667974
token_part	1	1	1	1	0.368567886
train_train	1	1	1	1	0.368567886
tree_algorithm	1	1	1	1	0.368567886
detect_us	4	3	12	16	-1.118785904
help_identifi	3	1	3	9	0.710332026
input_word	3	2	6	9	-0.289667974
contain_number	2	1	2	4	0.539449956
group_document	1	1	1	1	0.368567886
approach_analyz	1	1	1	1	0.368567886
method_consid	1	1	1	1	0.368567886
document_user	3	3	9	9	-1.289667974
languag_base	1	1	1	1	0.368567886
commun_engin	1	1	1	1	0.368567886
corpu_number	3	3	9	9	-1.289667974
perform_term	2	2	4	4	-0.460550044
collect_word	2	2	4	4	-0.460550044
detail_descript	1	1	1	1	0.368567886
inform_us	1	1	1	1	0.368567886
tree_classifi	1	1	1	1	0.368567886
word_exist	2	2	4	4	-0.460550044
analysi_opinion	3	2	6	9	-0.289667974
effect_us	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
method_measur	1	1	1	1	0.368567886
paramet_valu	2	2	4	4	-0.460550044
supervis_unsupervis	1	1	1	1	0.368567886
text_consid	1	1	1	1	0.368567886
averag_valu	3	1	3	9	0.710332026
bay_theorem	2	2	4	4	-0.460550044
evalu_classifi	1	1	1	1	0.368567886
pattern_gener	1	1	1	1	0.368567886
perform_improv	4	1	4	16	0.881214096
preprocess_data	3	2	6	9	-0.289667974
test_system	1	1	1	1	0.368567886
word_search	2	2	4	4	-0.460550044
faculti_scienc	7	2	14	49	0.393860305
form_us	1	1	1	1	0.368567886
linguist_resourc	2	1	2	4	0.539449956
semant_network	7	2	14	49	0.393860305
variou_featur	2	1	2	4	0.539449956
written_text	1	1	1	1	0.368567886
categori_word	1	1	1	1	0.368567886
context_awar	2	1	2	4	0.539449956
extract_tweet	1	1	1	1	0.368567886
order_logic	2	1	2	4	0.539449956
select_term	1	1	1	1	0.368567886
simpl_word	2	2	4	4	-0.460550044
appear_frequent	1	1	1	1	0.368567886
method_select	1	1	1	1	0.368567886
modern_inform	1	1	1	1	0.368567886
term_gener	2	2	4	4	-0.460550044
evalu_evalu	1	1	1	1	0.368567886
method_improv	1	1	1	1	0.368567886
model_defin	1	1	1	1	0.368567886
multinomi_distribut	5	3	15	25	-0.947903834
size_train	1	1	1	1	0.368567886
specif_topic	3	3	9	9	-1.289667974
approach_cluster	5	1	5	25	1.052096166
describ_detail	1	1	1	1	0.368567886
document_thu	2	1	2	4	0.539449956
gram_model	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
train_time	2	1	2	4	0.539449956
convert_word	2	2	4	4	-0.460550044
divid_total	3	3	9	9	-1.289667974
improv_precis	2	1	2	4	0.539449956
document_order	1	1	1	1	0.368567886
gram_featur	2	2	4	4	-0.460550044
main_featur	1	1	1	1	0.368567886
mine_machin	2	1	2	4	0.539449956
repr_sent	1	1	1	1	0.368567886
test_evalu	3	3	9	9	-1.289667974
websit_http	1	1	1	1	0.368567886
calcul_frequenc	1	1	1	1	0.368567886
comput_semant	3	3	9	9	-1.289667974
subset_featur	2	1	2	4	0.539449956
system_arab	1	1	1	1	0.368567886
algorithm_predict	2	2	4	4	-0.460550044
gener_data	1	1	1	1	0.368567886
mine_natur	2	2	4	4	-0.460550044
multi_label	3	2	6	9	-0.289667974
node_graph	1	1	1	1	0.368567886
word_test	3	2	6	9	-0.289667974
design_model	1	1	1	1	0.368567886
further_develop	1	1	1	1	0.368567886
model_construct	2	2	4	4	-0.460550044
sampl_data	3	3	9	9	-1.289667974
salton_bucklei	2	1	2	4	0.539449956
applic_develop	1	1	1	1	0.368567886
automat_document	1	1	1	1	0.368567886
document_avail	1	1	1	1	0.368567886
model_consid	2	2	4	4	-0.460550044
stem_step	5	4	20	25	-1.947903834
arxiv_preprint	4	2	8	16	-0.118785904
classifi_classif	2	1	2	4	0.539449956
classifi_support	1	1	1	1	0.368567886
mean_document	1	1	1	1	0.368567886
method_comput	3	3	9	9	-1.289667974
technolog_issn	1	1	1	1	0.368567886
appear_time	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
auto_matic	1	1	1	1	0.368567886
captur_semant	2	1	2	4	0.539449956
linguist_structur	7	1	7	49	1.393860305
perform_base	3	3	9	9	-1.289667974
word_refer	1	1	1	1	0.368567886
data_obtain	2	1	2	4	0.539449956
describ_system	2	2	4	4	-0.460550044
direct_graph	3	2	6	9	-0.289667974
help_improv	2	1	2	4	0.539449956
linear_model	1	1	1	1	0.368567886
model_provid	2	2	4	4	-0.460550044
multipl_word	1	1	1	1	0.368567886
probabl_document	3	2	6	9	-0.289667974
topic_interest	2	2	4	4	-0.460550044
word_total	1	1	1	1	0.368567886
accuraci_obtain	3	1	3	9	0.710332026
class_classifi	1	1	1	1	0.368567886
current_state	1	1	1	1	0.368567886
experi_experi	1	1	1	1	0.368567886
mathemat_comput	1	1	1	1	0.368567886
measur_cosin	2	2	4	4	-0.460550044
messag_servic	1	1	1	1	0.368567886
similar_text	2	1	2	4	0.539449956
achiev_good	1	1	1	1	0.368567886
algorithm_term	1	1	1	1	0.368567886
method_model	4	2	8	16	-0.118785904
metric_evalu	1	1	1	1	0.368567886
stemmer_arab	1	1	1	1	0.368567886
system_consid	2	2	4	4	-0.460550044
system_requir	2	1	2	4	0.539449956
tweet_collect	2	1	2	4	0.539449956
word_user	6	2	12	36	0.222978236
appli_cluster	3	1	3	9	0.710332026
learn_task	2	1	2	4	0.539449956
document_organ	1	1	1	1	0.368567886
measur_comput	2	2	4	4	-0.460550044
term_given	2	1	2	4	0.539449956
user_find	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
bay_model	1	1	1	1	0.368567886
consid_term	1	1	1	1	0.368567886
mcgraw_hill	2	2	4	4	-0.460550044
method_document	2	2	4	4	-0.460550044
model_cluster	6	1	6	36	1.222978236
retriev_data	1	1	1	1	0.368567886
search_inform	4	2	8	16	-0.118785904
basic_idea	2	2	4	4	-0.460550044
blog_post	1	1	1	1	0.368567886
comput_survei	1	1	1	1	0.368567886
deriv_word	3	2	6	9	-0.289667974
main_contribut	1	1	1	1	0.368567886
estim_paramet	1	1	1	1	0.368567886
form_cluster	2	1	2	4	0.539449956
method_name	3	3	9	9	-1.289667974
model_techniqu	2	2	4	4	-0.460550044
neural_inform	1	1	1	1	0.368567886
binari_classifi	2	2	4	4	-0.460550044
charact_token	1	1	1	1	0.368567886
latent_variabl	1	1	1	1	0.368567886
system_comput	1	1	1	1	0.368567886
task_automat	2	2	4	4	-0.460550044
text_includ	1	1	1	1	0.368567886
us_neural	5	3	15	25	-0.947903834
algorithm_describ	1	1	1	1	0.368567886
algorithm_method	1	1	1	1	0.368567886
algorithm_requir	3	2	6	9	-0.289667974
applic_us	3	3	9	9	-1.289667974
calcul_score	2	2	4	4	-0.460550044
featur_number	1	1	1	1	0.368567886
inform_base	1	1	1	1	0.368567886
method_achiev	1	1	1	1	0.368567886
studi_focus	1	1	1	1	0.368567886
comput_program	2	2	4	4	-0.460550044
dataset_test	1	1	1	1	0.368567886
identifi_emot	2	1	2	4	0.539449956
replac_word	1	1	1	1	0.368567886
statist_data	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
automat_detect	1	1	1	1	0.368567886
calcul_word	2	2	4	4	-0.460550044
commun_system	2	2	4	4	-0.460550044
develop_tool	1	1	1	1	0.368567886
featur_classif	2	2	4	4	-0.460550044
graphic_model	4	3	12	16	-1.118785904
process_term	1	1	1	1	0.368567886
semant_resourc	2	1	2	4	0.539449956
text_analyt	3	1	3	9	0.710332026
word_weight	1	1	1	1	0.368567886
match_match	1	1	1	1	0.368567886
valu_obtain	1	1	1	1	0.368567886
defin_term	1	1	1	1	0.368567886
us_maximum	1	1	1	1	0.368567886
cluster_comput	1	1	1	1	0.368567886
space_word	1	1	1	1	0.368567886
token_document	3	1	3	9	0.710332026
model_dataset	3	3	9	9	-1.289667974
novel_approach	1	1	1	1	0.368567886
vocabulari_word	2	2	4	4	-0.460550044
frequenc_measur	2	2	4	4	-0.460550044
ground_truth	3	3	9	9	-1.289667974
levelRepresent	1	1	1	1	0.368567886
process_select	1	1	1	1	0.368567886
algorithm_automat	1	1	1	1	0.368567886
index_word	1	1	1	1	0.368567886
proc_sigir	4	1	4	16	0.881214096
algorithm_achiev	1	1	1	1	0.368567886
appli_algorithm	1	1	1	1	0.368567886
averag_length	1	1	1	1	0.368567886
evalu_base	2	2	4	4	-0.460550044
form_term	1	1	1	1	0.368567886
machin_intellig	1	1	1	1	0.368567886
mine_base	2	1	2	4	0.539449956
professor_comput	3	1	3	9	0.710332026
techniqu_reduc	2	2	4	4	-0.460550044
us_tool	2	2	4	4	-0.460550044
vector_term	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
evalu_dataset	2	2	4	4	-0.460550044
extract_semant	5	3	15	25	-0.947903834
process_machin	1	1	1	1	0.368567886
adject_noun	2	1	2	4	0.539449956
collect_process	1	1	1	1	0.368567886
gradient_descent	1	1	1	1	0.368567886
inform_structur	1	1	1	1	0.368567886
languag_world	3	2	6	9	-0.289667974
learn_us	2	1	2	4	0.539449956
model_make	1	1	1	1	0.368567886
text_form	1	1	1	1	0.368567886
analysi_natur	2	2	4	4	-0.460550044
complex_system	1	1	1	1	0.368567886
levenshtein_distanc	5	2	10	25	0.052096166
million_peopl	4	2	8	16	-0.118785904
model_structur	5	2	10	25	0.052096166
remain_word	1	1	1	1	0.368567886
search_data	1	1	1	1	0.368567886
approach_solv	1	1	1	1	0.368567886
document_convert	2	2	4	4	-0.460550044
extern_knowledg	3	3	9	9	-1.289667974
appli_document	1	1	1	1	0.368567886
assign_categori	1	1	1	1	0.368567886
distribut_data	1	1	1	1	0.368567886
network_commun	1	1	1	1	0.368567886
tree_base	2	1	2	4	0.539449956
larger_number	1	1	1	1	0.368567886
novel_method	2	2	4	4	-0.460550044
preprint_arxiv	4	2	8	16	-0.118785904
represent_vector	2	1	2	4	0.539449956
us_keyword	1	1	1	1	0.368567886
data_classifi	2	2	4	4	-0.460550044
distribut_term	1	1	1	1	0.368567886
group_base	2	2	4	4	-0.460550044
relev_user	2	1	2	4	0.539449956
summar_task	1	1	1	1	0.368567886
type_word	1	1	1	1	0.368567886
vector_weight	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
weight_weight	1	1	1	1	0.368567886
approach_method	2	2	4	4	-0.460550044
column_repres	2	1	2	4	0.539449956
dept_comput	3	2	6	9	-0.289667974
keyword_search	2	1	2	4	0.539449956
measur_word	3	2	6	9	-0.289667974
model_analysi	2	1	2	4	0.539449956
perform_comparison	2	2	4	4	-0.460550044
user_input	1	1	1	1	0.368567886
approach_gener	2	2	4	4	-0.460550044
base_keyword	6	1	6	36	1.222978236
base_multi	3	1	3	9	0.710332026
base_score	2	2	4	4	-0.460550044
base_valu	1	1	1	1	0.368567886
data_size	1	1	1	1	0.368567886
data_social	1	1	1	1	0.368567886
perform_variou	1	1	1	1	0.368567886
reduc_comput	2	2	4	4	-0.460550044
studi_us	3	3	9	9	-1.289667974
us_measur	1	1	1	1	0.368567886
word_input	1	1	1	1	0.368567886
workshop_text	1	1	1	1	0.368567886
accuraci_score	6	2	12	36	0.222978236
approach_identifi	2	1	2	4	0.539449956
base_queri	3	1	3	9	0.710332026
determin_word	1	1	1	1	0.368567886
maximum_valu	1	1	1	1	0.368567886
model_creat	5	4	20	25	-1.947903834
take_time	1	1	1	1	0.368567886
us_number	3	3	9	9	-1.289667974
user_us	4	1	4	16	0.881214096
averag_time	4	1	4	16	0.881214096
classifi_predict	1	1	1	1	0.368567886
knowledg_inform	2	2	4	4	-0.460550044
perform_stem	2	1	2	4	0.539449956
valu_given	1	1	1	1	0.368567886
word_replac	1	1	1	1	0.368567886
document_appear	2	2	4	4	-0.460550044

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
kullback_leibler	1	1	1	1	0.368567886
number_distinct	1	1	1	1	0.368567886
learn_autom	1	1	1	1	0.368567886
requir_number	1	1	1	1	0.368567886
becom_popular	1	1	1	1	0.368567886
process_call	1	1	1	1	0.368567886
similar_featur	2	2	4	4	-0.460550044
singl_term	1	1	1	1	0.368567886
term_calcul	3	2	6	9	-0.289667974
term_topic	2	1	2	4	0.539449956
type_document	1	1	1	1	0.368567886
appli_mathemat	3	1	3	9	0.710332026
creat_word	1	1	1	1	0.368567886
decreas_number	1	1	1	1	0.368567886
master_degre	1	1	1	1	0.368567886
test_train	4	2	8	16	-0.118785904
text_evalu	2	2	4	4	-0.460550044
cosin_angl	1	1	1	1	0.368567886
evalu_cluster	2	2	4	4	-0.460550044
evalu_lrec	1	1	1	1	0.368567886
given_user	2	2	4	4	-0.460550044
includ_step	2	2	4	4	-0.460550044
likelihood_estim	1	1	1	1	0.368567886
mine_icdm	3	2	6	9	-0.289667974
model_experi	1	1	1	1	0.368567886
optim_number	4	2	8	16	-0.118785904
process_order	1	1	1	1	0.368567886
queri_queri	5	2	10	25	0.052096166
recent_studi	1	1	1	1	0.368567886
similar_concept	1	1	1	1	0.368567886
strip_program	1	1	1	1	0.368567886
classifi_emot	4	1	4	16	0.881214096
consid_word	1	1	1	1	0.368567886
inform_featur	1	1	1	1	0.368567886
measur_combin	5	1	5	25	1.052096166
model_number	1	1	1	1	0.368567886
refer_word	2	2	4	4	-0.460550044
techniqu_stem	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
word_letter	1	1	1	1	0.368567886
approach_present	3	2	6	9	-0.289667974
integr_data	1	1	1	1	0.368567886
method_data	1	1	1	1	0.368567886
model_present	3	3	9	9	-1.289667974
multi_dimension	1	1	1	1	0.368567886
select_select	1	1	1	1	0.368567886
system_abl	3	3	9	9	-1.289667974
text_exampl	3	3	9	9	-1.289667974
base_function	10	1	10	100	1.906506515
develop_base	2	2	4	4	-0.460550044
emot_analysi	7	3	21	49	-0.606139695
mine_introduct	1	1	1	1	0.368567886
morpholog_syntact	1	1	1	1	0.368567886
score_evalu	4	3	12	16	-1.118785904
servic_name	4	1	4	16	0.881214096
precis_rate	2	1	2	4	0.539449956
order_compar	1	1	1	1	0.368567886
similar_function	2	1	2	4	0.539449956
step_algorithm	1	1	1	1	0.368567886
neg_emot	3	1	3	9	0.710332026
particular_categor	2	1	2	4	0.539449956
advanc_neural	1	1	1	1	0.368567886
cluster_form	2	1	2	4	0.539449956
html_http	2	1	2	4	0.539449956
particular_document	1	1	1	1	0.368567886
reduc_dimens	2	1	2	4	0.539449956
stem_approach	1	1	1	1	0.368567886
twitter_social	1	1	1	1	0.368567886
accuraci_text	2	1	2	4	0.539449956
learn_theori	4	1	4	16	0.881214096
select_appropri	2	1	2	4	0.539449956
task_document	1	1	1	1	0.368567886
term_index	1	1	1	1	0.368567886
text_model	3	1	3	9	0.710332026
time_frame	1	1	1	1	0.368567886
analysi_determin	1	1	1	1	0.368567886
classifi_class	2	2	4	4	-0.460550044

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
creativ_common	2	1	2	4	0.539449956
lower_valu	1	1	1	1	0.368567886
match_algorithm	2	1	2	4	0.539449956
problem_data	1	1	1	1	0.368567886
techniqu_term	1	1	1	1	0.368567886
word_algorithm	1	1	1	1	0.368567886
class_cluster	1	1	1	1	0.368567886
evalu_topic	2	1	2	4	0.539449956
process_describ	2	2	4	4	-0.460550044
system_inform	1	1	1	1	0.368567886
tion_retriev	1	1	1	1	0.368567886
total_score	1	1	1	1	0.368567886
user_select	1	1	1	1	0.368567886
word_defin	1	1	1	1	0.368567886
word_find	1	1	1	1	0.368567886
collect_us	2	2	4	4	-0.460550044
data_perform	2	2	4	4	-0.460550044
dice_similar	1	1	1	1	0.368567886
formal_defin	1	1	1	1	0.368567886
respons_time	4	1	4	16	0.881214096
techniqu_order	1	1	1	1	0.368567886
distribut_similar	1	1	1	1	0.368567886
probabl_term	1	1	1	1	0.368567886
document_assign	1	1	1	1	0.368567886
leibler_diverg	1	1	1	1	0.368567886
bucklei_term	1	1	1	1	0.368567886
categor_comput	1	1	1	1	0.368567886
collect_dataset	2	2	4	4	-0.460550044
introduct_modern	1	1	1	1	0.368567886
keyword_arab	1	1	1	1	0.368567886
search_us	1	1	1	1	0.368567886
size_document	1	1	1	1	0.368567886
system_page	2	2	4	4	-0.460550044
time_document	1	1	1	1	0.368567886
charact_number	1	1	1	1	0.368567886
document_select	1	1	1	1	0.368567886
effect_method	1	1	1	1	0.368567886
languag_complex	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
method_take	2	2	4	4	-0.460550044
signific_amount	3	2	6	9	-0.289667974
analysi_classif	2	1	2	4	0.539449956
appli_comput	1	1	1	1	0.368567886
document_obtain	3	3	9	9	-1.289667974
main_focu	1	1	1	1	0.368567886
model_outperform	2	2	4	4	-0.460550044
probabl_class	1	1	1	1	0.368567886
represent_method	1	1	1	1	0.368567886
term_mean	2	1	2	4	0.539449956
word_singl	1	1	1	1	0.368567886
algorithm_present	2	2	4	4	-0.460550044
approach_comput	3	3	9	9	-1.289667974
corpu_includ	4	2	8	16	-0.118785904
data_analyz	1	1	1	1	0.368567886
data_experi	1	1	1	1	0.368567886
depend_word	1	1	1	1	0.368567886
describ_method	1	1	1	1	0.368567886
distribu_tion	1	1	1	1	0.368567886
frequenc_featur	1	1	1	1	0.368567886
good_accuraci	3	1	3	9	0.710332026
human_behavior	1	1	1	1	0.368567886
lucen_apach	1	1	1	1	0.368567886
main_advantag	1	1	1	1	0.368567886
saudi_arabia	1	1	1	1	0.368567886
tag_tag	1	1	1	1	0.368567886
us_automat	1	1	1	1	0.368567886
word_inform	1	1	1	1	0.368567886
analysi_identifi	1	1	1	1	0.368567886
common_attribut	1	1	1	1	0.368567886
exampl_tweet	8	1	8	64	1.564742375
model_find	2	2	4	4	-0.460550044
normal_term	1	1	1	1	0.368567886
polar_text	1	1	1	1	0.368567886
preci_sion	1	1	1	1	0.368567886
system_includ	1	1	1	1	0.368567886
text_therefor	3	2	6	9	-0.289667974
theori_applic	2	2	4	4	-0.460550044

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
us_linguist	3	2	6	9	-0.289667974
word_correspond	5	3	15	25	-0.947903834
neg_train	1	1	1	1	0.368567886
cluster_hierarch	1	1	1	1	0.368567886
document_reduc	1	1	1	1	0.368567886
index_databas	1	1	1	1	0.368567886
stage_text	1	1	1	1	0.368567886
class_repres	1	1	1	1	0.368567886
cluster_evalu	4	2	8	16	-0.118785904
document_includ	1	1	1	1	0.368567886
experiment_studi	2	1	2	4	0.539449956
identifi_topic	1	1	1	1	0.368567886
social_interact	1	1	1	1	0.368567886
user_label	2	2	4	4	-0.460550044
vector_similar	1	1	1	1	0.368567886
word_normal	1	1	1	1	0.368567886
descend_order	1	1	1	1	0.368567886
form_verb	1	1	1	1	0.368567886
semantRepresent	1	1	1	1	0.368567886
stem_gener	1	1	1	1	0.368567886
stem_porter	1	1	1	1	0.368567886
term_contain	1	1	1	1	0.368567886
text_obtain	2	1	2	4	0.539449956
us_languag	3	3	9	9	-1.289667974
us_queri	3	2	6	9	-0.289667974
document_content	1	1	1	1	0.368567886
document_increas	2	1	2	4	0.539449956
evalu_qualiti	2	2	4	4	-0.460550044
filter_us	1	1	1	1	0.368567886
huge_number	1	1	1	1	0.368567886
match_user	2	1	2	4	0.539449956
remov_letter	1	1	1	1	0.368567886
step_preprocess	2	2	4	4	-0.460550044
weight_score	1	1	1	1	0.368567886
word_vocabulari	1	1	1	1	0.368567886
avail_abl	2	2	4	4	-0.460550044
document_distribut	4	2	8	16	-0.118785904
extract_task	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
imag_analysi	1	1	1	1	0.368567886
languag_make	1	1	1	1	0.368567886
obtain_cluster	1	1	1	1	0.368567886
process_identifi	1	1	1	1	0.368567886
significantli_reduc	1	1	1	1	0.368567886
step_extract	1	1	1	1	0.368567886
step_identifi	1	1	1	1	0.368567886
system_term	2	1	2	4	0.539449956
us_graph	2	1	2	4	0.539449956
us_knowledg	1	1	1	1	0.368567886
approach_machin	1	1	1	1	0.368567886
independ_assumpt	1	1	1	1	0.368567886
method_mean	3	3	9	9	-1.289667974
number_sampl	3	2	6	9	-0.289667974
origin_dataset	1	1	1	1	0.368567886
problem_automat	2	1	2	4	0.539449956
twitter_stream	1	1	1	1	0.368567886
user_system	2	2	4	4	-0.460550044
data_distribut	1	1	1	1	0.368567886
document_call	3	3	9	9	-1.289667974
avail_document	1	1	1	1	0.368567886
calcul_distanc	1	1	1	1	0.368567886
input_train	3	2	6	9	-0.289667974
base_emot	2	2	4	4	-0.460550044
develop_evalu	1	1	1	1	0.368567886
featur_evalu	3	3	9	9	-1.289667974
linear_function	1	1	1	1	0.368567886
particular_domain	1	1	1	1	0.368567886
randomli_chosen	2	2	4	4	-0.460550044
valu_measur	1	1	1	1	0.368567886
algorithm_mine	1	1	1	1	0.368567886
analyz_tweet	1	1	1	1	0.368567886
imag_video	2	2	4	4	-0.460550044
measur_find	2	2	4	4	-0.460550044
number_retriev	1	1	1	1	0.368567886
process_automat	1	1	1	1	0.368567886
process_take	1	1	1	1	0.368567886
requir_user	3	2	6	9	-0.289667974

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
rule_combin	3	1	3	9	0.710332026
signific_word	1	1	1	1	0.368567886
appli_stem	1	1	1	1	0.368567886
applic_servic	1	1	1	1	0.368567886
base_structur	1	1	1	1	0.368567886
calcu_late	1	1	1	1	0.368567886
correspond_sentenc	4	2	8	16	-0.118785904
experi_text	2	2	4	4	-0.460550044
featur_calcul	1	1	1	1	0.368567886
interact_user	4	1	4	16	0.881214096
map_word	1	1	1	1	0.368567886
order_understand	1	1	1	1	0.368567886
search_retriev	1	1	1	1	0.368567886
token_remov	3	1	3	9	0.710332026
us_gener	2	2	4	4	-0.460550044
vector_train	3	2	6	9	-0.289667974
weight_obtain	1	1	1	1	0.368567886
class_posit	8	1	8	64	1.564742375
commun_comput	1	1	1	1	0.368567886
consist_phase	1	1	1	1	0.368567886
correctli_identifi	2	2	4	4	-0.460550044
document_form	2	1	2	4	0.539449956
experi_dataset	1	1	1	1	0.368567886
knowledg_resourc	1	1	1	1	0.368567886
languag_social	2	1	2	4	0.539449956
system_measur	1	1	1	1	0.368567886
text_method	1	1	1	1	0.368567886
word_chang	1	1	1	1	0.368567886
engin_issu	1	1	1	1	0.368567886
identifi_us	1	1	1	1	0.368567886
determin_number	1	1	1	1	0.368567886
normal_word	1	1	1	1	0.368567886
text_identifi	1	1	1	1	0.368567886
world_congress	1	1	1	1	0.368567886
comparison_method	1	1	1	1	0.368567886
document_improv	2	1	2	4	0.539449956
precis_calcul	1	1	1	1	0.368567886
stem_document	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
centroid_cluster	1	1	1	1	0.368567886
data_approach	1	1	1	1	0.368567886
indic_word	1	1	1	1	0.368567886
interest_user	1	1	1	1	0.368567886
punctuat_remov	1	1	1	1	0.368567886
set_featur	1	1	1	1	0.368567886
twitter_facebook	1	1	1	1	0.368567886
variou_techniqu	1	1	1	1	0.368567886
word_ad	1	1	1	1	0.368567886
accu_raci	3	2	6	9	-0.289667974
algorithm_accuraci	1	1	1	1	0.368567886
algorithm_consist	1	1	1	1	0.368567886
algorithm_naiv	1	1	1	1	0.368567886
collect_collect	2	1	2	4	0.539449956
compar_us	2	1	2	4	0.539449956
comparison_document	2	2	4	4	-0.460550044
comparison_precis	1	1	1	1	0.368567886
describ_process	1	1	1	1	0.368567886
develop_develop	1	1	1	1	0.368567886
equal_length	1	1	1	1	0.368567886
featur_perform	3	1	3	9	0.710332026
frequenc_corpu	1	1	1	1	0.368567886
http_lucen	1	1	1	1	0.368567886
keyword_queri	4	2	8	16	-0.118785904
measur_estim	1	1	1	1	0.368567886
model_take	1	1	1	1	0.368567886
obtain_word	2	2	4	4	-0.460550044
probabilist_classifi	3	2	6	9	-0.289667974
process_activ	1	1	1	1	0.368567886
score_comput	1	1	1	1	0.368567886
step_select	1	1	1	1	0.368567886
system_learn	1	1	1	1	0.368567886
term_relev	2	1	2	4	0.539449956
word_structur	1	1	1	1	0.368567886
word_type	1	1	1	1	0.368567886
algorithm_classif	1	1	1	1	0.368567886
base_mean	1	1	1	1	0.368567886
clean_data	2	1	2	4	0.539449956

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
document_creat	2	2	4	4	-0.460550044
document_remov	1	1	1	1	0.368567886
extract_name	1	1	1	1	0.368567886
func_tion	1	1	1	1	0.368567886
issn_issn	1	1	1	1	0.368567886
matrix_term	1	1	1	1	0.368567886
meaning_inform	1	1	1	1	0.368567886
method_detect	1	1	1	1	0.368567886
output_process	2	2	4	4	-0.460550044
system_avail	4	2	8	16	-0.118785904
system_detect	2	1	2	4	0.539449956
text_sourc	1	1	1	1	0.368567886
time_base	1	1	1	1	0.368567886
remov_step	3	3	9	9	-1.289667974
parent_node	1	1	1	1	0.368567886
perform_obtain	1	1	1	1	0.368567886
word_lead	1	1	1	1	0.368567886
appear_text	1	1	1	1	0.368567886
cluster_repres	1	1	1	1	0.368567886
inform_servic	1	1	1	1	0.368567886
predefin_class	2	1	2	4	0.539449956
applic_inform	1	1	1	1	0.368567886
becom_increasingli	1	1	1	1	0.368567886
classif_data	2	2	4	4	-0.460550044
inform_social	1	1	1	1	0.368567886
lower_number	1	1	1	1	0.368567886
techniqu_featur	1	1	1	1	0.368567886
affix_word	2	1	2	4	0.539449956
classif_arab	1	1	1	1	0.368567886
dataset_avail	2	1	2	4	0.539449956
dataset_creat	1	1	1	1	0.368567886
featur_semant	1	1	1	1	0.368567886
function_similar	3	1	3	9	0.710332026
perform_step	2	2	4	4	-0.460550044
repres_singl	1	1	1	1	0.368567886
step_gener	1	1	1	1	0.368567886
time_number	1	1	1	1	0.368567886
token_us	3	2	6	9	-0.289667974

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
vector_number	3	2	6	9	-0.289667974
approach_pattern	1	1	1	1	0.368567886
contain_topic	2	2	4	4	-0.460550044
content_type	1	1	1	1	0.368567886
degre_similar	1	1	1	1	0.368567886
form_inform	2	1	2	4	0.539449956
improv_us	1	1	1	1	0.368567886
inform_form	1	1	1	1	0.368567886
interest_pattern	1	1	1	1	0.368567886
model_produc	1	1	1	1	0.368567886
present_text	1	1	1	1	0.368567886
score_precis	1	1	1	1	0.368567886
stem_exampl	2	2	4	4	-0.460550044
text_appli	2	2	4	4	-0.460550044
valu_chosen	1	1	1	1	0.368567886
automat_emot	1	1	1	1	0.368567886
base_perform	2	2	4	4	-0.460550044
cluster_topic	5	3	15	25	-0.947903834
contain_specif	1	1	1	1	0.368567886
data_describ	1	1	1	1	0.368567886
data_estim	1	1	1	1	0.368567886
data_user	2	1	2	4	0.539449956
electron_commun	1	1	1	1	0.368567886
exist_techniqu	2	1	2	4	0.539449956
frequenc_text	1	1	1	1	0.368567886
languag_stem	1	1	1	1	0.368567886
method_topic	2	2	4	4	-0.460550044
model_increas	1	1	1	1	0.368567886
object_base	1	1	1	1	0.368567886
produc_cluster	1	1	1	1	0.368567886
rela_tionship	1	1	1	1	0.368567886
signific_number	2	1	2	4	0.539449956
similar_semant	1	1	1	1	0.368567886
system_creat	1	1	1	1	0.368567886
time_accuraci	1	1	1	1	0.368567886
topic_us	4	3	12	16	-1.118785904
train_word	5	3	15	25	-0.947903834
word_valu	3	1	3	9	0.710332026

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
semant_concept	2	1	2	4	0.539449956
languag_form	1	1	1	1	0.368567886
stemmer_compar	1	1	1	1	0.368567886
distribut_class	2	2	4	4	-0.460550044
binari_valu	2	1	2	4	0.539449956
consid_number	1	1	1	1	0.368567886
document_therefor	1	1	1	1	0.368567886
gener_train	1	1	1	1	0.368567886
higher_weight	1	1	1	1	0.368567886
method_present	1	1	1	1	0.368567886
word_preposit	1	1	1	1	0.368567886
approach_select	2	2	4	4	-0.460550044
assign_cluster	3	1	3	9	0.710332026
cluster_compar	1	1	1	1	0.368567886
form_form	1	1	1	1	0.368567886
grow_rapidli	1	1	1	1	0.368567886
matrix_contain	1	1	1	1	0.368567886
method_semant	1	1	1	1	0.368567886
term_identifi	1	1	1	1	0.368567886
text_present	1	1	1	1	0.368567886
topic_similar	1	1	1	1	0.368567886
vector_input	1	1	1	1	0.368567886
analysi_comput	2	2	4	4	-0.460550044
analysi_problem	1	1	1	1	0.368567886
approach_compar	1	1	1	1	0.368567886
emerg_technolog	1	1	1	1	0.368567886
exist_algorithm	2	1	2	4	0.539449956
graph_model	1	1	1	1	0.368567886
luhn_automat	1	1	1	1	0.368567886
method_construct	1	1	1	1	0.368567886
order_measur	1	1	1	1	0.368567886
perform_fold	1	1	1	1	0.368567886
remov_nois	2	2	4	4	-0.460550044
similar_approach	1	1	1	1	0.368567886
system_refer	1	1	1	1	0.368567886
tool_provid	1	1	1	1	0.368567886
transact_pattern	1	1	1	1	0.368567886
analysi_knowledg	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
base_appli	1	1	1	1	0.368567886
base_rank	1	1	1	1	0.368567886
classifi_term	1	1	1	1	0.368567886
crucial_role	1	1	1	1	0.368567886
featur_learn	1	1	1	1	0.368567886
field_data	1	1	1	1	0.368567886
function_defin	1	1	1	1	0.368567886
gener_architectur	1	1	1	1	0.368567886
good_featur	2	1	2	4	0.539449956
lemmat_word	1	1	1	1	0.368567886
mathemat_scienc	5	1	5	25	1.052096166
media_content	1	1	1	1	0.368567886
model_machin	1	1	1	1	0.368567886
morpho_syntact	1	1	1	1	0.368567886
number_attribut	1	1	1	1	0.368567886
number_concept	2	1	2	4	0.539449956
perform_dataset	2	2	4	4	-0.460550044
similar_group	1	1	1	1	0.368567886
simpl_probabilist	1	1	1	1	0.368567886
solv_issu	3	3	9	9	-1.289667974
split_text	1	1	1	1	0.368567886
step_find	2	2	4	4	-0.460550044
stochast_gradient	1	1	1	1	0.368567886
text_step	1	1	1	1	0.368567886
third_type	1	1	1	1	0.368567886
type_system	1	1	1	1	0.368567886
cluster_correspond	1	1	1	1	0.368567886
compar_origin	1	1	1	1	0.368567886
sequenc_model	1	1	1	1	0.368567886
rule_defin	1	1	1	1	0.368567886
correspond_featur	1	1	1	1	0.368567886
process_search	1	1	1	1	0.368567886
therrefor_develop	1	1	1	1	0.368567886
word_indic	2	2	4	4	-0.460550044
catégori_us	1	1	1	1	0.368567886
classif_new	1	1	1	1	0.368567886
correspond_topic	1	1	1	1	0.368567886
dictionari_dictionari	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
document_normal	1	1	1	1	0.368567886
engin_retriev	5	1	5	25	1.052096166
inquiri_word	2	2	4	4	-0.460550044
remov_arab	1	1	1	1	0.368567886
requir_addit	2	1	2	4	0.539449956
step_token	2	2	4	4	-0.460550044
us_normal	2	2	4	4	-0.460550044
alphabet_charact	1	1	1	1	0.368567886
base_implement	1	1	1	1	0.368567886
base_pattern	2	1	2	4	0.539449956
base_probabl	1	1	1	1	0.368567886
case_text	1	1	1	1	0.368567886
charact_punctuat	1	1	1	1	0.368567886
engin_inform	2	2	4	4	-0.460550044
extract_phrase	1	1	1	1	0.368567886
initi_step	1	1	1	1	0.368567886
measur_qualiti	1	1	1	1	0.368567886
method_effect	1	1	1	1	0.368567886
model_calcul	4	4	16	16	-2.118785904
particular_case	1	1	1	1	0.368567886
rapid_develop	1	1	1	1	0.368567886
string_number	1	1	1	1	0.368567886
system_make	2	2	4	4	-0.460550044
toulous_franc	1	1	1	1	0.368567886
us_resourc	1	1	1	1	0.368567886
valu_model	1	1	1	1	0.368567886
vector_length	1	1	1	1	0.368567886
word_porter	1	1	1	1	0.368567886
approach_found	2	2	4	4	-0.460550044
call_term	2	2	4	4	-0.460550044
classifi_decis	1	1	1	1	0.368567886
content_tweet	2	1	2	4	0.539449956
databas_commun	1	1	1	1	0.368567886
document_specif	1	1	1	1	0.368567886
human_social	1	1	1	1	0.368567886
inform_analysi	1	1	1	1	0.368567886
linguist_volum	1	1	1	1	0.368567886
method_case	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
model_thu	2	2	4	4	-0.460550044
page_contain	1	1	1	1	0.368567886
partial_support	1	1	1	1	0.368567886
plai_crucial	1	1	1	1	0.368567886
problem_includ	1	1	1	1	0.368567886
scienc_softwar	1	1	1	1	0.368567886
step_approach	1	1	1	1	0.368567886
step_featur	1	1	1	1	0.368567886
studi_comput	1	1	1	1	0.368567886
system_capabl	4	2	8	16	-0.118785904
system_project	2	2	4	4	-0.460550044
techniqu_help	1	1	1	1	0.368567886
techniqu_perform	1	1	1	1	0.368567886
text_twitter	1	1	1	1	0.368567886
time_exampl	1	1	1	1	0.368567886
tool_gener	1	1	1	1	0.368567886
us_preprocess	1	1	1	1	0.368567886
vector_contain	1	1	1	1	0.368567886
document_phrase	1	1	1	1	0.368567886
text_vector	1	1	1	1	0.368567886
algorithm_given	2	2	4	4	-0.460550044
method_word	1	1	1	1	0.368567886
problem_word	2	2	4	4	-0.460550044
spend_time	1	1	1	1	0.368567886
state_model	1	1	1	1	0.368567886
combin_term	1	1	1	1	0.368567886
effici_search	3	1	3	9	0.710332026
enorm_amount	1	1	1	1	0.368567886
further_increas	1	1	1	1	0.368567886
model_addit	2	2	4	4	-0.460550044
model_requir	1	1	1	1	0.368567886
select_topic	3	2	6	9	-0.289667974
term_search	1	1	1	1	0.368567886
test_compar	1	1	1	1	0.368567886
addit_word	1	1	1	1	0.368567886
analysi_applic	1	1	1	1	0.368567886
approach_reli	1	1	1	1	0.368567886
databas_search	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
elimin_stem	1	1	1	1	0.368567886
eval_uation	1	1	1	1	0.368567886
identifi_similar	1	1	1	1	0.368567886
knowledg_document	1	1	1	1	0.368567886
network_machin	1	1	1	1	0.368567886
split_data	1	1	1	1	0.368567886
steinbach_karypi	1	1	1	1	0.368567886
store_file	1	1	1	1	0.368567886
topic_exampl	1	1	1	1	0.368567886
user_data	1	1	1	1	0.368567886
valu_posit	1	1	1	1	0.368567886
accord_word	1	1	1	1	0.368567886
algorithm_determin	1	1	1	1	0.368567886
anger_fear	2	1	2	4	0.539449956
approach_consist	1	1	1	1	0.368567886
approach_outperform	2	2	4	4	-0.460550044
candid_gener	1	1	1	1	0.368567886
choos_number	2	1	2	4	0.539449956
collect_period	2	2	4	4	-0.460550044
compar_number	1	1	1	1	0.368567886
construct_graph	1	1	1	1	0.368567886
count_time	2	1	2	4	0.539449956
descrip_tion	2	2	4	4	-0.460550044
design_algorithm	1	1	1	1	0.368567886
document_view	2	2	4	4	-0.460550044
extract_textual	1	1	1	1	0.368567886
featur_preprocess	1	1	1	1	0.368567886
filter_step	3	1	3	9	0.710332026
help_classifi	1	1	1	1	0.368567886
independ_given	2	1	2	4	0.539449956
knowledg_sourc	1	1	1	1	0.368567886
label_class	2	2	4	4	-0.460550044
method_produc	2	1	2	4	0.539449956
overal_score	1	1	1	1	0.368567886
process_human	2	2	4	4	-0.460550044
step_construct	1	1	1	1	0.368567886
strength_weak	1	1	1	1	0.368567886
test_purpos	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
us_extern	3	2	6	9	-0.289667974
word_divid	2	1	2	4	0.539449956
word_system	1	1	1	1	0.368567886
topic_categor	1	1	1	1	0.368567886
consid_time	1	1	1	1	0.368567886
data_partit	1	1	1	1	0.368567886
exist_document	1	1	1	1	0.368567886
featur_name	1	1	1	1	0.368567886
iter_step	1	1	1	1	0.368567886
label_base	1	1	1	1	0.368567886
media_platform	2	2	4	4	-0.460550044
method_keyword	2	2	4	4	-0.460550044
base_frequent	3	1	3	9	0.710332026
cate_gori	2	2	4	4	-0.460550044
comparison_baselin	1	1	1	1	0.368567886
comput_perform	1	1	1	1	0.368567886
consid_case	2	1	2	4	0.539449956
dataset_method	1	1	1	1	0.368567886
distribut_represent	1	1	1	1	0.368567886
introduc_concept	1	1	1	1	0.368567886
level_document	1	1	1	1	0.368567886
metric_text	1	1	1	1	0.368567886
queri_gener	1	1	1	1	0.368567886
support_grant	1	1	1	1	0.368567886
user_perform	1	1	1	1	0.368567886
variou_approach	1	1	1	1	0.368567886
accuraci_number	2	2	4	4	-0.460550044
affect_user	3	1	3	9	0.710332026
analysi_emot	1	1	1	1	0.368567886
analysi_featur	2	1	2	4	0.539449956
analysi_order	1	1	1	1	0.368567886
averag_sentenc	2	1	2	4	0.539449956
categori_tweet	2	1	2	4	0.539449956
contain_singl	1	1	1	1	0.368567886
discoveri_databas	1	1	1	1	0.368567886
distanc_calcul	2	2	4	4	-0.460550044
experi_featur	1	1	1	1	0.368567886
graph_structur	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
increas_precis	1	1	1	1	0.368567886
keyword_cluster	1	1	1	1	0.368567886
level_system	4	1	4	16	0.881214096
main_sourc	1	1	1	1	0.368567886
neg_affect	1	1	1	1	0.368567886
network_data	1	1	1	1	0.368567886
order_base	2	2	4	4	-0.460550044
process_construct	1	1	1	1	0.368567886
sampl_test	1	1	1	1	0.368567886
step_build	1	1	1	1	0.368567886
us_exampl	1	1	1	1	0.368567886
user_give	3	1	3	9	0.710332026
vector_calcul	2	2	4	4	-0.460550044
word_retriev	2	2	4	4	-0.460550044
written_java	2	2	4	4	-0.460550044
ad_word	2	2	4	4	-0.460550044
extern_sourc	1	1	1	1	0.368567886
featur_posit	1	1	1	1	0.368567886
overal_system	1	1	1	1	0.368567886
stem_languag	1	1	1	1	0.368567886
algorithm_consid	1	1	1	1	0.368567886
automat_creation	1	1	1	1	0.368567886
cluster_unsupervis	2	1	2	4	0.539449956
dataset_compar	1	1	1	1	0.368567886
describ_algorithm	1	1	1	1	0.368567886
effici_cluster	1	1	1	1	0.368567886
full_word	1	1	1	1	0.368567886
model_human	1	1	1	1	0.368567886
punctuat_stop	1	1	1	1	0.368567886
rang_valu	1	1	1	1	0.368567886
remov_frequent	2	2	4	4	-0.460550044
sampl_word	3	3	9	9	-1.289667974
time_text	2	1	2	4	0.539449956
word_affect	1	1	1	1	0.368567886
algorithm_obtain	2	1	2	4	0.539449956
approach_provid	1	1	1	1	0.368567886
calcul_step	1	1	1	1	0.368567886
difficult_languag	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
document_arab	2	2	4	4	-0.460550044
equat_calcul	2	1	2	4	0.539449956
extract_variou	1	1	1	1	0.368567886
famili_member	1	1	1	1	0.368567886
index_base	1	1	1	1	0.368567886
indic_cluster	2	1	2	4	0.539449956
inform_becom	1	1	1	1	0.368567886
manual_extract	1	1	1	1	0.368567886
metric_base	1	1	1	1	0.368567886
miller_wordnet	1	1	1	1	0.368567886
perform_supervis	1	1	1	1	0.368567886
process_design	1	1	1	1	0.368567886
process_part	2	2	4	4	-0.460550044
score_method	1	1	1	1	0.368567886
stream_text	1	1	1	1	0.368567886
system_conclus	1	1	1	1	0.368567886
test_split	1	1	1	1	0.368567886
topic_cover	1	1	1	1	0.368567886
uniqu_featur	1	1	1	1	0.368567886
user_send	1	1	1	1	0.368567886
predict_categori	1	1	1	1	0.368567886
annual_symposium	1	1	1	1	0.368567886
model_respect	1	1	1	1	0.368567886
analysi_time	1	1	1	1	0.368567886
approach_deal	1	1	1	1	0.368567886
base_natur	1	1	1	1	0.368567886
collect_user	2	2	4	4	-0.460550044
creation_literatur	1	1	1	1	0.368567886
data_group	1	1	1	1	0.368567886
document_pars	1	1	1	1	0.368567886
exampl_queri	1	1	1	1	0.368567886
normal_us	1	1	1	1	0.368567886
topic_refer	1	1	1	1	0.368567886
complet_text	1	1	1	1	0.368567886
context_process	1	1	1	1	0.368567886
correl_topic	1	1	1	1	0.368567886
data_chang	1	1	1	1	0.368567886
help_peopl	1	1	1	1	0.368567886

Theme	2018 Tot	2018 Doc	XY	X^2	Distance
inform_thu	1	1	1	1	0.368567886
limit_word	1	1	1	1	0.368567886
method_exampl	1	1	1	1	0.368567886
mine_word	1	1	1	1	0.368567886
model_prove	1	1	1	1	0.368567886
model_singl	1	1	1	1	0.368567886
nois_data	1	1	1	1	0.368567886
perform_find	1	1	1	1	0.368567886
term_process	2	1	2	4	0.539449956
time_make	1	1	1	1	0.368567886
us_collect	2	2	4	4	-0.460550044
us_determin	1	1	1	1	0.368567886
user_accord	1	1	1	1	0.368567886
valu_text	1	1	1	1	0.368567886
word_correl	1	1	1	1	0.368567886
mean_approach	1	1	1	1	0.368567886
current_version	1	1	1	1	0.368567886
martin_porter	1	1	1	1	0.368567886
obtain_relev	1	1	1	1	0.368567886
refer_mean	1	1	1	1	0.368567886
term_obtain	1	1	1	1	0.368567886
approach_discov	1	1	1	1	0.368567886
approach_estim	1	1	1	1	0.368567886
categori_classif	1	1	1	1	0.368567886
classifi_built	1	1	1	1	0.368567886
classifi_simpl	2	2	4	4	-0.460550044
data_initi	1	1	1	1	0.368567886
featur_input	2	2	4	4	-0.460550044
function_determin	1	1	1	1	0.368567886
improv_document	1	1	1	1	0.368567886
measur_emot	1	1	1	1	0.368567886
preprocess_token	1	1	1	1	0.368567886
problem_lack	1	1	1	1	0.368567886
process_complet	1	1	1	1	0.368567886
provid_signific	1	1	1	1	0.368567886
select_group	1	1	1	1	0.368567886
system_stem	1	1	1	1	0.368567886
thousand_document	1	1	1	1	0.368567886

<b>Theme</b>	<b>2018 Tot</b>	<b>2018 Doc</b>	<b>XY</b>	<b>X^2</b>	<b>Distance</b>
train_remain	1	1	1	1	0.368567886
contain_user	1	1	1	1	0.368567886
email_address	1	1	1	1	0.368567886
account_order	1	1	1	1	0.368567886
accuraci_significantli	1	1	1	1	0.368567886
base_lexic	1	1	1	1	0.368567886
base_theori	1	1	1	1	0.368567886
becom_time	1	1	1	1	0.368567886
featur_task	1	1	1	1	0.368567886
limit_term	2	1	2	4	0.539449956
process_break	1	1	1	1	0.368567886
public_date	1	1	1	1	0.368567886
retriev_semant	1	1	1	1	0.368567886
space_number	2	2	4	4	-0.460550044
studi_analysi	2	1	2	4	0.539449956
symposium_document	1	1	1	1	0.368567886
tree_approach	1	1	1	1	0.368567886
apach_core	1	1	1	1	0.368567886



## APPENDIX 5-N

This appendix contains the distance from trend calculations for all the years.

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
machin_learn	8.886	17.008	2.003	14.847	8.961	-3.891	47.813	7.15
text_mine	0.978	7.688	23.842	13.116	14.408	-5.334	-0.351	13.14
comput_scienc	-0.586	13.900	7.082	-2.958	-8.984	-3.163	5.291	7.51
natur_languag	20.024	3.343	2.163	4.532	18.725	-1.505	9.833	11.36
inform_retriev	-0.919	5.411	6.763	-8.768	1.381	-2.897	0.971	5.21
inform_technolog	-5.234	-9.973	10.436	-0.128	-3.438	-4.429	33.639	3.62
data_mine	1.433	0.908	11.523	1.401	8.151	1.324	24.742	4.16
stop_word	15.099	9.865	15.123	5.401	-5.106	0.957	41.340	7.36
text_classif	-6.863	-1.175	-7.597	13.942	14.057	-2.701	46.334	4.96
languag_process	15.924	1.883	15.763	7.067	7.967	-0.777	47.827	6.30
featur_select	-0.085	0.840	-1.837	-8.760	1.460	-3.530	11.913	3.46
text_document	-0.918	18.120	7.604	1.744	21.313	0.761	48.624	8.67
sentiment_analysi	7.656	11.189	1.244	-1.414	19.171	-1.752	36.094	7.54
neural_network	1.230	27.598	12.844	-0.585	8.855	3.887	53.830	9.48
social_media	-4.659	-1.304	-0.276	9.551	1.105	-2.556	1.861	4.51
precis_recal	10.119	-1.009	9.004	12.060	7.924	1.615	39.713	4.70
social_network	21.933	2.844	6.244	4.746	8.822	1.812	46.399	6.74
document_cluster	0.628	6.548	-2.076	-2.420	15.816	-0.461	18.035	6.45
part_speech	-3.428	9.174	-0.956	-2.429	-4.027	-4.068	-5.734	4.66
comput_linguist	19.517	7.218	18.124	4.250	18.167	1.248	68.524	7.40
arab_text	11.258	20.775	0.444	19.386	2.476	10.18	64.524	7.64
topic_model	2.656	-8.171	-5.676	-6.594	-8.007	-2.359	28.152	3.81
term_frequenc	14.775	5.908	4.444	-4.915	-3.524	-0.923	15.766	6.70
text_categor	2.896	-4.516	-2.276	-0.429	-5.501	-3.264	13.090	2.78
support_vector	-2.354	-2.743	-4.116	10.890	-0.383	-4.043	-2.747	5.23
vector_space	-6.686	-1.890	-3.796	3.062	-9.310	-2.923	21.543	3.87
train_data	2.119	-4.196	-1.996	-5.757	-5.915	-3.264	19.009	2.73

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
vector_machin	-3.390	7.898	11.044	24.551	-1.495	-0.435	38.172	9.64
naiv_bay	-0.289	-2.329	-9.116	-3.257	-2.363	5	-6.169	6.10
naïv_bay	0.711	-0.664	-2.996	0.907	-0.241	-1.923	-4.205	1.39
inform_system	-6.363	-7.531	-4.116	-9.249	10.827	-3.923	42.008	2.52
name_entiti	1.174	-5.994	4.444	6.240	-3.998	-1.923	-0.056	4.39
search_engin	-5.464	1.257	-2.036	0.916	7.651	-2.068	0.255	4.07
similar_measur	-6.612	-0.023	-6.756	11.745	4.983	-2.093	22.247	5.39
document_frequenc	-2.437	1.376	-1.676	3.916	1.032	0.223	2.434	2.09
featur_extract	-5.909	-3.462	11.476	13.246	-0.925	-0.461	35.478	4.92
posit_neg	-5.761	10.768	14.196	2.563	-9.524	-4.581	42.266	5.34
base_approach	-3.992	-6.782	-1.996	-6.084	-8.876	-1.606	29.336	2.61
term_weight	13.835	-9.969	13.836	17.252	11.100	-5.556	71.548	3.67
text_process	-5.751	-6.314	-2.036	3.739	-1.383	-1.581	13.326	3.31
text_analysi	-7.677	-7.876	10.996	-8.916	-6.705	-2.777	44.947	2.49
learn_algorithm	2.462	1.459	-0.076	7.739	-3.998	-1.068	6.518	3.61
word_remov	1.693	4.405	2.924	7.247	7.295	-0.777	22.787	2.90
space_model	-0.594	-3.034	2.844	5.085	-0.846	-0.777	2.678	2.70
artifici_intellig	-5.918	-4.196	-8.276	-1.419	-5.797	-2.385	27.990	2.30
cross_valid	8.804	1.085	5.484	-3.241	-0.251	2.077	13.959	3.90
arab_languag	-7.992	13.235	-9.236	-9.584	-7.100	-5.214	52.360	2.48
featur_vector	-4.149	-3.408	-1.316	8.410	-1.544	-4.043	-6.050	4.36
stem_algorithm	-4.149	-2.649	-1.716	-5.249	-2.261	-0.435	16.459	1.57
cluster_algorithm	-5.677	-6.915	-7.396	10.753	-6.666	-4.093	41.501	2.02
word_document	-	-	-	-	-	-	-	-
train_test	12.149	12.009	15.316	13.417	12.675	-1.777	67.344	4.37
scienc_engin	-7.316	4.336	-1.636	-4.073	-1.451	0.539	-9.600	3.62
number_word	-5.066	13.595	-4.116	-5.918	-3.636	-1.752	34.083	3.77

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
word_stem	-6.075	0.178	0.684	-4.748	-1.958	-1.239	13.158	2.47
inform_extract	-0.557	-0.822	2.764	-0.244	10.812	-0.461	11.493	4.16
decis_tree	-5.567	-	10.674	-4.836	10.242	-5.383	-0.948	37.649
document_collect	-4.149	-1.181	1.124	1.744	-1.514	-1.923	-5.899	1.96
semant_analysi	-6.075	10.368	-4.036	-9.412	11.666	-4.264	45.822	2.99
softwar_engin	-2.205	-5.487	0.044	-1.753	-2.909	-0.264	12.575	1.84
document_document	12.066	-8.448	-5.796	13.745	-9.241	-2.119	51.414	3.85
latent_semant	-2.084	-1.221	-2.196	-0.580	-3.129	1.736	-7.475	1.55
invers_document	-3.242	-3.955	-1.476	-2.915	-0.583	-1.119	13.289	1.22
retriev_system	-2.224	-1.728	-1.916	3.583	-1.202	-1.581	-5.067	2.00
depart_comput	-9.149	-7.088	-7.316	-5.079	-6.939	0.052	35.519	2.92
bay_classifi	-3.705	6.085	-3.996	-3.078	-3.119	0.369	-7.444	3.58
test_data	-1.520	-5.714	-4.076	-7.076	-6.978	-1.290	26.653	2.37
cosin_similar	-1.612	10.955	-5.356	-3.573	-1.554	-0.777	23.827	3.48
document_term	-2.705	-2.768	-4.156	-7.745	-0.988	-0.461	18.821	2.39
data_process	-4.677	-3.980	-1.756	-3.086	0.344	-1.119	14.273	1.72
data_set	1.693	1.380	0.884	5.415	-0.777	-0.530	8.065	2.04
data_collect	16.109	2.873	-2.195	1.751	-0.626	0.369	18.280	6.06
rule_base	1.981	2.153	1.365	6.919	4.822	0.565	17.804	2.20
word_list	0.397	-4.408	-3.116	-5.575	-6.080	-1.948	20.730	2.22
train_model	2.628	-1.595	0.045	-1.241	-5.383	0.539	-5.006	2.45
keyword_extract	-2.390	6.538	-0.395	-0.580	3.486	0.761	7.419	2.96
random_forest	-3.233	-8.807	-3.516	-9.412	-6.373	-2.119	33.459	2.81
base_method	-3.159	-5.127	-3.276	-2.241	-4.290	-0.290	18.382	1.54
nearest_neighbor	18.665	-2.300	-3.435	-1.073	-3.777	-5.581	2.499	8.28
latent_dirichlet	-1.770	1.365	-5.116	-1.241	2.173	0.369	-4.219	2.40
stem_word	-0.399	-0.221	-1.636	-2.076	-0.514	-1.581	-6.427	0.72
classif_algorithm	-3.631	-3.994	-2.116	-2.584	-4.060	-1.777	18.162	0.91

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
porter_stemmer	-1.918	-5.235	-6.396	-5.572	-4.070	-0.752	23.943	2.03
speech_tag	-0.251	0.700	0.605	20.228	-2.051	-0.435	18.796	7.70
mine_techniqu	-3.779	-4.635	-1.636	-2.244	-6.251	0.369	18.176	2.15
knowledg_base	-0.019	0.405	1.884	4.911	-0.475	-2.264	4.441	2.23
scienc_technolog	-7.529	-3.300	-3.756	-3.573	0.861	0.710	16.587	2.88
electr_engin	-3.084	7.617	-0.435	0.420	-3.495	-1.948	-0.926	3.74
supervis_learn	-0.251	-3.886	-0.155	19.062	-5.485	-1.264	8.020	8.16
semant_similar	3.925	1.286	2.924	-0.405	9.144	0.369	17.243	3.16
model_base	-4.547	-3.300	-2.556	-5.910	0.002	-0.923	17.233	2.02
base_featur	2.675	0.527	-1.195	6.090	10.651	0.369	19.117	4.05
engin_comput	-2.316	-1.901	-1.876	-1.911	-5.392	-2.119	15.515	1.26
light_stem	-8.992	10.314	-8.876	-3.575	-7.495	-4.093	43.345	2.54
text_file	-2.853	5.725	-0.395	-1.246	3.486	0.761	5.478	2.90
cloud_comput	-3.761	-6.127	-3.356	-1.246	-4.777	-0.461	19.727	1.94
data_analysi	-7.390	15.901	10.116	-8.913	-9.787	-2.923	55.029	3.85
document_contain	0.675	1.326	0.604	-1.417	-3.353	-1.581	-3.746	1.63
dirichlet_alloc	-0.075	-4.527	3.364	0.585	-0.504	-0.290	-1.447	2.31
automat_text	-8.696	0.873	0.524	-1.740	-3.524	-2.119	14.681	3.18
remov_stop	-1.779	-3.102	-2.556	-4.242	-6.080	0.369	17.391	2.00
engin_technolog	-0.936	-5.980	-3.195	-0.741	-0.442	-2.581	13.875	1.92
cluster_cluster	-4.779	-0.994	-2.195	-2.915	-3.948	-1.606	16.438	1.31
document_classif	-2.159	9.218	0.565	0.756	-1.787	0.710	7.303	3.77
word_sentenc	-5.853	-3.048	-4.076	-3.572	-7.797	-0.239	24.585	2.35
model_us	-8.547	-5.581	-5.036	-3.575	4.305	0.369	18.065	4.22
word_frequenc	-2.233	-6.260	-4.916	-1.409	-7.080	-1.264	23.162	2.33
languag_model	-4.316	-2.260	-2.676	-3.412	-1.353	-0.410	14.427	1.28
classif_us	-4.631	1.498	-3.756	-3.079	-6.514	-0.948	17.429	2.58

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>	
solv_problem	1.684	9.671	-1.236	3.420	0.091	0.539	14.170	3.57	
system_us	-4.547	-2.635	-6.236	-4.079	-4.929	-2.093	24.519	1.39	
recal_precis	-8.844	13.354	-8.076	-8.577	-5.929	-0.948	45.727	3.72	
learn_approach	-9.853	10.448	11.556	-2.740	-6.534	-1.948	43.078	3.75	
document_summar	-8.918	-5.581	-3.196	-5.906	-5.070	-0.119	28.789	2.69	
frequenc_word	-7.084	-9.088	-3.596	-8.407	-9.514	-3.606	41.295	2.44	
inform_scienc	-9.464	-4.487	-3.796	-4.738	-5.958	-1.068	29.511	2.52	
word_text	-7.149	0.513	-0.756	-7.247	-2.768	-0.264	17.671	3.17	
frequenc_term	-9.779	-8.994	11.836	-6.575	-5.514	-1.777	44.475	3.26	
frequenc_invers	3.323	-5.620	0.164	-2.903	-3.212	0.103	-8.145	2.90	
improv_perform	-7.233	-9.167	-6.636	10.578	-4.353	-1.290	39.256	3.06	
relev_document	-4.844	-4.300	-0.596	-2.407	-6.514	-3.264	21.925	1.87	
inform_process	-6.464	-3.354	-3.956	-4.573	-5.646	0.369	23.625	2.18	
comput_applic	-4.464	-2.901	-6.556	-3.908	-4.939	-0.948	23.715	1.74	
document_word	2.934	-5.167	1.724	-0.069	-3.241	-0.119	-3.938	2.78	
extract_featur	-4.242	-1.994	-1.596	-3.740	-1.666	-1.290	14.527	1.14	
compar_studi	-3.307	-2.393	-2.916	-1.404	-5.524	-0.461	16.004	1.59	
method_base	-7.010	-8.487	-6.676	-6.575	-3.373	-0.461	32.581	2.70	
select_method	4.239	2.193	-2.476	-2.575	-0.777	-0.435	0.169	2.46	
recal_measur	3.304	-1.980	0.885	3.583	-3.646	-0.923	1.224	2.66	
classif_accuraci	-	10.224	-4.448	-1.476	-2.740	-6.212	-1.948	27.046	3.01
number_time	-7.010	-1.502	-6.756	-6.573	-1.656	-0.461	23.957	2.81	
topic_topic	-4.242	-7.620	-7.036	-5.076	-5.534	-1.290	30.797	2.06	
learn_model	1.860	-4.167	-0.756	-1.736	1.920	0.565	-2.314	2.14	
document_repres	-3.307	-6.260	-5.116	-2.577	-2.626	-0.119	20.005	1.96	

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DEV</b>
languag_text	6.767	11.351	1.085	0.759	1.091	0.539	21.592	4.09
learn_techniqu	-0.233	-4.034	-2.236	-3.241	-2.948	-0.461	13.152	1.41
cluster_method	-3.464	-0.674	-1.356	1.096	-0.221	-1.119	-5.739	1.37
similar_document	-9.844	10.674	-7.036	-6.908	-5.202	-0.948	40.611	3.19
multi_document	-6.927	-9.487	-8.796	-6.738	-3.777	-1.119	36.844	2.89
base_model	-6.779	-5.487	-5.596	-4.412	-6.636	-2.119	31.028	1.58
number_featur	-3.399	0.700	-3.435	6.415	-1.787	-2.119	-3.626	3.43
document_us	-1.307	-2.753	1.844	0.259	-2.343	-1.435	-5.736	1.57
knowledg_discoveri	-3.705	-6.955	-4.276	-6.074	-1.919	-2.264	25.193	1.84
word_appear	-4.168	13.127	-6.516	-7.242	-3.514	-2.119	36.686	3.59
word_featur	-4.010	-6.940	-5.996	-7.573	-4.817	-0.119	29.455	2.46
document_vector	3.388	-1.660	-7.556	-4.577	-7.353	0.710	17.047	4.05
mean_word	-1.251	-2.206	-0.635	0.598	10.397	-1.119	5.784	4.30
extract_text	-7.612	-5.127	-5.276	-8.073	-2.777	-0.290	29.155	2.69
textual_data	-0.159	0.700	-2.155	3.089	-0.939	-2.435	-1.899	1.87
form_word	-8.242	-4.980	-4.476	10.074	-8.110	0.223	35.658	3.37
model_inform	-2.631	-7.127	-1.876	-6.239	-0.090	0.369	17.594	2.85
repres_document	-2.622	-4.527	-1.156	-2.242	-0.051	-2.410	13.007	1.37
model_model	-2.242	4.592	-4.516	-6.906	-4.636	0.565	13.143	3.81
process_step	-2.168	0.444	-4.476	-6.074	-0.909	-1.290	14.472	2.21
extract_inform	-0.557	-2.940	-0.876	-5.241	-4.524	0.369	13.769	2.09
base_similar	-0.168	-1.566	0.964	-1.913	-1.948	0.539	-4.091	1.18
languag_technolog	0.369	6.538	3.884	1.430	1.657	1.052	14.930	2.11
word_base	6.388	0.286	3.404	-2.404	-3.636	-1.777	2.262	3.51
comput_engin	-7.473	-8.714	-8.836	-8.906	-5.373	-1.290	40.591	2.74
scienc_inform	-0.788	-0.980	-1.195	2.591	6.598	-2.606	3.620	3.11
right_reserv	-0.019	0.207	1.045	2.924	4.154	-0.461	7.850	1.68

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
opinion_mine	-2.075	-7.487	-3.476	1.092	-4.636	0.710	15.871	2.99
process_text	-6.316	-5.980	-3.316	-2.904	-1.100	-2.777	22.393	1.85
evalu_metric	-6.936	-4.487	-5.836	-7.407	-7.495	-1.410	33.570	2.14
manag_system	1.601	2.380	-0.955	3.252	-8.353	-0.948	-3.024	3.85
classif_task	4.702	-2.073	-3.236	-2.239	-2.636	0.710	-4.771	2.76
document_number	-1.862	-5.581	-6.276	-2.241	-0.090	0.369	15.680	2.52
stem_process	-6.696	-6.901	-2.756	-0.572	-3.929	0.539	20.313	2.81
test_dataset	-5.705	-8.487	-5.516	-5.242	-7.495	-1.923	34.367	2.06
document_represent	-0.325	-1.980	-1.876	-4.741	-0.807	-0.461	10.189	1.50
noun_verb	-3.242	-0.393	-0.516	-0.412	-0.909	-1.923	-7.395	1.04
weight_term	2.851	-0.753	1.085	-3.241	-3.929	1.394	-2.594	2.47
us_word	3.916	1.340	1.645	4.585	0.940	0.419	12.844	1.55
amount_data	-0.631	1.607	-2.675	0.756	-3.797	-1.435	-6.176	1.86
word_model	-2.094	1.232	0.204	-2.911	-1.333	-2.948	-7.849	1.56
document_matrix	2.443	-1.206	-0.395	6.253	1.525	3.033	11.653	2.44
number_topic	0.693	-2.940	2.644	-1.573	-1.192	0.539	-1.829	1.81
fold_cross	-4.770	-1.073	1.085	-2.404	-4.817	0.369	11.610	2.30
similar_word	-2.622	2.833	-2.155	4.418	2.242	0.394	5.110	2.58
word_vector	0.147	3.459	-0.956	-4.570	-0.475	-0.461	-2.855	2.34
sentenc_document	-2.010	1.380	-0.276	-1.908	-0.929	0.736	-3.007	1.26
featur_space	1.823	0.981	1.285	7.415	-1.919	1.103	10.687	2.79
averag_precis	-0.696	-0.847	-1.195	3.089	-1.051	0.907	0.207	1.53
term_base	-11.159	-8.847	-5.556	-2.239	-4.353	-1.264	33.417	3.49
mean_cluster	0.981	0.833	-0.195	9.247	0.667	0.369	11.900	3.27
logist_regress	-1.019	-1.660	-6.476	-1.404	-3.280	-1.290	15.128	1.91
term_extract	2.286	4.740	3.204	4.094	6.042	0.369	20.734	1.81
collect_document	0.286	-0.314	2.324	-3.074	-1.626	0.710	-1.694	1.72
recal_score	1.823	1.301	2.524	2.931	10.407	0.369	19.355	3.32
us_data	0.388	-3.620	-1.476	-1.572	1.081	-0.264	-5.463	1.54
khoja_stemmer	-1.853	0.740	0.724	-2.073	1.213	0.369	-0.880	1.31
text_content	-7.168	-3.807	-1.356	-2.237	-4.504	-0.777	19.849	2.16
stock_market	-3.325	-7.847	-5.556	-6.407	0.910	-1.119	-	3.05

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
							23.343	
number_cluster	-1.010	-4.527	-0.156	-4.237	-1.939	-0.290	12.158	1.77
morpholog_analysi	-4.622	-5.167	-3.675	-7.743	-6.495	-1.290	28.991	2.05
pattern_recognit	-5.399	-2.433	1.325	-0.572	0.022	-1.290	-8.347	2.13
us_inform	-2.094	-5.167	-7.836	-4.407	-8.221	-1.290	29.014	2.61
data_data	1.693	3.060	-1.596	-2.071	-1.485	0.369	-0.030	1.89
contain_word	4.304	-3.886	-5.036	-6.906	-1.051	3.128	-9.446	4.14
classif_model	-1.242	-0.886	-1.675	2.586	-2.636	-3.435	-7.289	1.90
base_text	3.091	-5.206	-0.236	0.763	-2.202	0.369	-3.421	2.59
step_step	-6.159	-1.753	-1.715	3.090	-2.777	-1.948	11.262	2.70
user_queri	-6.084	-5.847	-2.876	-3.573	-4.485	-1.119	23.984	1.72
model_train	-0.242	-3.073	-0.715	0.926	-2.656	-0.290	-6.050	1.41
train_document	0.156	-6.620	-0.796	-0.904	-2.060	0.369	-9.856	2.36
featur_featur	3.230	0.607	-0.236	0.260	1.081	0.539	5.482	1.11
index_term	-2.557	-3.581	-1.155	-4.242	-4.514	0.369	15.681	1.74
select_featur	-8.084	-6.221	-2.195	-1.236	-6.646	-2.606	26.988	2.58
unstructur_data	-2.168	0.247	-3.996	-8.074	-9.656	-1.948	25.594	3.51
arab_document	-1.251	2.074	-0.635	12.574	2.242	-1.119	13.886	4.81
us_machin	0.082	-3.660	-2.195	-4.409	-4.485	0.539	14.127	2.03
time_consum	-3.622	-1.393	-3.156	-0.736	-1.202	0.052	10.057	1.30
algorithm_base	-2.853	-2.714	1.644	-2.071	-0.343	1.052	-5.284	1.78
analysi_retriev	-7.779	-8.940	-3.715	-5.074	-5.212	-2.119	32.839	2.31
knowledg_manag	-6.242	-6.073	-4.836	-3.738	-5.070	-1.435	27.394	1.63
cluster_base	-0.936	-3.487	-6.596	-7.241	-2.626	-2.948	23.834	2.23
cluster_document	1.055	2.779	10.124	0.598	2.091	0.369	17.015	3.37
learn_method	-4.316	-1.206	-2.916	-1.570	-3.070	-0.948	14.026	1.20
improv_accuraci	-2.631	-3.714	-7.796	-5.906	-4.212	0.394	23.864	2.56
word_mean	-0.325	-0.793	1.805	-2.071	1.881	-0.264	0.232	1.41

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DEV
textual_content	-3.159	-2.339	-5.076	0.260	-0.353	-1.119	11.785	1.80
cluster_us	-4.010	-2.660	-3.996	-1.404	-1.675	0.369	13.376	1.54
human_languag	-2.631	-6.620	-0.675	-5.572	-0.383	-3.777	19.658	2.32
predict_model	-0.251	-7.167	-2.955	-1.904	-1.392	-0.290	13.960	2.36
weight_scheme	-6.084	-5.527	-4.236	-2.738	2.061	-1.119	17.642	2.79
base_system	3.221	1.247	0.885	4.922	2.637	0.369	13.281	1.56
intellig_system	1.990	3.045	-1.675	-2.904	-0.060	0.369	0.763	2.02
collect_data	-7.390	-6.487	-4.476	-5.740	-5.343	-0.290	29.725	2.27
comput_inform	0.147	0.927	-0.036	0.595	-4.919	0.394	-2.892	2.01
mobil_devic	-0.927	-1.206	-4.316	0.428	0.798	-0.606	-5.829	1.66
word_occurr	-5.316	-2.940	-3.316	-2.239	-2.768	-1.948	18.526	1.09
document_text	-0.788	0.887	2.565	2.753	1.213	0.710	7.339	1.19
classifi_classifi	1.518	2.700	0.365	0.593	3.052	1.761	9.988	0.99
cluster_techniqu	-2.010	1.700	-0.356	-0.738	-1.636	0.881	-2.159	1.31
term_occur	-5.010	-1.393	-5.276	-8.409	0.232	-0.461	20.316	3.08
gold_standard	-4.473	-4.206	-5.316	-1.407	-3.070	0.539	17.933	2.00
queri_term	2.064	-3.206	0.004	-0.572	-1.090	-0.119	-2.919	1.56
mean_algorithm	-5.159	-3.393	-4.796	-3.239	0.091	0.710	15.785	2.26
world_wide	-5.547	-9.487	-4.715	-2.906	-4.060	-0.948	27.664	2.62
text_preprocess	1.295	-0.886	3.004	-1.237	0.364	0.539	3.079	1.41
system_develop	-3.325	-6.127	-4.996	-3.242	-3.485	0.369	20.806	2.01
term_term	1.518	6.912	6.284	1.432	-0.485	0.369	16.029	2.86
develop_inform	4.008	-0.753	-2.236	-0.069	-1.060	0.369	0.258	1.95
point_view	-1.159	-5.847	-6.996	-1.740	-4.202	0.369	19.574	2.63
word_root	2.147	0.459	1.645	-1.073	-1.343	0.539	2.374	1.28
recommend_system	-2.010	-2.660	-2.076	-2.404	-0.656	0.369	-9.436	1.07
maximum_entropi	-0.399	-5.073	-2.996	-4.743	-5.343	1.052	17.502	2.45
stem_stem	-2.094	0.927	-3.476	-2.244	-1.919	0.881	-7.924	1.65
error_rate	1.212	2.153	1.285	-1.572	2.617	0.539	6.235	1.35

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
plai_role	-1.251	0.326	-3.236	-2.573	-4.777	-1.777	13.288	1.60
singl_word	-4.686	-1.073	-2.955	-3.738	0.525	0.052	11.876	1.94
prefix_suffix	-4.233	-2.300	-1.476	-8.573	-1.909	-0.119	18.609	2.73
imag_process	1.610	7.006	1.845	0.931	0.949	0.419	12.760	2.23
root_word	-6.622	-6.073	-1.756	-5.241	-0.768	-1.290	21.748	2.40
document_retriev	-5.242	-5.660	-2.715	-4.738	-1.948	-1.290	21.593	1.69
retriev_document	-3.473	-4.487	-0.915	-1.904	-0.939	-0.290	12.009	1.51
spam_filter	-2.325	-8.487	1.285	-3.904	-4.231	0.369	17.295	3.23
occur_document	1.286	-2.487	-1.955	0.927	-1.504	0.248	-3.485	1.46
increas_number	-1.242	-3.620	-1.796	1.596	-0.787	-0.461	-6.309	1.56
system_base	-0.862	-5.300	-2.675	-5.908	-6.504	-1.606	22.856	2.19
classif_method	-2.705	-2.206	-0.996	-2.076	-2.626	0.565	10.044	1.15
comput_system	-4.094	-5.940	-4.276	-8.074	-3.777	0.369	25.793	2.55
inform_gain	0.212	2.286	-1.516	1.423	-1.051	-1.119	0.237	1.41
data_train	1.055	-0.793	1.204	0.264	4.598	-0.461	5.867	1.77
document_similar	4.841	0.340	-0.276	-0.741	-1.192	-0.290	2.683	2.02
us_text	3.453	10.498	1.325	-2.069	1.949	0.539	15.695	3.90
docu_ment	-3.779	-2.393	-5.236	-5.738	-2.353	-1.290	20.789	1.61
sourc_text	2.758	0.340	0.484	0.096	-0.656	0.369	3.391	1.05
full_text	1.675	2.074	5.404	-0.903	1.749	0.369	10.368	1.93
latent_topic	-0.251	-5.768	-5.715	-1.239	-2.353	0.369	14.958	2.45
model_text	1.749	11.124	-0.155	-2.071	1.242	-0.290	11.600	4.29
advanc_comput	-3.399	-4.847	-0.955	-1.906	-4.636	-0.923	16.666	1.61
genet_algorithm	-5.631	-5.753	-4.556	-4.405	-2.787	-1.290	24.422	1.58
knowledg_data	-3.770	-3.847	-2.556	-1.736	-0.475	0.881	11.502	1.71
search_queri	-3.705	-2.167	-1.915	1.430	0.496	-3.093	-8.955	1.85
frequent_word	0.518	0.247	1.045	2.422	-3.636	-0.290	0.305	1.85
inform_text	-4.084	-0.527	-3.276	-2.237	-3.060	0.223	-	1.53

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
							12.961	
term_appear	-0.084	-1.886	2.125	-2.076	-0.777	-0.777	-3.476	1.39
							-	
class_label	-5.705	-2.753	-2.796	-0.906	-3.060	-1.119	16.339	1.58
train_dataset	-2.631	-2.753	-4.236	1.425	-0.353	0.369	-8.179	1.98
number_term	2.906	2.247	2.204	0.590	1.091	0.369	9.407	0.94
probabl_distribut	0.212	4.646	0.125	-1.237	0.384	5.008	9.137	2.40
preprocess_step	-1.251	1.833	-1.476	-0.242	-1.626	-1.264	-4.026	1.20
							-	
porter_stem	-3.547	-6.753	-1.476	-4.076	-0.475	-0.119	16.446	2.31
issn_onlin	-0.705	0.434	-1.036	-3.073	0.496	-0.461	-4.344	1.19
							-	
linguist_featur	-3.936	-1.300	-2.955	-5.409	-1.060	-0.461	15.121	1.75
similar_score	-1.631	-0.793	-0.036	-0.239	1.344	0.539	-0.814	0.94
							-	
text_retriev	0.518	-3.674	-6.036	-0.904	-2.636	0.369	12.364	2.33
evalu_us	1.934	-1.019	0.805	0.097	-0.060	0.369	2.124	0.90
							-	
word_occur	-1.622	-4.113	-2.675	-1.407	-2.353	-0.290	12.460	1.19
							-	
condit_probabl	-3.473	-2.847	-5.996	-1.738	-3.636	-1.119	18.808	1.56
							-	
data_engin	-6.936	0.286	-3.476	-1.738	-2.495	0.539	13.819	2.52
							-	
test_document	-6.936	-6.940	-6.476	-3.071	0.071	0.369	22.983	3.16
process_manag	-3.631	-1.167	1.325	1.590	-1.051	0.710	-2.224	1.81
							-	
exampl_word	-1.862	-2.433	-5.836	-3.237	-5.636	-0.923	19.927	1.84
languag_resourc	-2.862	0.434	-1.435	2.596	-1.251	0.369	-2.150	1.74
							-	
reduc_number	-2.862	-3.206	-7.796	-1.237	-5.797	0.369	20.530	2.72
base_term	-0.094	-1.940	-1.155	-0.906	-2.192	0.957	-5.330	1.07
approach_base	2.518	5.873	1.244	4.262	1.515	1.907	17.318	1.66
base_classifi	3.999	1.567	-0.796	1.265	-1.636	-0.461	3.939	1.87
process_techniqu	5.304	-0.620	-0.915	0.761	2.374	-0.461	6.443	2.19
fals_posit	4.369	1.527	2.325	2.595	-0.807	-0.264	9.745	1.75
							-	
frequent_pattern	-4.631	-0.753	-4.715	-4.239	-2.929	-2.606	19.873	1.40
comput_commun	7.619	1.114	0.644	1.097	2.101	0.369	12.944	2.50
							-	
extract_keyword	-2.770	-0.433	-1.675	-4.572	-1.626	-0.777	11.853	1.38
							-	
deep_learn	-5.010	-5.354	-0.675	-4.738	-3.343	0.369	18.753	2.21

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
method_us	-4.705	-3.527	-1.476	-4.740	-6.777	-0.290	21.514	2.16
phrase_base	-2.862	-2.674	-1.236	-0.570	-4.202	-2.119	13.662	1.17
document_corpu	-1.094	-0.753	-1.675	-2.743	-4.343	-1.606	12.215	1.20
inform_knowledg	-7.001	-8.620	-2.996	-4.570	0.808	0.369	22.010	3.49
classifi_text	-1.927	-2.660	-0.155	-4.908	-1.343	0.369	10.625	1.73
word_extract	0.916	-4.206	-0.396	1.432	-2.202	0.369	-4.088	1.96
word_count	-2.705	-2.339	-1.195	-1.409	-3.212	0.369	10.491	1.18
retriev_inform	-3.936	-3.393	-1.675	-2.741	-1.485	-0.461	13.692	1.19
list_word	-2.399	-3.073	-1.675	0.092	-4.060	-1.948	13.064	1.28
structur_data	-0.631	1.686	-0.955	-0.736	-1.343	0.369	-1.612	1.02
input_data	-3.094	-3.527	-1.915	-1.736	-1.524	-1.290	13.086	0.83
appear_document	-2.325	-7.527	-3.996	-8.405	-4.787	-1.119	28.159	2.60
train_classifi	0.518	2.326	1.885	3.590	-2.909	-0.461	4.948	2.11
sentenc_sentenc	-0.547	-3.660	-0.395	4.090	-2.343	0.539	-2.316	2.43
classifi_us	-4.010	-8.393	-2.675	-8.906	-3.768	-1.777	29.530	2.74
text_us	1.295	-1.660	1.605	2.590	-1.202	-0.290	2.338	1.55
combin_featur	-7.168	-4.527	0.845	0.427	-5.929	-0.290	16.642	3.21
classifi_train	0.675	1.301	3.045	0.764	5.598	0.369	11.751	1.85
approach_us	-2.019	-2.527	0.605	-3.573	-0.373	0.369	-7.519	1.55
document_queri	-0.482	-6.260	11.636	-5.904	-2.909	-0.461	27.653	3.89
classif_problem	-4.547	-4.433	-3.276	-3.572	-2.626	-1.948	20.402	0.93
object_function	0.601	2.607	2.924	1.262	-1.051	0.710	7.053	1.33
text_corpu	2.601	2.207	8.124	0.264	3.496	0.369	17.060	2.63
process_inform	-1.631	-1.206	-0.395	-3.407	-2.070	-2.435	11.145	0.95
document_base	-2.862	-1.019	1.125	-2.079	-1.353	0.369	-5.821	1.36
infor_mation	-2.557	-1.566	-1.435	-1.236	-3.827	0.369	10.252	1.28
level_featur	0.286	-0.339	1.645	1.595	1.242	8.913	13.341	3.08

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
system_perform	-1.242	-5.073	-5.715	-3.405	-2.202	-1.290	18.927	1.75
program_languag	-2.473	-3.206	-5.756	-5.239	-4.343	-1.948	22.965	1.40
system_applic	-2.168	-5.753	0.325	-4.405	-3.646	-1.290	16.937	2.02
queri_expans	0.601	3.060	7.084	0.432	0.384	1.223	12.783	2.40
word_order	1.906	3.153	1.404	2.596	3.374	0.223	12.657	1.08
algorithm_algorithm	-4.094	-9.940	-6.276	-5.071	-5.202	-2.119	32.701	2.38
text_base	-3.631	-2.660	-1.155	1.593	2.637	-0.461	-3.676	2.20
pattern_mine	0.749	3.927	1.724	0.931	-1.656	0.369	6.044	1.66
issn_volum	-3.927	-0.566	-0.715	-1.071	2.364	-0.461	-4.376	1.83
remov_stem	-0.631	-4.167	-2.236	-3.738	-3.060	0.539	13.292	1.68
evalu_measur	-1.019	0.527	0.605	-0.076	-0.646	-1.093	-1.703	0.69
artifici_neural	1.823	7.592	7.164	0.432	-1.333	-0.461	15.217	3.56
document_featur	-2.242	-1.113	-1.796	-0.071	-1.060	-0.119	-6.400	0.80
view_project	-5.936	-5.620	-2.476	-1.906	-1.192	-2.119	19.249	1.86
model_evalu	-2.862	-3.113	-2.955	-4.407	-2.212	0.881	14.668	1.63
media_text	-1.325	-2.339	-4.516	-6.740	-2.212	-1.290	18.421	1.96
euclidean_distanc	0.981	-2.487	0.724	-2.404	-0.636	0.369	-3.453	1.41
contain_term	0.749	2.927	0.125	0.264	-0.100	0.369	4.333	1.02
algorithm_perform	1.055	1.607	9.964	-0.402	0.384	-0.290	12.317	3.61
extract_us	1.823	4.927	1.484	0.929	-1.221	0.369	8.311	1.86
colleg_engin	-4.010	-1.660	-1.756	-2.904	-2.202	-0.290	12.821	1.15
build_model	0.064	-1.847	0.325	-3.908	-1.051	0.369	-6.048	1.52
linguist_analysi	-4.631	-0.886	-0.036	-2.906	-2.202	-0.461	11.121	1.59
engin_scienc	-3.325	-4.660	-6.476	-2.738	-2.221	0.369	19.051	2.11
contain_document	-1.788	-0.113	3.444	-1.071	1.496	0.369	2.337	1.72
singl_document	1.823	1.153	0.444	1.430	3.354	0.369	8.574	1.00
data_structur	-6.010	-3.660	-7.876	-2.404	-0.333	0.369	19.914	2.93
system_design	-6.242	-3.980	-2.276	-5.738	-2.909	-0.461	21.605	1.99
soft_comput	0.295	-1.886	-2.236	-0.903	0.364	0.907	-3.459	1.18
volum_number	-1.399	-3.113	2.004	2.260	-0.777	0.369	-0.656	1.89

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
relev_inform	-5.631	-2.487	-0.675	-5.740	-3.051	-0.461	18.044	2.10
process_document	-3.862	-3.393	3.684	0.264	-3.768	-1.290	-8.365	2.72
text_featur	-1.019	-1.339	-7.996	-9.575	-5.777	0.539	25.168	3.80
cluster_process	1.749	2.074	0.125	-2.405	7.749	0.369	9.660	3.10
word_us	1.221	-2.206	0.004	2.096	-0.485	0.369	0.999	1.35
classif_process	-4.705	11.073	-7.756	-7.904	-3.051	-0.290	34.778	3.54
word_term	5.064	2.527	1.645	4.926	1.384	2.812	18.357	1.45
perform_test	0.906	1.661	2.325	1.255	0.525	0.052	6.724	0.74
input_output	-2.325	2.740	-0.435	-1.405	-3.343	0.369	-4.401	1.96
user_request	-4.325	10.300	-5.955	-7.073	-2.636	0.369	29.920	3.37
word_embed	0.675	3.473	-0.195	-1.738	1.808	1.274	5.296	1.62
random_field	-0.557	0.527	4.285	1.929	2.769	-1.119	7.834	1.89
featur_base	0.286	-1.527	-0.195	1.596	2.061	0.052	2.274	1.18
public_http	-2.473	-0.246	-3.996	-6.738	-5.353	-0.290	19.096	2.43
word_topic	-1.936	1.207	-4.236	-1.237	0.071	-0.119	-6.249	1.74
number_iter	-0.168	-3.167	0.565	3.427	0.667	0.369	1.692	1.92
unigram_bigram	-4.631	-2.753	0.045	0.425	-0.192	0.369	-6.738	1.91
allow_user	-1.557	-3.714	1.004	-0.904	0.515	0.369	-4.286	1.60
design_implement	0.286	4.927	0.125	4.759	2.354	0.369	12.819	2.05
content_base	-8.242	-3.527	0.285	-3.071	-2.485	0.539	16.500	2.91
semant_index	-3.936	-3.620	-1.155	-7.405	-3.485	-1.290	20.891	2.08
cluster_text	0.064	1.301	-1.036	1.264	-0.504	0.539	1.628	0.86
mathemat_model	-4.631	2.020	-1.516	-3.237	-1.060	-1.290	-9.713	2.06
document_process	-5.094	11.581	-5.955	-6.237	-4.768	0.369	33.266	3.48
algorithm_us	-1.325	-3.206	-4.195	-2.572	-3.787	0.369	14.717	1.56
period_time	-2.019	-2.339	4.124	-0.572	-2.485	-1.290	-4.581	2.28
word_sens	-0.464	-4.660	-2.955	-4.237	-1.192	0.369	13.140	1.89
content_page	0.064	1.020	1.125	-4.239	-0.626	-1.923	-4.579	1.87
wide_rang	1.832	0.153	0.805	1.265	1.354	0.369	5.778	0.58
comput_time	-3.399	-5.980	-4.516	-0.738	-4.485	0.369	18.749	2.23
autom_text	-0.399	-2.980	-4.996	-2.071	-0.343	-1.119	11.907	1.63

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
document_topic	-4.631	-3.433	-6.356	-2.404	-1.192	-1.119	19.134	1.87
syntact_semant	-0.862	-0.019	4.004	2.090	0.384	-1.948	3.649	1.95
method_text	-4.094	-2.660	-6.236	-4.405	-5.777	-1.290	24.461	1.70
unsupervis_learn	-0.325	2.114	-0.635	-2.738	2.364	-0.068	0.711	1.73
discoveri_data	2.443	2.074	1.645	8.753	2.384	0.907	18.205	2.61
informa_tion	-2.019	-5.753	-3.675	-4.071	-4.363	-1.290	21.172	1.49
data_text	-3.927	-3.980	-2.675	-5.572	1.242	-0.461	15.372	2.30
topic_document	0.295	2.513	1.645	1.262	-0.333	-1.435	3.946	1.31
emot_recognit	-3.631	-3.433	-5.195	-4.572	-4.495	0.539	20.786	1.89
perform_us	-3.862	-8.393	-4.516	-2.071	-1.192	-0.461	20.495	2.64
base_word	0.675	3.247	-3.955	-0.573	0.374	-1.290	-1.523	2.18
vector_represent	-2.019	-5.940	-3.195	-3.405	-3.202	0.369	17.394	1.88
us_featur	-1.251	5.686	-0.435	-1.069	-1.051	0.710	2.590	2.44
measur_similar	0.518	-0.339	1.964	2.425	-0.909	-1.290	2.369	1.40
corpu_base	1.286	0.247	0.805	1.427	-0.202	0.394	3.956	0.58
text_word	8.073	2.754	2.605	1.432	3.213	1.052	19.128	2.31
graph_base	1.378	-0.886	-1.195	2.428	0.949	0.369	3.043	1.26
semant_featur	1.527	-3.113	-0.996	-0.404	-3.485	0.223	-6.247	1.77
confus_matrix	-2.168	1.207	0.204	-2.071	-1.060	-0.461	-4.348	1.20
emot_classif	-2.399	3.966	-2.195	0.931	-0.485	0.369	0.186	2.14
network_analysi	-1.631	-3.807	-1.395	-1.071	-3.768	-0.461	12.132	1.30
unstructur_text	0.675	-1.113	-4.796	-1.069	0.071	-0.461	-6.692	1.76
origin_document	-0.251	-1.980	-0.915	-3.404	-2.221	-0.948	-9.719	1.04
proc_conf	0.286	-0.339	-0.155	-2.069	4.183	0.369	2.274	1.88
sentenc_word	1.286	-0.073	-1.476	2.759	1.242	0.736	4.474	1.30
distanc_measur	-1.010	-1.433	-2.516	-4.237	-0.333	0.710	-8.819	1.58
berlin_heidelberg	1.443	-0.113	-0.395	3.924	-0.202	0.539	5.197	1.50
measur_precis	-1.788	1.700	-0.155	-2.409	0.384	-0.777	-3.045	1.36
similar_sentenc	1.518	0.754	4.044	-1.738	-1.909	0.369	3.037	2.02
represent_document	-1.779	-2.113	0.244	0.764	-0.768	0.394	-3.257	1.10
train_corpu	-1.168	-1.527	-3.675	-0.740	-1.051	0.369	-7.791	1.22
uniqu_word	-3.862	-4.206	-3.476	-5.738	-3.485	-2.119	22.886	1.08
data_model	-0.862	0.207	0.125	-0.908	-2.343	-2.264	-6.046	1.01

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
hierarch_cluster	2.138	6.326	-0.155	0.432	0.657	0.369	9.765	2.22
probabilist_model	1.675	0.153	1.484	0.929	0.808	0.710	5.760	0.50
evalu_perform	-1.557	-0.793	2.524	-0.069	-4.797	0.710	-3.981	2.25
model_perform	-0.788	-1.073	-1.915	-2.071	-5.212	-0.461	11.520	1.58
word_level	-1.019	-1.113	2.484	0.097	-3.363	0.369	-2.545	1.77
pattern_base	-2.019	-6.527	-1.915	-2.740	-1.777	0.369	14.610	2.06
classif_techniqu	1.147	0.207	0.125	1.427	-1.626	0.369	1.648	0.98
calcul_us	-0.094	1.380	-0.715	-0.404	1.657	0.369	2.192	0.88
data_sourc	-1.557	-2.660	-0.635	1.926	0.364	0.369	-2.193	1.48
occurr_word	-1.019	-0.886	2.244	-1.404	-4.929	0.369	-5.625	2.16
commun_technolog	0.286	-2.206	-1.155	-0.239	-1.333	1.786	-2.862	1.29
stem_arab	1.823	1.794	0.365	2.259	0.647	0.539	7.426	0.74
inform_commun	-2.084	-7.300	-2.435	0.430	0.667	0.369	10.355	2.78
taken_account	-0.242	-1.886	-0.516	-0.736	-2.051	0.881	-4.549	1.00
fals_neg	-0.936	-0.886	-4.236	-0.071	-1.768	0.881	-7.015	1.60
tweet_contain	-3.399	1.754	-4.715	-2.908	-2.909	-0.461	12.638	2.14
occurr_term	-5.399	-1.886	0.885	-3.908	-0.343	-0.461	11.112	2.18
base_cluster	-3.862	-4.886	-6.036	0.929	-3.626	-0.461	17.942	2.44
reduc_dimension	-2.325	-0.113	-0.756	-1.239	-0.626	-1.290	-6.348	0.69
system_evalu	-1.325	-1.753	0.885	-0.572	-1.192	3.103	-0.855	1.68
word_given	0.443	-0.886	3.924	0.097	1.940	0.539	6.058	1.55
mine_text	-1.019	-2.300	-4.756	-0.236	-2.495	0.539	10.266	1.73
dataset_dataset	-2.019	-2.753	-1.195	0.427	-1.333	-1.606	-8.481	0.97
process_time	-0.482	-2.660	-0.435	0.425	-1.343	0.369	-4.127	1.06
time_period	0.286	-1.339	0.125	0.264	1.334	0.881	1.551	0.83
automat_extract	2.055	8.099	0.365	-0.071	-0.768	0.052	9.732	3.02
dataset_consist	-1.010	-1.566	0.964	-1.069	-0.485	0.369	-2.797	0.88
file_contain	0.527	-1.940	0.085	-1.071	2.384	0.369	0.352	1.35
test_perform	0.906	0.020	0.325	-1.069	2.213	-0.461	1.934	1.05
share_task	-1.557	0.340	-1.675	-2.241	-2.051	-1.777	-8.960	0.85
document_train	0.981	-3.433	-1.915	0.761	-7.212	0.369	10.450	2.91
word_cluster	0.518	-2.581	-4.195	-0.736	0.515	0.369	-6.111	1.79
user_gener	1.286	0.527	0.085	0.428	-0.231	0.369	2.464	0.47
base_semant	2.055	2.301	0.845	0.759	1.779	-0.290	7.448	0.90

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
statist_analysi	-5.084	-0.339	-3.476	-2.570	-0.051	0.539	10.981	2.04
transact_knowledg	-1.547	-2.660	-0.675	-4.071	1.242	-0.435	-8.146	1.69
model_built	1.221	-0.019	0.045	2.598	-0.636	0.052	3.260	1.07
twitter_user	-1.251	5.419	0.365	1.761	-0.192	0.369	6.471	2.14
model_document	1.823	1.301	1.645	1.427	2.627	-1.119	7.704	1.16
retriev_relev	3.147	0.434	-1.715	1.264	-1.051	-0.290	1.789	1.60
gram_gram	-4.010	-3.886	-0.915	-5.404	-2.060	0.369	15.907	1.98
speech_recognit	-1.168	1.646	0.125	-0.236	0.091	0.369	0.827	0.83
linear_regress	-1.631	-3.393	-1.155	-0.404	-1.768	-1.290	-9.641	0.91
data_point	-1.862	-3.113	-3.476	-2.237	-0.919	-0.461	12.067	1.08
common_word	-1.788	1.247	-0.155	-2.904	-3.353	0.369	-6.586	1.70
signal_process	-0.019	-0.113	1.645	-1.069	4.334	0.369	5.146	1.75
calcul_similar	1.518	-0.339	-0.236	-2.074	-2.626	0.369	-3.389	1.41
system_system	1.823	-2.847	-3.435	-3.405	-3.919	0.369	11.415	2.18
model_data	-2.779	-2.660	-4.516	-1.903	1.384	0.539	-9.934	2.02
standard_arab	-3.936	-3.660	-1.675	-1.237	-7.060	0.369	17.200	2.38
perform_system	-3.936	-7.167	-2.675	-0.736	0.384	-1.119	15.250	2.49
valu_calcul	-4.631	-4.073	-1.155	-2.239	-0.475	-1.290	13.863	1.54
cluster_similar	2.369	-0.793	-0.915	-0.572	-0.636	-1.290	-1.836	1.22
classif_text	-5.094	-2.980	-5.236	-3.736	-3.202	0.369	19.879	1.86
frequenc_document	-3.094	-2.527	-1.435	1.428	-1.768	0.369	-7.026	1.59
perform_evalu	0.981	2.074	-0.395	-1.904	-0.363	-0.264	0.128	1.24
precis_measur	-1.251	0.473	1.565	0.097	-1.353	-2.119	-2.588	1.26
algorithm_appli	1.518	-0.113	0.204	-1.573	0.525	-0.461	0.100	0.94
text_classifi	2.055	1.794	1.365	-0.908	1.949	0.736	6.990	1.03
model_predict	-4.705	-2.339	-7.756	-1.736	0.232	0.539	15.764	2.88
analysi_method	-1.705	-0.339	-0.556	-1.404	1.384	0.369	-2.251	1.04
algo_rithm	-1.399	-0.433	-0.635	1.593	0.667	-0.290	-0.498	0.96
distribut_topic	-4.399	-2.113	-1.395	-0.237	-2.495	-0.290	10.929	1.43
classifi_document	-1.399	1.301	3.164	0.761	1.242	0.369	5.438	1.35
text_collect	0.138	1.527	-0.915	1.591	1.232	0.369	3.942	0.89
extract_term	-2.325	0.153	-5.715	-2.736	-0.626	0.369	10.881	2.10

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
repres_vector	-1.325	0.754	1.125	3.759	-1.919	-1.948	0.446	2.05
word_categori	-3.557	-3.980	-0.435	-0.903	0.647	-0.461	-8.688	1.71
accuraci_precis	-1.788	-0.886	-0.395	-0.570	-0.221	0.369	-3.493	0.66
punctuat_mark	0.981	3.927	-1.715	-0.239	0.384	-0.290	3.047	1.74
test_set	-0.251	-0.566	0.885	-2.570	0.486	-2.119	-4.135	1.27
data_extract	1.286	0.114	0.885	1.096	3.203	0.369	6.951	1.00
comput_technolog	1.055	-0.847	-2.435	-1.573	-2.192	0.539	-5.453	1.31
word_represent	1.055	-0.246	0.204	3.262	-0.919	0.881	4.237	1.32
tabl_perform	1.055	0.981	0.885	-0.904	3.627	-1.119	4.524	1.56
neg_exampl	4.767	-0.019	-0.395	0.764	-0.192	-2.777	2.148	2.25
featur_word	-6.936	-5.206	-3.556	-1.236	0.384	0.369	16.182	2.77
rule_mine	-1.936	-3.886	-4.435	-1.405	-1.051	0.369	12.345	1.65
test_test	-1.788	0.527	3.565	-0.409	1.232	-0.461	2.667	1.68
us_porter	1.212	-1.793	-2.155	-2.074	-2.343	-0.290	-7.443	1.29
content_document	-0.019	0.286	1.125	0.260	0.384	0.539	2.575	0.35
word_gener	1.981	-1.847	0.885	1.432	1.779	0.369	4.597	1.29
document_model	0.981	-2.433	-0.516	-1.736	0.374	0.052	-3.279	1.19
gener_word	0.518	-1.339	-0.915	0.097	2.354	-1.435	-0.721	1.32
featur_valu	-0.482	-2.300	0.045	-1.073	-0.051	0.369	-3.492	0.89
highest_accuraci	0.518	0.434	0.365	3.092	0.940	-0.119	5.229	1.04
mine_method	1.823	1.981	2.125	0.430	1.496	2.761	10.615	0.71
develop_model	0.527	-2.886	-1.395	-1.404	-1.485	-1.119	-7.762	0.99
lexic_databas	-6.399	-3.527	-1.915	-2.405	0.525	0.369	13.353	2.36
regress_model	-0.399	-1.113	-4.715	-0.236	-3.060	-2.119	11.642	1.58
tweet_user	-4.631	-2.433	-0.635	-2.071	-0.777	0.369	10.179	1.61
class_class	-0.862	-1.433	-3.435	-2.736	-0.919	-0.461	-9.846	1.08
classif_cluster	-3.094	-4.753	-4.236	-0.069	-3.909	-1.119	17.179	1.71
featur_text	-0.325	-0.886	-0.675	0.096	-1.060	-1.290	-4.141	0.46
stem_stop	-2.325	-0.886	-0.395	-3.404	-6.353	-0.119	13.482	2.16
process_system	-4.325	10.073	-5.955	-6.237	-3.051	0.369	29.273	3.19
process_extract	-1.557	-1.566	-3.715	-1.239	-5.485	-0.461	14.022	1.72
develop_system	-3.557	-3.527	-0.395	-1.237	-5.919	0.539	14.095	2.20

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
implement_us	-1.019	-1.793	0.885	0.427	-2.353	0.710	-3.144	1.27
request_enhanc	0.518	1.567	1.645	-2.407	0.081	-0.290	1.114	1.36
dataset_contain	1.518	-1.113	0.885	-0.069	-3.090	0.369	-1.501	1.51
extract_word	-4.547	-0.886	0.125	-0.404	-0.485	0.369	-5.829	1.65
model_featur	-4.705	0.527	0.365	0.763	-2.051	1.761	-3.340	2.18
comput_vision	-2.936	-0.339	0.365	-2.573	-2.192	-0.461	-8.137	1.26
							-	
us_classifi	-7.168	-3.433	1.645	-5.071	-1.777	0.369	15.436	3.03
train_exampl	-0.399	0.754	-2.955	-1.903	-0.212	0.369	-4.346	1.30
evalu_system	0.369	-1.980	-0.675	-1.570	-2.626	-1.290	-7.772	0.95
word_contain	-1.862	-6.527	1.125	0.097	-1.636	-0.461	-9.263	2.45
							-	
method_appli	-4.862	-5.433	-7.236	-4.572	0.384	0.369	21.350	2.91
							-	
extract_method	-4.325	10.300	-5.955	-6.237	-3.051	0.369	29.500	3.25
							-	
token_token	-4.325	10.300	-5.955	-6.237	-3.051	0.369	29.500	3.25
							-	
repres_text	-4.325	10.300	-5.955	-6.237	-3.051	0.369	29.500	3.25
							-	
retriev_text	-4.325	10.300	-5.955	-6.237	-3.051	0.369	29.500	3.25
							-	
discuss_stat	-0.788	-0.527	1.365	-0.073	-0.051	-1.119	-1.192	0.79
							-	
enhanc_download	-1.251	0.340	0.605	0.264	2.637	0.369	2.963	1.14
							-	
public_stat	0.518	-7.393	-5.476	-2.903	-0.475	-2.606	18.335	2.72
							-	
view_public	1.286	0.661	1.845	3.090	-0.192	0.539	7.229	1.05
							-	
word_dictionari	5.453	-1.566	-1.955	0.432	1.657	0.369	4.388	2.44
							-	
cluster_number	-1.936	-3.660	-2.915	-1.570	-0.485	-0.461	11.027	1.18
							-	
word_repres	4.369	-0.339	1.805	0.764	-3.495	-0.461	2.644	2.39
							-	
correl_coeffici	-3.094	1.020	-0.955	1.097	-0.343	0.369	-1.906	1.44
							-	
statist_machin	-3.325	-3.393	-1.435	-1.404	-0.475	-0.461	10.493	1.20
							-	
porter_algorithm	-1.325	-1.753	-0.155	-0.738	-4.768	-0.461	-9.200	1.54
							-	
twitter_data	-1.557	1.193	2.805	-1.236	1.242	-0.461	1.987	1.55
							-	
mine_algorithm	-2.788	-1.793	-5.236	-1.236	-0.070	-0.461	11.583	1.72
							-	
extract_document	-1.019	1.301	-1.715	0.096	-1.070	0.369	-2.040	1.02
							-	
sentenc_text	1.823	2.074	2.325	3.428	2.920	-0.461	12.110	1.23
							-	
semant_relationship	1.758	0.981	0.285	0.432	1.525	1.248	6.228	0.54
							-	
techniqu_text	-2.705	1.887	1.045	-2.069	-2.909	-0.119	-4.870	1.86
							-	
make_process	4.064	0.114	-0.155	-0.573	2.101	0.369	5.918	1.61

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
human_resourc	0.832	3.020	-2.915	1.598	-0.202	-0.461	1.873	1.85
qualiti_cluster	-5.168	-1.886	-0.635	-3.073	-0.333	-0.290	11.385	1.77
relev_featur	1.369	-0.113	0.365	-2.572	-0.485	0.710	-0.725	1.24
manual_label	-3.862	5.779	0.125	0.432	2.101	0.369	4.943	2.86
represent_model	-2.862	-3.753	-1.195	2.099	-3.343	-0.948	10.003	1.98
word_consid	-1.094	0.794	-0.635	-1.237	-1.192	-1.093	-4.458	0.71
publicli_avail	-1.094	-4.753	-5.195	-5.904	-1.333	0.369	17.912	2.38
automat_index	-2.094	-0.847	0.045	-3.404	1.242	-0.461	-5.518	1.49
springer_verlag	-2.788	1.380	0.204	0.598	1.242	0.369	1.005	1.39
distribut_word	-1.019	-0.980	0.365	-0.738	0.940	-0.461	-1.894	0.73
keyword_text	-1.547	-0.339	2.565	-1.236	-0.475	0.223	-0.810	1.34
word_similar	-0.936	-0.246	-1.915	-0.239	-1.768	0.369	-4.736	0.84
root_stem	-4.168	-1.620	1.085	-0.903	1.525	0.369	-3.712	1.92
measur_accuraci	-3.399	-4.753	-4.195	-2.404	0.384	-0.461	14.828	1.88
cluster_approach	-5.631	-2.433	-4.236	-2.903	-1.192	-0.461	16.854	1.75
classif_approach	-3.862	-1.753	-0.155	-1.071	-0.192	-0.290	-7.323	1.31
interest_includ	-1.862	-2.433	-1.435	-0.069	-3.060	0.369	-8.492	1.22
inform_document	-2.862	-3.433	-0.675	-1.736	-1.202	0.369	-9.540	1.28
mine_inform	3.138	0.661	2.004	-0.738	1.525	0.369	6.958	1.24
document_index	-2.325	-1.660	-4.195	-1.236	-8.777	-0.461	18.654	2.79
featur_document	0.212	0.207	0.885	-0.241	-2.343	0.710	-0.570	1.07
model_repres	-1.019	1.887	-3.996	-2.736	-1.485	-0.119	-7.468	1.87
neg_word	-0.482	-0.980	-2.955	-2.237	-5.485	-0.461	12.600	1.77
sequenc_word	1.518	0.661	0.885	-0.405	0.091	1.761	4.509	0.75
perform_model	0.518	-0.980	-1.155	0.430	0.364	0.710	-0.113	0.75
sens_disambigu	1.286	4.286	0.125	1.428	0.525	0.881	8.532	1.35
data_base	1.823	2.074	0.885	2.265	6.466	0.369	13.882	1.97
model_select	-6.168	-2.566	0.085	-0.404	-6.202	0.369	14.886	2.78
search_space	-5.168	-2.886	-1.476	-0.236	-3.768	0.369	13.164	1.95
tweet_tweet	-3.399	-0.019	-0.435	0.598	-1.212	0.369	-4.099	1.35
predict_stock	-2.399	-1.566	-5.236	-1.071	-0.333	0.369	10.236	1.81
classifi_base	-3.399	-0.753	-1.155	-0.236	-1.343	0.369	-6.518	1.18

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
select_text	-3.862	-2.339	-2.155	-1.572	-0.485	0.369	10.045	1.36
bay_algorithm	0.138	-2.566	-2.155	-2.404	-3.919	-0.290	11.196	1.39
represent_text	-1.862	-0.566	-0.395	3.927	1.374	0.369	2.846	1.83
resourc_evalu	-1.325	-2.980	-4.276	-0.402	-0.475	-0.290	-9.747	1.50
dimension_space	-4.325	-3.206	-0.915	-2.904	-0.475	-0.777	12.603	1.45
main_idea	-1.557	-1.339	-3.955	-2.069	1.505	0.369	-7.047	1.75
tree_structur	-0.788	2.286	-0.155	-0.736	0.667	-0.461	0.813	1.08
algorithm_cluster	-1.788	-0.339	-2.155	0.596	1.788	0.369	-1.530	1.37
word_stop	-1.019	-2.660	0.885	-3.242	0.384	0.369	-5.285	1.58
measur_measur	-0.251	-5.206	-5.195	-5.405	-1.051	0.369	16.740	2.51
extract_sentenc	0.286	0.754	-1.155	2.764	0.667	5.153	8.469	2.03
problem_solv	1.055	-4.073	0.285	-2.404	-0.909	0.539	-5.507	1.81
word_corpu	2.055	-1.793	1.565	2.265	1.486	0.369	5.946	1.38
word_found	1.823	2.301	4.924	2.929	0.657	-0.461	12.174	1.70
base_search	1.823	-0.527	0.845	-0.236	3.213	0.369	5.487	1.28
data_store	0.906	-1.113	2.365	-0.241	0.384	-0.461	1.841	1.12
neg_neutral	-3.325	-0.246	-2.236	-0.736	-0.485	0.052	-6.976	1.21
issu_march	0.981	1.207	-2.915	0.096	-3.636	0.539	-3.729	1.92
search_algorithm	-2.019	-2.566	-2.435	-1.236	-1.787	0.369	-9.675	0.99
recal_valu	-2.019	-1.019	0.365	0.428	-4.495	0.710	-6.030	1.83
techniqu_base	-2.019	-3.300	0.365	-0.071	-2.768	-0.290	-8.083	1.41
data_preprocess	1.055	0.754	5.004	4.595	-0.202	0.369	11.575	2.07
method_perform	1.055	0.513	0.565	-0.236	-1.768	0.369	0.498	0.91
obtain_us	-0.168	-2.886	-0.955	-2.903	-0.333	-0.290	-7.535	1.19
statist_model	-4.631	2.074	2.085	4.092	1.242	-0.290	4.573	2.74
accuraci_rate	-1.862	-2.167	-1.915	-0.402	0.525	-0.461	-6.282	0.99
textual_inform	-3.094	-3.167	-1.395	-2.069	-0.333	-0.461	10.519	1.13
cluster_data	-1.094	-1.886	0.325	-5.237	0.232	-0.461	-8.121	1.90
test_collect	-1.019	-2.113	0.325	2.265	-1.070	-0.119	-1.731	1.38
semant_inform	-0.019	-4.206	-0.155	-1.407	1.242	0.369	-4.178	1.75
assist_professor	-0.482	0.527	-0.635	-0.738	1.213	0.539	0.424	0.73
weight_word	1.064	-1.433	-1.915	0.763	1.242	-0.461	-0.740	1.23
bayesian_classifi	2.601	1.301	5.244	0.764	0.657	0.369	10.936	1.69
given_text	-2.862	-1.566	1.365	0.595	-1.768	-0.461	-4.697	1.44
word_filter	-0.325	-3.113	-0.675	-0.572	-1.192	0.539	-5.338	1.12
content_word	-2.788	0.661	0.325	2.099	2.213	0.539	3.048	1.65
execut_time	-1.019	-2.886	0.125	-4.572	-2.485	-0.119	-	1.66

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
							10.956	
highest_score	-0.019	-4.753	-1.675	-3.404	-0.475	-2.777	13.104	1.65
repres_number	-0.251	0.927	-0.915	-3.404	-2.192	-1.290	-7.125	1.38
analyz_data	1.286	1.434	0.565	-2.069	0.081	-0.264	1.032	1.17
model_gener	2.055	1.060	-1.915	-2.404	1.384	-2.119	-1.940	1.85
repres_word	1.823	0.114	0.605	1.927	-0.060	0.369	4.777	0.79
languag_word	-0.399	-1.113	-0.915	-2.570	-2.768	0.369	-7.397	1.12
topic_word	-0.631	1.020	0.885	-1.404	1.232	0.369	1.471	0.96
represent_word	0.138	-0.980	1.325	-0.071	2.101	-0.461	2.052	1.05
							-	
tweet_us	-1.788	-2.886	-3.195	0.097	-5.343	-0.461	13.576	1.82
base_algorithm	-0.788	-1.660	-2.155	-0.402	-2.777	-2.119	-9.901	0.82
model_paramet	-1.788	0.981	0.125	-1.572	1.223	0.539	-0.492	1.18
							-	
document_sentenc	-1.019	-2.886	-2.675	-3.570	-1.202	0.539	10.814	1.39
content_text	-2.019	-2.113	-2.435	1.260	0.384	0.369	-4.555	1.47
method_automat	-0.251	-2.339	-1.395	-1.405	-1.202	0.369	-6.224	0.87
user_user	0.518	-0.660	-0.635	-2.736	0.364	-0.119	-3.269	1.08
further_process	0.286	-1.566	-1.915	0.764	-1.504	0.369	-3.567	1.09
system_implement	0.286	0.340	0.764	2.428	1.525	0.369	5.713	0.79
process_perform	1.823	1.301	-0.195	0.759	0.374	-0.461	3.601	0.80
springer_berlin	1.527	1.661	1.645	-0.572	-0.475	-0.461	3.325	1.06
accuraci_us	-2.473	-0.793	0.365	-3.071	1.525	-1.119	-5.566	1.57
technolog_comput	-2.936	-0.113	-0.635	-1.570	-0.909	-0.461	-6.624	0.93
volum_page	-2.168	-2.113	-0.195	0.598	0.091	-0.461	-4.248	1.06
featur_gener	0.832	-0.019	0.565	-0.237	-0.333	-0.290	0.517	0.45
perform_measur	-2.631	-3.527	-0.915	-1.236	0.808	0.369	-7.132	1.53
base_analysi	2.369	-1.886	-0.435	-0.237	0.384	-0.461	-0.266	1.28
							-	
amount_inform	-3.862	-0.433	-5.195	-1.903	-1.333	-0.461	13.187	1.77
document_level	-0.862	1.434	-0.395	-0.903	-0.777	0.369	-1.135	0.85
input_document	1.138	2.434	3.045	3.264	0.232	0.369	10.481	1.23
							-	
sentenc_base	-3.094	-5.206	-0.635	-4.738	1.242	-2.119	14.550	2.25
mine_applic	0.443	-1.566	1.125	1.432	-1.646	-0.461	-0.673	1.21
							-	
valu_term	-3.557	-5.206	-4.435	-6.237	-0.475	-0.461	20.371	2.22
							-	
word_cloud	-0.557	-2.433	-2.915	-3.736	-4.485	0.369	13.758	1.70
root_form	-2.788	0.207	0.885	-1.069	0.213	-1.290	-3.842	1.22
improv_qualiti	0.981	-1.339	0.605	-1.570	0.505	0.369	-0.450	1.00

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
societi_inform	1.749	1.020	-3.996	-2.736	-0.475	0.369	-4.069	2.05
us_algorithm	0.749	0.434	1.885	-2.405	-3.919	-0.461	-3.717	1.97
model_develop	1.518	1.434	0.125	0.764	-1.919	0.419	2.341	1.15
previou_studi	0.286	2.527	2.365	1.764	3.920	-0.119	10.744	1.37
posit_word	2.055	0.527	-1.675	-0.903	0.496	-0.461	0.039	1.20
text_contain	1.823	2.074	0.885	2.598	2.667	3.008	13.054	0.70
detect_system	-0.862	-2.660	1.645	-2.738	-0.051	0.539	-4.126	1.61
charact_recognit	-2.094	-2.113	-3.955	-2.904	1.242	0.369	-9.456	1.81
model_test	1.443	1.114	1.365	-1.903	2.940	-0.290	4.669	1.52
frequent_itemset	0.443	-0.113	-2.155	-1.736	0.798	-0.461	-3.224	1.08
measur_perform	-1.019	0.434	-0.395	0.262	-1.202	0.369	-1.552	0.66
document_calcul	-0.019	0.207	1.325	1.264	0.364	0.369	3.509	0.52
gibb_sampl	0.749	2.567	-1.395	-0.903	1.091	-1.264	0.844	1.45
solut_problem	1.055	-1.113	-3.435	-1.405	-1.051	-1.290	-7.239	1.30
avail_onlin	-3.936	-3.339	-0.395	-0.903	-0.909	-0.461	-9.944	1.42
weight_assign	-2.399	0.661	-0.395	-1.736	-1.192	-0.948	-6.010	0.97
model_topic	0.906	0.527	-0.635	0.259	2.101	0.369	3.526	0.82
measur_text	0.906	0.981	1.125	0.430	0.223	-0.461	3.204	0.55
help_user	-2.325	-0.566	-0.395	1.265	-2.495	-2.119	-6.635	1.35
cluster_perform	-2.325	1.434	0.565	0.430	-1.626	0.369	-1.154	1.32
rank_document	-3.557	-4.886	-2.435	-0.402	-5.202	0.369	16.113	2.10
train_sampl	-1.557	0.567	1.524	0.432	0.808	0.710	2.485	0.95
perform_experi	-0.788	-0.073	0.125	1.265	0.940	0.369	1.837	0.67
previou_step	-2.019	-0.246	-2.675	0.598	0.505	-0.948	-4.785	1.22
step_process	-1.251	-0.660	-1.915	-4.239	2.101	-0.119	-6.083	1.91
time_complex	-0.482	0.247	-0.395	-1.069	-0.485	-1.119	-3.304	0.46
number_text	-0.482	-0.793	-2.675	-3.237	-2.919	0.369	-9.738	1.38
us_techniqu	1.286	-2.113	1.605	-0.404	-0.777	-0.461	-0.864	1.26
find_similar	0.286	-1.019	0.565	-0.402	1.213	0.369	1.011	0.71
correctli_classifi	1.055	0.661	-0.756	-1.236	-1.343	0.539	-1.080	0.96
word_process	1.055	-2.113	-1.435	-0.903	-3.919	-0.290	-7.605	1.54
languag_arab	1.823	1.301	1.645	3.756	1.525	-0.461	9.589	1.23
type_data	1.832	-0.793	0.565	-1.570	0.667	0.369	1.069	1.09
data_avail	-0.399	-1.206	0.125	0.763	2.101	-0.290	1.093	1.04
mine_data	-3.631	-3.660	-0.395	-0.903	-1.909	0.369	10.129	1.54
number_user	-2.862	-0.246	-1.915	-1.236	-1.060	0.710	-6.609	1.14
extract_system	0.906	-3.660	0.365	2.432	-0.333	0.077	-0.213	1.84
dimension_vector	-0.094	-2.433	0.885	-3.570	-1.192	0.052	-6.352	1.54
learn_text	-0.325	0.340	0.605	-2.572	0.384	0.369	-1.200	1.10

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
techniqu_appli	-0.325	1.754	1.645	2.099	1.920	0.369	7.461	0.90
semant_mean	-1.788	-0.019	-0.635	-0.903	1.647	-0.461	-2.159	1.05
similar_valu	0.212	2.286	-0.635	0.598	-0.475	0.369	2.355	0.95
charact_word	-1.788	-4.886	-2.155	-2.736	-6.485	-0.461	18.511	2.01
cluster_centroid	-2.019	-3.206	-3.435	-1.903	-0.051	-0.461	11.075	1.26
function_word	0.749	-0.300	0.845	1.432	-1.051	0.223	1.898	0.81
user_search	-0.251	-1.660	-3.715	1.264	-0.051	0.369	-4.044	1.61
word_number	-0.251	-0.886	-0.395	2.262	-0.192	-2.119	-1.581	1.31
order_reduc	-0.251	-2.113	-2.195	-2.237	-1.909	0.369	-8.337	1.04
degre_comput	-0.251	0.754	-0.635	3.094	1.242	-2.093	2.110	1.62
dimension_data	-0.482	-1.566	-2.915	-3.239	-1.909	0.369	-9.743	1.27
exist_method	-0.482	-0.886	0.285	0.598	1.798	0.369	1.681	0.85
extract_data	0.518	1.527	5.124	0.432	1.384	0.710	9.695	1.62
vector_word	0.286	-4.113	-0.955	0.764	2.940	-0.461	-1.539	2.12
knowledg_engin	0.286	0.207	0.885	-0.404	-1.070	-0.461	-0.556	0.63
scienc_depart	1.055	-0.886	0.885	-2.239	-2.485	-0.461	-4.131	1.37
string_match	1.055	-1.886	-0.955	-0.572	-0.475	-0.461	-3.294	0.87
main_problem	3.221	1.981	0.125	0.264	0.808	0.369	6.767	1.12
model_classifi	-1.325	1.301	-1.715	-1.903	0.808	-1.606	-4.441	1.29
measur_us	-1.019	-1.753	-2.195	-2.069	1.525	0.539	-4.973	1.40
origin_text	0.749	-0.246	-0.195	1.264	2.081	0.369	4.021	0.82
statist_inform	0.749	0.434	-2.195	-0.903	-0.626	-1.119	-3.660	0.98
measur_evalu	-0.482	0.754	-1.955	-1.904	-3.626	0.369	-6.846	1.51
find_relev	-0.482	-3.433	-0.635	0.764	-2.777	-0.461	-7.024	1.46
arab_corpu	1.286	1.301	1.645	2.593	-2.768	0.223	4.280	1.70
system_architectur	0.286	2.193	0.885	1.432	0.667	-0.461	5.001	0.84
assign_weight	0.286	1.153	-1.155	0.598	0.374	0.369	1.624	0.70
mean_text	0.286	1.340	-1.675	-5.405	1.242	-1.290	-5.502	2.31
addit_featur	1.055	-2.339	1.845	-0.073	0.091	0.369	0.947	1.29
topic_base	1.823	-0.019	1.365	5.092	0.949	0.369	9.579	1.68
weight_averag	1.823	1.527	0.125	1.094	-0.768	-0.435	3.366	0.98
word_token	0.601	1.434	0.125	0.264	-3.909	-1.290	-2.776	1.74
group_group	-1.631	-1.019	-2.476	-1.236	-0.192	0.369	-6.184	0.93
process_model	-3.631	-0.793	-0.395	-0.237	-1.192	-0.461	-6.709	1.17
score_score	-3.631	-1.433	-1.155	0.596	2.101	0.369	-3.153	1.82
preprocess_text	-0.862	1.434	-1.715	-2.570	1.242	0.369	-2.103	1.49
algorithm_document	-1.862	-4.113	-2.155	-0.903	-1.909	0.369	10.574	1.35
classifi_perform	-3.557	-2.206	-0.915	-1.570	0.525	0.369	-7.355	1.43

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
word_semant	-2.788	-1.339	0.085	1.595	1.384	0.369	-0.696	1.53
analysi_document	-1.019	-2.660	-5.236	-0.903	1.242	-0.461	-9.036	2.02
us_term	-0.251	1.340	1.645	-1.572	0.525	0.223	1.910	1.06
combin_word	-0.251	-1.886	-3.195	-2.069	-2.626	0.369	-9.659	1.26
network_base	0.286	-4.206	-0.635	-2.736	-3.202	0.369	10.125	1.78
time_term	0.286	1.247	0.845	-1.237	1.525	-0.290	2.376	0.94
gener_topic	1.823	-0.566	1.845	2.759	0.525	0.369	6.755	1.12
improv_effici	2.832	-1.019	-0.915	0.432	-1.909	-0.119	-0.699	1.51
data_contain	-0.631	-0.113	1.645	0.598	-3.343	0.710	-1.134	1.58
free_text	0.138	-0.019	3.325	-2.404	-0.333	-0.461	0.246	1.69
linear_combin	-5.094	0.207	-0.635	-2.903	-4.343	-0.461	13.228	2.03
system_extract	-4.094	-1.019	-1.395	-4.071	-3.909	0.369	14.120	1.76
classifi_test	-1.325	-3.886	-2.155	0.764	-2.768	-0.461	-9.830	1.52
tech_niqu	1.675	0.527	1.645	1.428	0.232	-0.119	5.389	0.71
us_train	0.675	0.207	-1.435	0.432	-2.485	-0.290	-2.896	1.13
word_common	-0.557	-2.339	-0.635	-1.236	-3.343	-1.119	-9.229	1.00
count_number	-0.557	-0.339	-2.155	0.596	-1.051	-0.461	-3.966	0.83
evalu_model	-0.557	-1.113	-2.236	-0.236	0.384	-0.461	-4.217	0.82
experi_perform	-2.557	-0.339	-3.195	-0.402	-0.909	-0.290	-7.692	1.16
classif_base	-2.788	-0.566	1.125	-2.903	-3.485	0.223	-8.394	1.74
featur_train	-0.788	1.434	-2.435	0.596	-2.051	0.369	-2.875	1.41
mine_us	0.212	-3.339	0.285	1.265	0.515	0.369	-0.694	1.48
term_text	1.981	-1.566	-0.635	0.264	-5.919	0.369	-5.508	2.48
model_method	-0.019	1.020	-0.395	1.096	2.101	-0.461	3.341	0.93
provid_inform	-0.251	-3.113	-1.395	-4.237	-0.768	-0.461	10.225	1.47
start_point	-1.251	-1.793	0.325	-4.572	0.525	-0.290	-7.055	1.72
process_method	-1.251	-0.113	1.885	-3.073	0.667	-0.461	-2.346	1.54
textual_document	-1.251	-4.433	-1.395	0.264	-1.768	-0.461	-9.044	1.47
applic_text	1.749	1.207	1.085	1.265	-0.919	1.223	5.610	0.86
corpu_document	-1.251	-0.339	0.365	-1.237	-0.626	-0.290	-3.379	0.57
gener_model	0.286	0.434	-0.395	-3.071	-2.202	0.369	-4.580	1.38
group_similar	0.286	-1.433	-1.675	-1.404	-2.192	-0.461	-6.879	0.82
lexicon_base	1.823	3.473	0.365	-2.736	-0.333	0.394	2.985	1.91
valu_document	1.823	0.754	5.164	2.099	0.949	-0.119	10.671	1.68
data_test	-0.316	-0.339	1.645	1.598	-0.475	0.369	2.481	0.90
word_select	1.527	-1.566	-0.635	0.432	-3.051	-0.461	-3.754	1.45
base_topic	-5.936	-0.793	-0.915	2.099	-3.626	0.369	-8.803	2.63

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
human_factor	2.369	-1.339	1.085	0.764	-2.192	0.539	1.226	1.53
predefin_categor	-5.631	1.527	-1.955	0.764	0.808	-0.290	-4.776	2.43
classifi_categor	0.138	0.527	1.244	1.764	0.525	0.369	4.568	0.56
document_total	-2.094	-0.246	-3.435	-0.903	-2.909	0.539	-9.047	1.42
sentenc_length	-2.094	0.887	0.125	-0.904	0.384	-0.461	-2.063	0.97
word_approach	-0.325	-0.246	1.645	-1.237	-0.202	0.539	0.174	0.89
cluster_qualiti	-1.325	-3.433	0.365	0.598	-3.909	-1.290	-8.994	1.71
collect_text	-4.325	-3.339	0.125	-0.572	0.525	0.369	-7.218	1.91
maximum_likelihood	-3.557	-2.753	-3.675	-0.236	1.242	-0.461	-9.439	1.86
measur_valu	-2.557	-1.019	-0.635	-1.404	-1.343	0.369	-6.590	0.88
us_support	-0.788	-2.113	1.125	-2.404	0.374	0.369	-3.437	1.32
word_includ	-1.019	0.340	-0.236	1.432	2.101	0.052	2.670	1.04
document_consid	-1.019	0.207	0.605	-0.570	-2.202	0.369	-2.611	0.97
							-	
empir_studi	-2.019	-3.433	-1.675	-3.736	-1.333	0.369	11.829	1.37
							-	
system_test	-2.019	-4.113	-2.675	-1.570	0.667	-0.290	10.001	1.55
comput_similar	0.749	-0.113	1.645	1.094	-0.475	0.539	3.439	0.71
corpu_text	-0.251	0.207	0.805	-1.405	1.242	0.369	0.966	0.84
morgan_kaufmann	-0.251	-3.113	-1.675	-1.570	-3.051	0.539	-9.120	1.34
stem_us	1.749	0.114	-2.155	-2.404	0.949	0.539	-1.207	1.55
averag_number	0.518	-1.793	-1.395	-0.903	-0.636	0.369	-3.841	0.85
frequenc_count	0.518	-1.206	-3.675	-2.903	-1.192	-0.461	-8.920	1.42
							-	
includ_text	-0.482	-3.980	-2.155	-0.402	-4.626	-0.461	12.106	1.74
techniqu_extract	-0.482	-0.793	1.885	-3.237	-0.060	-0.290	-2.978	1.50
develop_method	-0.482	-0.019	-0.395	0.096	-1.343	0.369	-1.776	0.55
given_word	0.518	-0.660	1.325	-2.071	-0.475	0.369	-0.995	1.08
process_reduc	1.518	-1.113	0.325	-0.904	0.667	0.369	0.860	0.91
train_us	2.286	3.661	1.365	2.764	1.364	-0.290	11.150	1.25
us_simpl	1.286	0.661	-0.155	1.097	1.798	-0.290	4.397	0.75
word_context	0.286	-2.886	-1.915	-2.239	1.242	0.369	-5.144	1.55
wordnet_lexic	0.286	-2.113	-0.635	-3.738	-2.909	-0.461	-9.570	1.43
emot_categor	1.055	2.700	1.845	1.929	1.242	0.369	9.139	0.74
represent_us	1.823	-2.433	0.845	-0.069	0.384	0.248	0.797	1.30
time_word	1.823	2.074	1.645	2.432	-1.343	2.957	9.588	1.38
word_exampl	-1.242	-0.246	-1.675	0.598	-0.475	0.369	-2.671	0.81
issu_issn	-1.936	-2.113	0.125	-2.570	2.101	0.539	-3.854	1.69
posit_fals	-2.399	-2.566	1.125	-0.736	-1.192	0.539	-5.230	1.37
user_tweet	-1.631	-1.019	2.085	0.598	-0.768	-0.461	-1.196	1.22
weight_approach	-2.094	1.340	1.125	-0.904	2.101	0.369	1.936	1.43

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
index_document	-1.094	-0.246	-1.435	0.432	-2.343	0.369	-4.318	1.00
perform_classifi	-2.325	0.527	0.605	-3.570	0.515	-0.461	-4.708	1.61
address_problem	1.443	0.207	0.885	3.264	1.940	0.369	8.107	1.04
document_rank	-3.557	-1.566	-1.155	0.097	0.374	0.369	-5.438	1.40
pattern_analysi	-2.788	-1.886	-1.715	-0.402	-0.333	0.369	-6.757	1.09
us_vector	-0.788	0.434	0.845	-0.236	-1.485	0.710	-0.519	0.84
princip_compon	-0.788	-1.113	0.125	-1.570	-3.051	-2.119	-8.516	1.00
term_number	-2.019	-1.019	-0.155	-1.069	-1.343	-1.119	-6.725	0.55
mine_task	-1.019	0.527	-2.915	-0.402	0.364	-0.461	-3.906	1.14
perform_cluster	-0.251	1.301	0.045	-0.570	-1.051	-0.948	-1.474	0.79
take_advantag	0.518	2.074	2.244	1.430	2.091	0.369	8.726	0.76
algorithm_stem	-0.482	-0.246	1.645	-0.903	4.071	0.369	4.453	1.69
white_space	2.055	7.646	1.645	1.598	2.101	0.369	15.413	2.34
featur_us	1.055	-0.339	-0.915	-1.404	-2.626	0.539	-3.691	1.22
graph_node	4.221	-0.019	1.845	1.432	2.242	0.539	10.260	1.36
weight_calcul	-1.473	1.301	0.605	-2.736	0.525	-0.461	-2.240	1.38
spam_detect	-1.705	-1.566	-0.435	-0.402	2.101	0.369	-1.639	1.28
store_databas	1.138	1.981	1.645	0.761	1.242	0.539	7.306	0.49
mixtur_model	-2.862	-1.886	-0.635	-0.402	-0.051	-0.461	-6.297	0.99
method_evalu	0.906	-2.566	1.365	-1.570	-1.192	-0.461	-3.518	1.37
inform_avail	-3.557	-0.793	0.885	-0.069	-1.343	-2.119	-6.996	1.43
precis_valu	-0.788	0.661	-1.155	1.264	-1.909	0.369	-1.560	1.11
suffix_strip	0.212	-3.113	-1.675	-0.069	-0.192	-0.461	-5.298	1.16
							-	
sourc_inform	-2.019	-0.246	-0.635	-4.071	-2.626	-0.461	10.058	1.38
featur_repres	-1.019	1.301	-0.395	0.094	-1.333	0.369	-0.985	0.88
classifi_featur	2.749	1.661	-2.435	-2.237	0.525	0.369	0.631	1.90
process_word	-1.251	-1.886	0.605	-0.736	1.232	0.369	-1.668	1.10
algorithm_develop	-1.251	-0.339	2.085	0.596	1.525	0.881	3.497	1.11
main_reason	1.749	-0.113	-0.395	-2.903	1.515	0.369	0.222	1.53
base_stem	1.749	-2.339	-3.435	-1.071	0.384	0.369	-4.345	1.76
comput_approach	-0.482	1.114	-1.395	-1.738	1.384	-0.461	-1.579	1.17
given_queri	0.286	-0.660	0.125	-0.239	2.101	-0.290	1.323	0.89
perform_algorithm	1.055	2.527	2.365	1.764	2.788	-0.119	10.381	1.00
stopword_remov	1.823	0.754	2.325	-0.236	1.505	-0.461	5.711	1.03
inform_word	5.453	2.301	0.885	1.265	1.232	0.369	11.504	1.68
model_word	3.369	2.074	1.645	-0.570	0.374	-0.119	6.773	1.37
optic_charact	-2.862	-0.566	-0.915	0.430	1.242	0.369	-2.303	1.31
scienc_applic	-1.094	1.301	1.645	-0.237	-1.768	-1.119	-1.272	1.28
learn_object	-0.325	1.754	0.125	-1.069	-1.485	0.881	-0.119	1.10
automat_evalu	0.443	1.527	-0.395	0.598	-1.202	-1.119	-0.147	0.98

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
vector_featur	-1.557	0.527	-1.715	-1.236	0.808	-0.290	-3.462	0.99
model_compar	-1.788	-2.886	-0.635	-1.903	-0.051	0.539	-6.724	1.18
term_select	1.212	4.020	1.125	0.596	2.101	0.539	9.593	1.20
us_gram	-0.788	1.754	-1.155	-4.572	-0.475	0.369	-4.867	1.93
user_defin	1.981	0.754	1.605	-0.071	0.091	-0.461	3.899	0.89
base_user	-1.019	0.527	1.845	0.929	0.091	-0.461	1.912	0.93
index_process	0.981	0.887	1.125	1.763	1.242	0.223	6.220	0.46
similar_mean	-0.251	0.661	0.045	-1.903	1.525	0.539	0.616	1.05
gram_base	0.518	0.434	-0.675	-2.736	-0.909	0.539	-2.830	1.17
sourc_data	0.518	-3.660	-1.155	-0.236	-2.768	0.539	-6.761	1.60
text_messag	-0.482	-0.019	0.885	-1.572	-2.909	-1.290	-5.388	1.21
technolog_volum	0.518	1.527	3.484	1.432	1.232	0.369	8.562	1.02
analysi_social	1.286	-2.339	-0.155	-3.404	-1.192	-2.119	-7.923	1.54
base_techniqu	0.286	-0.206	0.325	-1.570	2.384	0.369	1.586	1.16
dataset_train	1.286	-0.793	1.764	1.265	-0.485	0.369	3.407	0.95
select_algorithm	1.055	0.700	-1.915	1.265	-1.333	0.881	0.652	1.25
token_stop	2.055	-0.793	1.565	-1.236	1.798	0.539	3.929	1.28
us_wordnet	1.055	0.794	0.125	-0.071	1.242	1.052	4.196	0.50
valu_pair	1.823	-0.019	-0.635	-0.906	-2.051	0.369	-1.420	1.19
base_represent	-1.705	2.074	0.365	2.099	-2.202	0.369	1.000	1.66
facebook_twitter	0.064	0.527	-0.635	0.929	2.101	0.369	3.354	0.84
us_wikipedia	-4.862	1.754	-0.635	-0.402	-0.768	-2.119	-7.032	2.00
class_number	-0.094	-0.246	1.244	1.265	0.384	0.369	2.922	0.59
dimension_featur	-2.094	-3.433	1.125	-0.069	-0.475	0.369	-4.578	1.54
extract_techniqu	1.443	1.301	0.365	1.763	-1.768	0.539	3.643	1.17
model_automat	0.443	-1.793	0.365	-1.236	-4.343	0.369	-6.195	1.72
euopean_languag	-1.557	-1.206	1.125	-0.570	2.101	-0.461	-0.568	1.29
text_repres	-0.788	-2.660	0.885	-2.069	-2.768	0.369	-7.031	1.43
comput_network	-1.788	-2.113	0.125	-2.404	-2.192	0.369	-8.003	1.13
method_combin	0.212	0.340	0.125	-2.903	-0.475	-1.119	-3.819	1.13
word_match	-1.788	-1.339	0.125	0.264	-1.051	-1.290	-5.079	0.77
algorithm_find	-0.788	-2.339	0.605	1.432	-2.768	-2.119	-5.978	1.57
data_consist	-0.788	2.434	1.645	1.595	0.384	-0.461	4.808	1.18
featur_includ	-0.019	0.114	1.645	-1.736	-0.626	0.369	-0.255	1.02
form_stem	-0.019	-0.113	-0.395	1.432	-1.485	-0.461	-1.041	0.86
token_process	-2.019	-2.339	0.605	-0.236	0.232	-1.290	-5.047	1.11
weight_vector	0.981	-0.246	-0.395	0.929	0.667	-0.119	1.816	0.57
consist_document	-1.251	1.527	-2.155	-1.236	-4.919	-0.461	-8.494	1.93
sentenc_structur	-0.251	0.207	-3.195	2.099	-2.202	0.369	-2.973	1.74
system_consist	-1.251	-0.793	0.885	-1.237	-1.768	-1.290	-5.454	0.85
test_model	-1.251	-2.660	1.365	-1.903	-0.909	0.369	-4.989	1.35

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
analysi_machin	0.518	1.527	0.885	0.264	0.505	0.369	4.067	0.43
frequenc_weight	-0.482	0.927	0.605	1.265	0.808	0.369	3.491	0.55
measur_calcul	1.286	-3.660	1.645	-0.402	-1.343	-2.948	-5.422	1.98
workshop_comput	1.286	0.567	-0.395	0.430	0.808	0.369	3.064	0.51
text_dataset	0.286	0.794	1.645	0.763	-0.192	0.539	3.835	0.56
us_equat	0.286	-1.339	1.125	-1.236	1.223	0.369	0.427	1.02
collect_corpu	0.286	-1.019	-1.476	-0.570	0.667	0.369	-1.744	0.78
lexic_featur	1.055	-0.246	0.365	-2.239	-1.909	0.369	-2.606	1.22
mean_valu	1.055	1.207	1.125	2.929	1.515	0.539	8.370	0.74
model_extract	1.823	-1.566	0.125	0.764	2.940	0.223	4.309	1.41
perform_analysi	3.295	-0.433	0.125	1.265	2.101	0.369	6.721	1.27
corpu_word	0.064	-0.019	-2.155	-0.069	2.101	0.539	0.460	1.25
model_system	-1.631	-1.339	-2.435	1.598	2.101	0.369	-1.338	1.69
us_rule	0.138	-0.886	0.885	-1.736	1.384	0.369	0.152	1.05
concept_document	2.138	-0.886	0.885	-0.069	0.525	-0.461	2.132	0.99
categori_categori	-1.094	0.754	-0.915	-0.237	1.242	0.369	0.119	0.85
length_document	0.675	0.527	1.365	1.264	1.232	0.539	5.602	0.36
north_chapter	-2.557	0.527	0.125	0.432	-2.060	-2.119	-5.652	1.32
overal_perform	-2.557	1.434	-1.155	0.764	-1.051	0.539	-2.025	1.37
document_length	-0.019	0.981	0.125	-1.237	-0.909	-0.461	-1.521	0.73
cluster_accuraci	-1.251	-2.566	-0.635	-2.736	-1.626	0.369	-8.446	1.07
good_perform	-1.251	-4.206	0.885	-1.903	0.525	-2.119	-8.069	1.71
list_stop	-1.251	-3.113	-0.155	-2.736	1.808	0.369	-5.079	1.73
index_html	0.518	-1.886	-1.395	-2.069	-0.768	0.369	-5.232	1.02
algorithm_implement	2.286	1.247	1.645	1.596	-1.333	0.369	5.809	1.18
convert_text	0.286	-1.019	-0.395	-0.904	-2.192	-1.290	-5.515	0.76
word_elimin	0.286	0.207	-0.395	-1.237	-2.768	0.369	-3.538	1.12
improv_text	0.286	-0.246	1.325	-2.570	-1.909	-0.290	-3.404	1.31
collect_tweet	2.055	3.434	1.565	2.596	0.384	0.881	10.914	1.02
count_word	1.055	-0.793	0.125	-4.570	-3.060	0.369	-6.875	2.01
extract_knowledg	1.055	-1.339	1.125	0.432	1.667	2.590	5.528	1.21
statist_signific	1.823	-0.019	2.484	1.598	-1.333	0.710	5.263	1.27
emot_text	-2.631	-2.339	0.125	-1.236	-0.333	0.369	-6.046	1.16
knowledg_extract	1.369	2.207	1.645	0.097	1.242	1.223	7.784	0.63
term_queri	-2.862	-0.339	-0.435	1.265	2.101	-0.290	-0.561	1.56
semant_evalu	-2.094	-4.113	-2.675	1.265	-0.475	0.369	-7.723	1.85
method_extract	-1.325	0.527	-1.155	-0.903	-1.051	0.539	-3.367	0.78
overal_accuraci	-2.325	-0.246	0.885	-2.736	0.374	0.369	-3.680	1.40
repres_term	-0.788	0.340	-0.395	0.432	-0.192	0.539	-0.064	0.48
approach_automat	0.212	0.207	2.085	0.931	0.525	-0.119	3.841	0.72
automat_classifi	0.212	1.754	1.004	0.764	1.242	0.369	5.346	0.52

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
method_describ	-0.019	0.661	0.125	-2.071	-0.475	0.369	-1.412	0.89
languag_specif	-0.251	1.301	-1.675	-1.736	0.374	0.369	-1.620	1.11
node_repres	-0.251	0.981	-1.675	0.931	-1.909	-0.461	-2.385	1.13
topic_text	1.749	0.434	0.365	0.432	0.232	1.223	4.435	0.55
difficult_task	0.749	1.981	0.605	0.264	0.949	0.881	5.429	0.53
access_inform	2.518	2.661	3.045	2.099	1.232	0.369	11.922	0.92
depart_inform	-0.482	1.301	-1.195	-0.402	-2.909	-0.777	-4.465	1.24
naïv_bayesian	-0.482	0.567	-1.195	2.099	-1.333	0.539	0.194	1.19
queri_word	0.518	-0.019	-2.435	-2.404	-0.333	0.369	-4.306	1.23
caus_effect	-0.482	-1.566	-0.635	0.097	-1.626	0.539	-3.673	0.79
comput_base	0.286	-0.339	-0.395	-0.069	-0.485	0.369	-0.634	0.33
fine_grain	1.286	0.527	-0.635	0.430	-4.202	0.539	-2.054	1.81
measur_defin	1.286	0.340	0.125	2.430	0.949	0.369	5.499	0.78
text_written	1.286	-1.753	-0.155	0.432	0.808	0.369	0.986	0.96
distribut_document	1.055	-1.660	0.845	-0.570	0.667	0.369	0.705	0.95
lower_case	1.055	-1.339	0.605	0.264	0.374	0.369	1.326	0.74
recognit_system	1.055	0.981	-0.915	-2.570	-1.768	-0.461	-3.678	1.33
semi_automat	1.055	-2.753	1.125	0.432	0.232	-0.461	-0.370	1.32
consist_word	1.823	0.754	0.885	1.931	1.788	0.369	7.550	0.61
context_base	1.823	2.207	-1.155	0.097	1.384	0.077	4.433	1.17
dataset_us	2.295	-0.019	0.885	2.099	-1.909	0.369	3.719	1.41
process_phase	-0.862	-0.793	-0.395	0.432	-0.475	0.881	-1.212	0.64
us_corpu	-3.862	1.981	-1.675	0.432	-0.475	-0.461	-4.061	1.80
word_distribut	0.906	-0.793	0.885	2.432	0.515	0.369	4.314	0.95
term_occurr	-3.094	-5.660	0.885	-0.402	0.384	-0.290	-8.177	2.30
method_cluster	-0.094	-3.660	0.885	0.764	-0.475	0.369	-2.210	1.54
token_text	-5.094	-3.339	0.885	-1.903	-1.333	0.369	10.416	2.05
compon_analysi	-1.094	-0.019	-1.395	0.764	-0.051	0.369	-1.426	0.77
gener_term	0.675	-1.019	0.085	1.097	1.242	-0.290	1.790	0.80
semant_structur	-4.325	-1.886	-0.155	-1.236	1.242	0.369	-5.992	1.80
stem_reduc	-2.325	-1.793	-1.675	-0.069	1.242	-0.461	-5.081	1.22
term_accuraci	1.675	0.527	2.085	-0.903	1.808	0.369	5.561	1.04
cluster_word	-3.325	0.207	0.365	-1.736	0.667	0.369	-3.454	1.46
document_given	-1.557	0.207	-0.155	-0.069	-0.333	0.539	-1.368	0.66
system_text	0.443	-2.886	-0.635	0.764	-0.475	0.539	-2.249	1.24
text_understand	-1.019	0.434	-0.635	-0.903	0.384	0.223	-1.517	0.61
us_mean	-0.019	-0.246	-1.476	0.097	1.242	0.369	-0.033	0.81
document_extract	1.981	0.207	0.885	0.432	1.081	0.369	4.954	0.60
frequenc_calcul	-0.019	-1.339	-1.155	1.265	-2.192	-0.948	-4.389	1.10
document_group	0.981	0.754	0.605	0.096	-0.475	0.369	2.328	0.48

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
domain_knowledg	0.749	0.981	1.125	-1.236	-0.626	1.052	2.045	0.92
gener_content	-1.251	-0.793	-1.155	-0.736	0.808	-0.461	-3.588	0.68
learn_data	-0.251	1.301	0.125	-0.071	-2.768	-0.461	-2.125	1.22
retriev_base	0.749	1.527	1.365	-0.236	-1.060	0.539	2.885	0.90
algorithm_mean	0.518	2.074	2.764	3.596	0.384	0.369	9.705	1.27
approach_perform	-0.482	-0.793	0.885	-1.236	-1.909	-1.435	-4.970	0.89
model_approach	-0.482	1.207	-2.915	0.931	-0.051	-1.290	-2.600	1.39
network_us	-0.482	-0.019	0.125	0.931	-0.060	0.369	0.862	0.43
gram_word	-0.482	-1.019	-2.675	1.265	-5.202	0.369	-7.745	2.13
model_combin	1.286	0.207	1.605	-0.237	-2.051	0.369	1.179	1.19
stemmer_algorithm	0.286	0.794	0.885	-0.736	-0.475	-0.290	0.463	0.62
valu_paramet	0.286	0.754	-0.955	-1.736	1.525	-0.290	-0.416	1.08
valu_word	0.286	0.527	0.125	0.598	1.647	0.369	3.552	0.50
accuraci_tabl	0.286	1.927	1.645	-0.236	1.384	-0.290	4.716	0.90
assign_word	1.055	0.527	2.085	4.927	1.242	0.369	10.205	1.55
base_measur	1.055	-0.566	0.125	1.265	-1.777	-1.290	-1.189	1.13
process_approach	2.055	1.301	-0.635	0.596	0.940	0.369	4.625	0.83
us_latent	1.823	3.927	-1.395	0.432	1.667	0.369	6.821	1.63
gener_algorithm	1.823	-1.113	0.125	-1.236	-0.202	-0.461	-1.063	1.01
preprocess_techniqu	-1.399	0.981	1.645	-0.903	1.384	0.710	2.417	1.15
rule_rule	-2.631	-0.246	1.125	-0.069	-1.333	-0.461	-3.615	1.16
level_text	-2.862	-2.886	0.125	0.432	-0.475	0.369	-5.298	1.44
process_base	-3.862	-0.246	1.085	1.265	-0.333	-0.290	-2.381	1.68
relev_queri	-4.325	-0.246	1.645	0.432	-0.626	-0.948	-4.069	1.83
document_test	-0.557	-1.339	-1.395	-1.069	0.525	0.369	-3.467	0.77
document_accord	-0.557	2.074	1.605	3.262	0.384	0.369	7.136	1.27
order_evalu	-1.557	0.527	0.885	-0.236	-0.202	0.369	-0.213	0.79
base_learn	-2.788	-0.019	-2.915	-0.903	0.667	0.369	-5.590	1.44
algorithm_suffix	-1.788	-0.246	0.325	1.432	1.232	0.369	1.323	1.06
approach_featur	-2.019	-0.339	-0.395	-1.069	-0.192	0.369	-3.647	0.76
time_process	0.981	2.207	0.125	-0.570	-1.051	0.369	2.060	1.06
equal_number	-2.019	-1.339	-0.635	-4.570	-0.475	0.369	-8.671	1.58
improv_cluster	-2.019	0.661	0.885	0.929	1.242	-0.461	1.236	1.13
classif_document	-2.019	-0.566	0.125	-0.069	-0.051	-1.290	-3.870	0.77
gener_process	-0.019	1.301	1.645	-1.738	1.384	-0.777	1.795	1.25
jordan_latent	-1.251	2.074	-0.155	-0.069	-6.343	-0.461	-6.205	2.58
label_train	-0.251	-0.793	-1.155	-2.903	-1.192	-0.461	-6.754	0.86
model_describ	-0.251	-1.113	-0.635	0.097	-1.192	0.369	-2.725	0.58
us_topic	-0.251	0.887	-2.155	-1.903	1.242	-1.290	-3.469	1.31
base_machin	-0.482	-1.019	1.645	0.764	-4.777	0.369	-3.502	2.06
frequenc_number	0.518	-1.019	1.365	-2.736	-3.051	-2.119	-7.043	1.64

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
process_includ	-0.482	-0.660	0.125	1.598	-1.051	-1.290	-1.760	0.96
word_assign	-0.482	2.567	-0.635	0.432	0.091	0.369	2.340	1.05
automat_classif	-0.482	0.527	-0.435	-1.069	0.808	0.881	0.230	0.74
calcul_term	0.286	-0.246	-0.155	-3.404	-0.192	-1.290	-5.001	1.24
signific_improv	0.286	2.473	0.885	2.265	0.384	-0.777	5.516	1.14
stage_process	0.286	-1.566	1.645	1.763	0.667	0.052	2.846	1.11
valu_indic	1.055	0.207	0.325	0.432	0.515	-0.461	2.073	0.45
analysi_tool	1.823	2.301	0.885	1.097	2.647	0.369	9.121	0.80
gener_method	1.823	0.434	-0.635	0.764	-0.909	1.394	2.871	0.99
vector_us	1.823	1.754	1.045	4.262	2.101	0.369	11.353	1.21
origin_data	1.823	0.527	1.645	-1.572	-2.768	-0.290	-0.634	1.66
comput_secur	1.823	0.527	0.605	-0.903	-1.343	-0.119	0.590	1.04
engin_depart	-0.862	-1.793	-1.155	1.265	-0.333	0.369	-2.510	1.01
frequent_item	-0.094	1.301	0.125	0.097	-0.333	0.881	1.977	0.57
http_github	-2.325	-1.019	0.885	-0.236	-1.768	0.369	-4.094	1.14
increas_perform	-0.557	-0.793	1.645	-2.904	2.101	0.539	0.031	1.67
occurr_document	-0.557	2.301	-0.635	-0.903	-2.909	-0.461	-3.164	1.52
similar_cluster	-3.557	-1.793	0.125	-2.736	-0.475	-0.461	-8.896	1.33
studi_featur	-1.788	0.754	-0.635	-0.069	-1.768	0.369	-3.138	0.98
token_stem	1.212	-0.793	-0.155	0.432	-1.051	-0.461	-0.816	0.77
us_weight	0.212	0.754	0.365	-2.237	1.525	0.369	0.987	1.16
word_reduc	-0.788	-3.113	-0.635	-2.069	-0.475	0.369	-6.712	1.14
base_number	2.212	-2.566	-2.155	-0.402	2.101	-0.777	-1.588	1.87
data_includ	-1.788	-0.019	0.125	0.598	-1.626	0.539	-2.171	0.98
dataset_collect	-0.788	-1.019	0.045	-1.236	1.242	0.369	-1.388	0.87
find_word	-1.788	-0.019	-2.155	-0.402	-1.051	-0.461	-5.876	0.77
learn_train	-0.019	2.074	0.885	-0.904	0.091	0.369	2.494	0.91
reduc_time	-1.019	0.527	1.365	0.432	-1.060	0.369	0.612	0.87
weight_document	-0.251	-1.886	0.325	1.265	-0.333	0.369	-0.512	0.96
word_collect	-0.251	-0.019	-1.395	-2.570	1.808	0.369	-2.059	1.37
corpu_train	-1.251	-1.566	0.085	-2.736	1.242	-0.461	-4.687	1.27
learn_system	-1.251	-1.339	-1.395	-1.736	-0.475	0.369	-5.829	0.71
accuraci_classif	0.749	-2.113	-0.635	0.432	-2.909	-0.461	-4.937	1.31
algorithm_compar	-1.251	0.340	1.645	-2.570	2.101	-0.119	0.146	1.60
base_form	0.518	0.527	1.645	0.761	1.525	-0.461	4.515	0.70
contain_text	-0.482	-1.339	0.365	-0.736	-1.192	0.369	-3.017	0.68
dataset_experi	-0.482	-0.246	-5.715	-2.903	0.384	0.369	-8.594	2.21
pair_word	1.518	-0.793	-4.195	1.432	-0.051	0.369	-1.721	1.92
approach_combin	-0.482	1.527	-2.915	0.598	-1.343	0.369	-2.247	1.44
includ_word	1.518	1.301	1.605	0.097	1.242	1.077	6.840	0.50
problem_text	-0.482	-1.886	0.605	-0.903	1.384	0.539	-0.744	1.09

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
reduct_techniqu	0.518	-1.886	0.885	1.763	0.384	0.369	2.031	1.10
remov_punctuat	-0.482	1.754	0.885	-0.402	-0.919	-0.461	0.375	0.94
score_system	0.286	2.527	1.645	-0.071	-0.192	-0.777	3.418	1.15
select_document	0.286	-0.246	0.565	1.265	1.242	1.077	4.190	0.55
type_featur	0.286	-1.753	1.645	-0.236	-1.192	0.369	-0.881	1.11
us_model	2.055	-0.019	-3.435	-0.236	-1.768	0.369	-3.035	1.72
mobil_phone	1.055	-2.660	0.845	-1.069	-1.333	0.369	-2.794	1.33
select_relev	1.055	1.661	-0.395	0.596	-0.475	-0.461	1.981	0.83
system_data	1.055	2.607	-0.395	2.099	2.101	0.369	7.834	1.06
gener_us	1.055	2.074	-3.715	1.265	3.798	0.369	4.845	2.29
order_extract	1.055	0.661	-0.395	-1.236	-2.051	-1.119	-3.085	1.09
perfor_manc	2.055	1.301	-2.155	1.096	-1.192	-0.461	0.643	1.49
recal_recal	1.823	-0.019	1.645	1.598	2.505	-0.461	7.091	1.06
rule_extract	1.823	0.754	0.125	-1.903	-1.919	0.369	-0.751	1.37
structur_text	-0.631	0.527	3.325	1.265	-0.475	0.369	4.380	1.32
word_train	1.906	1.301	3.805	1.598	1.384	0.369	10.362	1.04
combin_model	-1.094	-1.339	0.365	1.265	0.667	0.369	0.232	0.94
data_classif	-0.094	2.527	1.845	2.598	1.525	-0.290	8.112	1.15
time_featur	-0.094	2.301	-0.395	-1.069	-0.192	0.369	0.919	1.05
gener_categor	-2.325	0.527	0.125	-1.736	-0.192	0.369	-3.233	1.09
model_term	-0.557	-0.019	0.125	1.265	-1.626	-0.461	-1.273	0.87
probabilist_latent	-0.788	-0.339	1.885	2.265	0.374	0.369	3.765	1.11
search_word	-0.788	2.074	2.805	0.598	-0.192	-0.461	4.036	1.33
order_word	0.212	0.527	1.885	0.428	1.242	0.369	4.663	0.59
predict_class	-1.788	-0.339	0.885	0.432	1.232	0.369	0.790	0.99
base_applic	-1.788	2.114	0.365	0.432	-1.333	0.369	0.157	1.28
bay_classif	-1.788	0.434	-0.635	1.097	0.384	-0.461	-0.969	0.93
binari_classif	-1.788	1.301	-0.195	-2.069	0.384	-0.461	-2.829	1.17
learn_inform	-2.788	-3.339	-1.395	0.764	1.525	0.369	-4.865	1.82
note_comput	-0.019	-1.886	-0.635	2.099	2.091	0.369	2.017	1.43
number_class	-2.019	-1.019	-0.635	-4.570	-0.333	0.369	-8.209	1.60
perform_inform	0.981	2.074	0.885	2.598	-0.192	2.077	8.423	0.94
techniqu_find	-0.251	0.754	0.885	-0.069	-0.626	-1.290	-0.597	0.75
main_step	-0.251	-0.793	1.645	-2.237	1.384	-1.119	-1.371	1.37
make_difficult	-1.251	-1.793	0.885	0.598	-0.343	0.369	-1.536	0.98
servic_servic	-0.251	2.114	0.885	0.264	1.242	0.710	4.964	0.74
method_classif	0.749	-0.339	-0.155	0.931	0.525	0.369	2.079	0.46
model_latent	0.749	1.207	0.885	0.096	1.384	0.369	4.689	0.45
model_process	-0.251	0.754	1.125	0.764	-0.343	0.369	2.417	0.54
statist_measur	0.518	-1.339	-0.155	0.764	-0.475	0.710	0.023	0.75
stem_method	-0.482	0.527	-0.915	-1.236	1.232	-0.461	-1.334	0.85

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
topic_gener	1.518	0.527	1.645	1.761	1.525	0.369	7.344	0.56
tradit_approach	-0.482	1.754	1.885	-0.904	1.242	-1.948	1.546	1.45
data_format	-0.482	-0.246	0.885	0.428	0.384	-0.461	0.508	0.51
featur_term	0.518	1.887	1.045	2.099	-0.475	0.369	5.442	0.89
posit_class	0.286	2.074	0.845	-2.069	-0.485	-0.290	0.361	1.27
score_function	0.286	2.074	1.125	2.099	0.647	-0.290	5.941	0.88
term_precis	0.286	1.301	-2.915	0.595	2.101	0.369	1.736	1.56
total_word	2.055	0.527	-2.155	-1.236	0.798	0.369	0.358	1.38
divid_number	1.055	-0.753	0.365	1.598	1.242	-1.290	2.217	1.06
present_model	1.055	-0.246	1.885	-2.237	0.374	0.369	1.198	1.28
word_group	1.055	-0.019	-0.395	-2.572	2.101	-0.461	-0.292	1.44
approach_develop	1.055	1.887	-1.395	-1.237	1.242	0.369	1.920	1.24
compar_word	1.055	2.207	1.325	-1.404	0.384	0.369	3.935	1.11
find_optim	1.823	-0.246	0.365	0.931	-0.060	0.369	3.181	0.69
further_improv	1.823	1.981	1.365	0.598	-1.202	-0.290	4.275	1.15
probabl_word	1.823	2.074	1.645	2.099	-0.051	3.444	11.035	1.03
proce_ing	-4.094	-1.019	-1.395	-0.402	2.101	0.881	-3.928	1.94
data_form	-3.094	1.301	1.645	-1.903	-2.192	-1.290	-5.533	1.78
neg_sentiment	-0.557	-0.246	0.085	-1.069	1.384	0.369	-0.035	0.77
servic_orient	0.443	2.074	0.885	0.432	2.374	-0.948	5.260	1.11
cluster_gener	0.212	0.527	1.645	-1.236	-0.485	-0.461	0.203	0.91
train_phase	1.212	0.661	1.085	-0.402	1.242	0.369	4.166	0.58
cluster_mean	-0.788	1.887	0.885	-1.069	-0.475	0.369	0.808	1.03
document_set	-1.788	-1.793	0.605	-1.236	0.384	-1.290	-5.118	0.98
file_file	-2.019	-0.339	0.605	0.432	0.525	-0.290	-1.087	0.90
inform_sourc	-0.019	-0.246	-0.635	-1.236	-0.768	0.369	-2.535	0.52
neighbor_algorithm	-0.251	-1.019	1.645	1.763	-0.192	0.369	2.314	1.02
preprocess_document	0.749	1.661	-0.435	1.432	0.384	0.369	4.158	0.70
structur_inform	-0.251	2.301	-0.635	2.265	-0.343	-2.119	1.218	1.59
us_approach	-0.251	0.527	0.605	2.264	0.384	-0.948	2.580	0.98
dataset_evalu	0.749	-0.019	1.365	1.432	-2.768	-0.290	0.469	1.42
mine_pattern	-0.251	1.340	2.085	0.432	2.101	-0.461	5.246	1.04
model_user	0.518	-3.339	0.365	0.598	-0.192	0.710	-1.341	1.42
model_vector	0.518	-1.113	1.645	-0.570	-0.333	0.369	0.514	0.89
size_data	-0.482	-2.339	0.125	2.931	-0.051	0.369	0.552	1.55
struc_ture	0.518	-0.793	0.125	-0.236	-2.626	0.369	-2.644	1.07
calcul_number	0.518	0.754	-0.395	2.099	-0.485	0.881	3.372	0.87
number_charact	1.286	-0.113	-1.155	1.265	0.091	0.369	1.743	0.84
system_support	1.286	1.301	1.125	-1.236	-2.626	-2.777	-2.927	1.79
us_combin	0.286	2.887	0.885	-2.570	0.667	0.369	2.523	1.60

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
user_interact	0.286	-0.019	0.125	-0.237	0.667	0.539	1.360	0.31
data_represent	1.286	2.661	0.605	0.764	0.949	0.369	6.634	0.75
experi_evalu	0.286	-0.793	0.125	-2.404	-0.475	-0.290	-3.550	0.89
gener_purpos	1.055	-2.660	0.325	1.265	0.525	-0.461	0.049	1.32
linguist_human	2.055	1.434	-0.395	-1.570	-0.333	0.369	1.558	1.21
tech_nologi	1.055	-1.339	0.845	-1.069	-2.192	0.369	-2.333	1.21
word_frequent	1.055	2.074	1.605	2.099	2.647	0.369	9.848	0.75
automat_process	1.823	2.074	1.645	2.759	1.242	0.369	9.912	0.74
remov_prefix	1.823	3.207	1.125	-0.237	0.667	-1.290	5.295	1.44
select_word	5.295	0.754	0.885	0.432	1.242	0.369	8.976	1.72
us_naïv	-0.168	1.301	1.645	2.432	1.384	0.052	6.645	0.90
correct_word	-1.631	-0.566	0.885	1.265	1.525	0.369	1.847	1.10
perform_poorli	2.138	0.527	0.125	2.432	0.949	0.369	6.540	0.88
type_type	-3.094	-1.019	1.605	-0.236	1.242	0.369	-1.133	1.57
retriev_perform	-1.094	0.527	0.125	1.265	-3.768	0.369	-2.575	1.65
effect_featur	-0.325	2.074	-0.915	0.097	0.384	0.369	1.683	0.92
data_gather	-2.557	0.527	0.125	-0.236	-2.051	-0.461	-4.651	1.13
inform_filter	-0.557	0.207	-0.395	0.432	0.384	0.710	0.781	0.46
overcom_problem	-3.557	-0.793	1.125	1.265	-1.333	-1.119	-4.412	1.63
method_arab	-0.788	0.527	1.645	-1.903	0.525	-2.777	-2.771	1.52
reduc_size	-1.788	0.754	-1.155	0.432	-1.051	0.369	-2.440	0.96
stem_techniqu	-0.019	-0.339	0.885	0.264	0.384	0.369	1.541	0.38
us_document	-0.019	2.074	0.125	-4.570	0.808	0.710	-0.872	2.09
import_word	0.749	0.527	-1.155	-0.402	-2.768	0.369	-2.680	1.22
perform_featur	-1.251	1.301	0.085	-0.236	-2.909	0.369	-2.642	1.34
approach_classifi	0.749	1.527	0.365	0.097	0.091	0.369	3.198	0.50
perform_document	0.749	0.981	2.085	0.264	1.242	0.369	5.689	0.61
algorithm_data	-0.251	0.527	1.645	-1.069	-0.343	0.369	0.877	0.85
cluster_group	-0.251	-0.246	0.125	-0.736	-1.051	0.369	-1.791	0.48
estim_probabl	-1.251	0.754	-1.395	2.764	0.808	-0.290	1.391	1.42
given_topic	-0.482	-0.019	-1.155	-2.903	-0.333	0.369	-4.525	1.07
model_implement	-0.482	-0.246	1.325	0.598	-0.192	0.539	1.542	0.62
order_achiev	0.286	-3.660	-0.155	0.432	1.242	-0.290	-2.145	1.56
vector_model	1.055	-0.793	0.885	-0.237	-0.192	0.369	1.086	0.65
inform_data	2.055	2.434	1.645	3.763	2.101	0.223	12.220	1.05
total_document	1.055	-3.113	-0.635	0.598	0.091	0.369	-1.636	1.37
document_comput	1.055	-1.113	-0.155	2.598	-0.475	-0.290	1.620	1.22
algorithm_test	1.055	0.754	0.365	2.096	-0.475	0.369	4.163	0.78
fuzzi_set	1.055	0.754	0.125	-0.071	-1.192	0.369	1.039	0.72
system_process	1.055	0.207	-2.155	0.598	1.232	0.369	1.306	1.12
term_semant	1.823	-0.793	0.885	0.764	-2.626	-1.119	-1.065	1.49

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
token_part	1.823	-0.793	0.885	-0.402	-3.343	0.710	-1.120	1.65
train_train	1.823	-0.793	1.085	-1.570	1.242	-0.290	1.498	1.21
tree_algorithm	-3.399	0.754	0.885	-1.236	2.101	0.539	-0.356	1.78
detect_us	2.138	1.301	-2.155	1.764	1.242	0.369	4.659	1.42
help_identifi	-3.325	-0.246	-1.395	-2.903	2.101	0.369	-5.400	1.88
input_word	-2.557	2.074	-0.395	1.265	-2.626	0.369	-1.870	1.78
contain_number	0.212	-1.019	1.125	-2.903	2.242	-1.290	-1.633	1.68
group_document	-0.788	-0.566	0.125	-2.069	0.384	0.369	-2.546	0.86
approach_analyz	1.981	1.207	0.125	-0.236	-2.192	0.369	1.253	1.30
method_consid	-1.019	-2.339	-0.635	0.432	0.384	-1.290	-4.469	0.96
document_user	-1.019	-2.339	-0.915	0.432	2.101	-0.461	-2.203	1.38
languag_base	-0.251	-2.566	-0.635	0.764	-0.475	-0.461	-3.623	0.99
commun_engin	-0.251	-0.339	0.885	-0.903	0.525	0.369	0.285	0.60
corpu_number	0.749	-3.339	1.885	-1.236	-2.192	0.369	-3.765	1.80
perform_term	0.749	1.207	0.605	0.598	0.808	0.369	4.336	0.26
collect_word	-0.251	1.301	-1.435	-1.236	-0.475	-0.461	-2.557	0.88
detail_descript	0.518	1.794	0.125	2.099	0.384	-0.290	4.629	0.87
inform_us	0.518	0.754	-1.915	0.432	-0.909	0.369	-0.753	0.96
tree_classifi	-0.482	2.661	0.365	-2.570	2.101	0.369	2.442	1.71
word_exist	0.518	0.207	1.645	-0.236	0.232	-0.461	1.906	0.67
analysi_opinion	0.518	-0.793	1.645	-1.736	-3.051	0.369	-3.049	1.56
effect_us	0.518	-2.339	0.885	2.264	-0.475	0.369	1.220	1.40
method_measur	0.286	1.301	-0.155	0.764	2.091	0.710	4.997	0.72
paramet_valu	0.286	1.301	1.365	-0.903	-3.768	-0.461	-2.179	1.74
supervis_unsupervis	0.286	1.301	0.885	1.262	0.667	0.369	4.769	0.40
text_consid	2.286	-3.206	1.125	1.265	0.667	0.369	2.505	1.73
averag_valu	0.286	-0.566	1.645	-0.736	-0.475	0.881	1.035	0.86
bay_theorem	0.286	1.301	0.125	-0.071	0.525	-0.290	1.876	0.51
evalu_classifi	1.286	2.074	0.125	1.432	0.223	0.369	5.508	0.72
pattern_gener	0.286	-1.113	1.845	-1.236	1.242	-0.461	0.564	1.15
perform_improv	1.055	1.661	-0.155	2.265	1.242	0.394	6.461	0.79
preprocess_data	1.055	0.527	-2.915	-0.570	0.667	0.369	-0.868	1.33
test_system	1.055	0.754	1.524	0.764	2.101	0.539	6.738	0.54
word_search	1.055	1.434	-0.635	0.764	1.242	0.394	4.254	0.69
faculti_scienc	1.055	0.207	-0.635	1.264	-1.333	0.539	1.096	0.92
form_us	1.055	1.301	-0.635	0.262	-0.475	0.369	1.876	0.71
linguist_resourc	1.823	-2.886	-1.195	2.099	0.525	0.369	0.734	1.72
semant_network	1.823	-0.246	1.645	0.763	0.091	0.539	4.615	0.76
variou_featur	1.823	1.527	0.125	1.595	0.384	0.369	5.822	0.69
written_text	1.823	2.074	0.885	2.097	2.940	0.539	10.358	0.80
categori_word	1.823	-2.886	0.805	1.265	0.384	0.369	1.759	1.51

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
context_awar	1.823	-0.019	1.885	1.595	2.101	-0.461	6.923	1.00
extract_tweet	-1.557	1.301	0.365	-0.236	-0.192	0.369	0.050	0.86
order_logic	-1.557	1.301	0.125	-0.069	-2.192	0.369	-2.024	1.18
select_term	-2.557	-1.793	1.645	-0.236	1.667	0.369	-0.905	1.60
simpl_word	-0.557	1.754	0.085	-0.402	2.101	-0.461	2.520	1.09
appear_frequent	-0.788	1.301	0.365	-0.069	-0.192	0.369	0.985	0.64
method_select	-1.788	-0.246	1.645	-0.402	-2.768	0.369	-3.190	1.43
modern_inform	0.212	2.074	1.645	0.764	1.515	0.369	6.579	0.69
term_gener	0.212	1.207	0.125	2.432	2.242	-0.948	5.270	1.21
evalu_evalu	1.212	0.661	1.645	1.598	-1.333	0.369	4.150	1.02
method_improv	-2.788	1.661	0.125	0.432	1.242	-1.290	-0.619	1.52
model_defin	-2.019	0.527	0.325	2.099	0.384	1.052	2.367	1.24
multinomi_distribut	0.981	0.527	-1.395	-0.570	1.242	0.369	1.153	0.91
size_train	-1.019	-2.566	0.885	-1.236	0.525	0.539	-2.872	1.23
specif_topic	0.981	1.301	-1.155	2.931	1.667	0.369	6.092	1.25
approach_cluster	1.981	2.527	1.125	-1.236	-0.051	0.539	4.886	1.25
describ_detail	-1.251	-0.246	1.645	-0.904	2.101	-0.461	0.883	1.27
document_thu	-0.251	1.301	-2.155	-0.236	0.667	-1.290	-1.964	1.15
gram_model	-1.251	2.207	1.605	-0.236	0.384	0.539	3.248	1.14
train_time	-0.482	0.981	-1.435	-1.236	1.242	0.369	-0.562	1.03
convert_word	2.518	-1.566	0.325	1.598	2.101	-0.461	4.514	1.45
divid_total	1.518	2.074	0.325	1.430	1.384	0.369	7.099	0.63
improv_precis	0.518	-1.339	1.125	-0.236	-0.475	0.539	0.132	0.81
document_order	0.518	1.527	1.325	1.430	2.101	0.369	7.269	0.60
gram_featur	2.518	0.754	0.885	1.097	-0.192	-1.290	3.772	1.17
main_featur	-0.482	1.301	1.645	-1.236	0.798	0.369	2.394	1.00
mine_machin	1.286	-0.246	0.365	0.931	-2.909	0.369	-0.205	1.37
repr_sent	1.286	-0.566	0.125	2.264	1.242	-1.290	3.061	1.21
test_evalu	0.286	1.527	-0.395	1.265	1.515	0.539	4.738	0.71
websit_http	1.286	1.434	1.085	1.265	-0.192	0.369	5.246	0.59
calcul_frequenc	2.055	1.301	1.125	-1.069	-1.485	-0.461	1.466	1.32
comput_semant	1.055	-0.246	-1.155	-0.402	1.232	0.369	0.852	0.84
subset_featur	1.055	0.754	-0.915	0.432	-3.909	-0.461	-3.045	1.67
system_arab	1.055	-1.339	0.125	0.432	-1.051	-0.290	-1.069	0.83
algorithm_predict	1.055	0.754	0.764	2.432	1.242	0.369	6.616	0.65
gener_data	1.055	0.981	1.885	0.264	1.808	-0.290	5.702	0.78
mine_natur	1.823	1.301	1.645	2.764	-0.777	0.369	7.124	1.13
multi_label	1.823	1.114	0.125	1.598	2.949	0.369	7.978	0.95
node_graph	1.823	0.207	0.365	1.265	-0.485	-0.461	2.715	0.85
word_test	1.823	1.527	0.885	2.099	-1.777	-1.290	3.267	1.52
design_model	-3.325	0.527	-0.635	1.764	1.242	0.539	0.113	1.67

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
further_develop	3.443	2.074	0.125	2.265	0.374	0.369	8.650	1.23
model_construct	-1.557	1.661	-0.635	0.432	2.101	0.369	2.370	1.25
sampl_data	-1.788	1.301	-2.915	-1.903	2.101	0.369	-2.836	1.84
salton_bucklei	-1.788	0.527	0.125	0.598	0.808	-0.461	-0.190	0.89
applic_develop	1.212	-0.019	1.125	2.099	-0.475	-1.948	1.993	1.32
automat_document	2.981	1.301	1.365	2.265	0.949	-0.119	8.742	0.98
document_avail	-2.019	-0.566	0.125	2.099	-2.192	0.539	-2.015	1.49
model_consid	0.981	1.754	1.365	0.764	-1.333	0.369	3.899	0.99
stem_step	-1.251	-0.246	0.365	-0.236	-0.192	0.369	-1.191	0.54
arxiv_preprint	-1.251	3.340	1.645	-0.402	2.101	-1.290	4.143	1.77
classifi_classif	1.749	1.301	1.605	0.264	-0.475	0.369	4.812	0.81
classifi_support	0.518	1.527	-0.915	-2.570	2.101	0.369	1.029	1.55
mean_document	-0.482	-0.019	0.365	0.764	-0.192	0.369	0.804	0.41
method_comput	-0.482	0.661	1.645	0.430	2.101	0.539	4.893	0.84
technolog_issn	0.518	1.661	0.885	1.265	1.242	1.394	6.964	0.37
appear_time	0.518	-1.019	1.885	1.432	-0.909	-1.290	0.616	1.25
auto_matic	-0.482	0.981	0.125	-3.570	0.384	0.369	-2.195	1.50
captur_semant	1.286	-0.793	0.845	2.099	-2.051	0.539	1.926	1.37
linguist_structur	0.286	0.981	-0.635	-0.570	1.242	-0.461	0.843	0.75
perform_base	0.286	2.301	-0.435	-0.236	0.384	-0.290	2.010	0.93
word_refer	1.286	0.527	0.125	-2.903	-1.051	0.539	-1.476	1.38
data_obtain	1.286	2.207	0.605	-1.903	1.384	0.369	3.947	1.29
describ_system	0.286	-1.566	0.885	-0.236	-0.192	-0.461	-1.283	0.75
direct_graph	0.286	0.887	-0.395	-0.069	2.101	0.369	3.178	0.81
help_improv	1.286	2.074	0.285	1.432	1.384	-0.290	6.171	0.79
linear_model	0.286	2.074	4.004	0.432	2.101	-0.461	8.437	1.49
model_provid	1.286	-0.019	0.325	-0.402	-0.475	0.369	1.083	0.59
multipl_word	2.055	-0.339	1.605	1.432	1.525	0.710	6.987	0.78
probabl_document	1.055	2.527	1.885	1.763	-2.192	0.369	5.406	1.54
topic_interest	1.055	0.981	1.645	0.097	0.232	0.369	4.378	0.55
word_total	1.055	2.074	1.605	-0.236	-1.485	0.369	3.382	1.19
accuraci.obtain	1.055	0.981	-0.195	1.265	-0.333	0.369	3.140	0.62
class_classifi	1.055	-2.660	-0.635	1.265	0.525	-0.461	-0.911	1.33
current_state	2.055	1.527	1.645	1.265	2.223	0.369	9.083	0.60
experi_experi	2.055	-0.019	0.885	-0.237	0.384	0.539	3.606	0.75
mathemat_comput	1.823	-0.793	-1.395	-0.402	-0.909	0.369	-1.307	1.06
measur_cosin	1.823	-0.019	-1.395	-0.402	-0.768	0.369	-0.393	1.01
messag_servic	1.823	2.074	0.125	-2.069	-0.626	-0.119	1.208	1.42
similar_text	1.823	-0.019	1.645	2.764	-1.343	0.369	5.238	1.36
achiev_good	1.823	0.434	0.885	0.430	2.667	0.369	6.607	0.86
algorithm_term	1.823	-0.566	0.125	1.598	-0.909	-0.461	1.610	1.07

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
method_model	1.823	0.527	0.125	-0.402	0.657	0.539	3.269	0.67
metric_evalu	1.823	1.700	1.885	2.099	2.242	0.539	10.288	0.55
stemmer_arab	1.823	1.434	-1.395	0.598	1.242	0.223	3.925	1.06
system_consid	-3.631	1.301	1.645	1.265	-0.475	0.710	0.816	1.82
system_requir	-0.631	0.527	0.885	1.265	0.384	0.539	2.970	0.58
tweet_collect	-3.862	2.074	0.365	0.432	0.525	0.369	-0.098	1.82
word_user	1.906	0.754	0.125	1.265	0.384	-0.461	3.973	0.77
appli_cluster	-2.557	1.527	-2.155	-0.402	2.101	0.539	-0.946	1.74
learn_task	-0.557	0.527	0.365	-0.069	1.242	0.369	1.877	0.55
document_organ	2.212	-0.793	2.125	-0.069	2.101	0.369	5.944	1.20
measur_comput	-2.788	-0.793	-1.155	1.265	1.242	0.369	-1.860	1.44
term_given	-1.788	-1.019	1.645	1.598	-0.333	-0.461	-0.359	1.28
user_find	-1.788	-0.793	0.885	-1.069	2.101	-0.461	-1.125	1.30
bay_model	1.212	1.301	0.365	1.432	1.242	1.223	6.774	0.35
consid_term	-1.788	-0.246	-0.155	1.265	-0.475	0.369	-1.030	0.92
mcgraw_hill	-2.788	0.434	0.125	2.099	2.242	-0.119	1.993	1.67
method_document	-2.019	1.301	-0.635	-0.069	-0.475	-0.461	-2.359	0.97
model_cluster	0.981	1.207	-1.155	0.432	2.242	0.369	4.075	1.03
retriev_data	-2.019	-1.793	0.125	1.265	-0.192	0.369	-2.246	1.17
search_inform	-1.019	0.981	0.125	-0.236	1.242	-0.290	0.803	0.77
basic_idea	0.981	0.434	-0.635	1.265	-0.475	0.369	1.938	0.69
blog_post	0.749	2.207	1.645	0.598	0.949	0.369	6.517	0.64
comput_survei	1.749	-0.246	0.125	-0.402	-0.192	0.539	1.573	0.73
deriv_word	0.749	2.074	1.645	-1.236	1.232	-1.290	3.175	1.33
main_contribut	-1.251	1.527	0.845	0.432	-1.333	-0.461	-0.241	1.06
estim_paramet	1.749	0.527	0.125	0.432	-0.768	0.369	2.434	0.74
form_cluster	0.518	1.301	1.885	1.763	0.384	-0.461	5.389	0.83
method_name	-0.482	1.527	0.365	1.097	1.667	0.369	4.542	0.75
model_techniqu	0.518	2.301	2.845	2.764	2.808	0.369	11.604	1.07
neural_inform	-0.482	0.527	0.885	0.764	1.232	0.369	3.295	0.54
binari_classifi	-0.482	-1.339	-0.635	0.598	1.242	-0.461	-1.078	0.85
charact_token	-0.482	-3.339	0.885	0.432	-0.192	0.369	-2.329	1.39
latent_variabl	1.518	2.527	0.885	-0.236	-1.333	-0.948	2.413	1.37
system_comput	0.286	-1.793	0.885	-0.236	1.949	0.369	1.461	1.13
task_automat	0.286	-3.113	1.645	-1.236	-0.333	0.369	-2.383	1.49
text_includ	1.286	1.301	-0.635	-0.402	-1.909	-0.290	-0.649	1.12
us_neural	0.286	2.074	1.645	1.432	-0.202	-1.290	3.945	1.17
algorithm_describ	1.286	1.301	-0.155	-2.570	1.242	-0.461	0.643	1.39
algorithm_method	2.286	-0.246	0.885	0.432	0.515	0.369	4.240	0.78
algorithm_requir	1.286	0.754	-0.395	0.432	0.091	0.369	2.536	0.52
applic_us	0.286	0.754	1.645	1.265	-1.202	0.369	3.117	0.91

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
calcul_score	1.286	0.754	1.125	1.432	0.374	0.369	5.339	0.42
featur_number	1.055	-0.339	1.645	0.764	-0.192	-0.461	2.472	0.79
inform_base	1.055	-0.019	-0.635	0.598	-0.909	0.369	0.457	0.68
method_achiev	2.055	2.754	1.125	1.596	0.384	0.539	8.453	0.83
studi_focus	1.055	1.301	-0.155	-2.237	2.242	0.369	2.574	1.41
comput_program	1.055	2.301	0.885	1.598	-0.202	0.369	6.005	0.81
dataset_test	1.823	-0.793	0.885	1.265	-0.343	0.369	3.206	0.90
identifi_emot	1.823	-0.793	0.885	-1.903	-0.192	-0.461	-0.640	1.19
replac_word	1.823	2.074	1.645	0.097	0.657	-0.461	5.835	0.94
statist_data	1.823	2.074	0.605	-1.236	-1.485	0.369	2.150	1.36
automat_detect	1.823	0.434	1.125	-0.069	-0.333	-0.461	2.519	0.82
calcul_word	1.823	1.434	1.365	-0.236	2.384	-1.119	5.651	1.22
commun_system	1.823	-1.339	1.645	-1.404	0.384	0.369	1.477	1.27
develop_tool	1.823	1.527	0.365	1.929	1.242	0.539	7.426	0.60
featur_classif	1.823	0.114	0.125	2.099	-0.192	0.710	4.679	0.88
graphic_model	1.823	0.754	-2.675	-0.069	-0.475	0.369	-0.274	1.38
process_term	1.138	2.074	1.645	2.099	2.091	0.369	9.415	0.64
semant_resourc	1.138	1.301	1.645	1.598	-0.475	0.369	5.575	0.76
text_analyt	-3.325	1.301	1.605	-1.236	2.101	0.369	0.814	1.88
word_weight	-1.325	-0.246	1.125	0.598	1.242	0.369	1.762	0.88
match_match	-1.557	1.301	0.085	2.099	-0.475	0.369	1.821	1.18
valu_obtain	-1.557	2.527	0.885	0.764	-0.475	0.369	2.514	1.26
defin_term	1.443	-0.246	0.365	2.265	1.242	0.710	5.780	0.80
us_maximum	0.212	0.981	0.885	0.432	0.384	-1.290	1.603	0.75
cluster_comput	0.212	0.527	-0.395	-1.069	2.101	0.369	1.744	0.97
space_word	0.212	1.434	1.645	-0.402	1.242	-0.461	3.670	0.86
token_document	-1.019	1.301	-1.155	-0.402	0.384	-0.461	-1.353	0.84
model_dataset	0.981	1.754	0.605	1.598	2.101	-1.290	5.748	1.12
novel_approach	1.981	3.567	1.645	2.265	2.101	0.369	11.927	0.94
vocabulari_word	-0.019	-0.246	0.125	-0.402	-1.333	0.369	-1.508	0.54
frequenc_measur	0.749	1.981	0.365	2.265	-0.192	0.369	5.536	0.90
ground_truth	1.749	2.301	1.365	-0.404	2.101	0.369	7.480	0.97
level_represent	0.749	-0.339	0.885	1.432	2.101	0.881	5.708	0.74
process_select	0.518	2.527	0.885	-1.570	0.525	0.369	3.253	1.19
algorithm_automat	0.518	-0.793	1.645	-0.069	-1.333	0.369	0.335	0.96
index_word	0.518	-0.019	0.605	-0.069	1.242	0.369	2.644	0.44
proc_sigir	-0.482	1.527	1.645	-0.903	-0.192	-0.461	1.134	1.01
algorithm_achiev	-0.482	0.207	-0.635	1.432	0.667	0.369	1.556	0.70
appli_algorithm	-0.482	1.301	-0.635	-0.402	-2.909	0.369	-2.759	1.28
averag_length	-0.482	0.981	-2.155	0.432	0.384	0.539	-0.302	1.04
evalu_base	-0.482	-0.886	-0.635	2.099	2.101	0.710	2.906	1.25

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
form_term	-0.482	-0.019	0.885	1.265	-3.909	-0.461	-2.721	1.68
machin_intellig	-0.482	-0.246	0.885	0.764	-0.192	-0.461	0.268	0.56
mine_base	-0.482	1.301	0.365	1.265	0.374	0.369	3.191	0.61
professor_comput	0.286	0.434	1.645	-0.069	-0.475	-0.461	1.360	0.72
techniqu_reduc	0.286	-1.339	1.645	-0.402	1.242	-0.948	0.484	1.09
us_tool	0.286	0.207	0.885	0.931	-1.333	0.369	1.344	0.75
vector_term	1.055	2.074	-1.395	-1.236	0.091	0.539	1.128	1.22
evalu_dataset	2.055	-0.339	0.365	1.432	-0.333	0.369	3.547	0.88
extract_semant	1.055	0.887	1.645	0.764	1.667	0.369	6.386	0.47
process_machin	1.055	-0.793	-1.915	1.265	0.667	0.369	0.647	1.12
adject_noun	1.055	0.754	-0.635	0.432	-0.051	-0.290	1.265	0.59
collect_process	1.055	1.301	0.885	-0.903	0.091	0.539	2.968	0.73
gradient_descent	1.055	1.301	0.885	-1.903	0.232	0.369	1.938	1.06
inform_structur	1.055	2.074	-1.155	-2.069	-1.051	0.369	-0.778	1.42
languag_world	1.823	0.754	-1.155	1.097	0.384	-0.461	2.442	0.98
learn_us	1.823	1.301	0.125	1.265	-0.060	0.369	4.822	0.69
model_make	1.823	1.527	1.845	0.598	0.525	0.052	6.370	0.70
text_form	1.823	1.301	-0.915	0.432	-0.192	-0.119	2.329	0.93
analysi_natur	1.823	1.981	0.885	0.931	0.525	0.052	6.197	0.68
complex_system	1.823	-0.246	-0.395	-2.237	2.101	0.369	1.414	1.46
levenshtein_distanc	0.675	0.527	0.885	0.764	1.242	0.369	4.462	0.28
million_peopl	2.443	0.527	0.885	-0.903	2.101	0.369	5.422	1.12
model_structur	-1.557	-0.246	1.645	0.432	0.525	-0.461	0.338	0.99
remain_word	-0.557	1.301	0.605	1.265	2.242	-1.290	3.567	1.19
search_data	-0.788	1.301	0.125	0.931	0.384	0.369	2.321	0.66
approach_solv	-1.788	1.301	-1.395	-0.402	0.384	0.369	-1.532	1.07
document_convert	1.212	0.527	-2.155	2.265	0.384	0.369	2.602	1.33
extern_knowledg	2.212	1.301	3.085	1.265	0.384	0.369	8.615	0.97
appli_document	1.212	1.301	1.645	1.598	-1.192	0.539	5.103	0.98
assign_categori	-1.019	1.301	1.125	1.097	0.384	0.369	3.255	0.79
distribut_data	-1.019	-0.246	0.125	0.931	2.101	-0.461	1.430	1.02
network_commun	2.981	1.301	0.885	2.265	1.808	-0.119	9.121	0.99
tree_base	-2.019	1.207	1.645	0.764	1.242	0.539	3.379	1.21
larger_number	-2.019	-0.793	0.365	-0.402	2.101	0.369	-0.380	1.26
novel_method	-0.251	-0.793	0.365	2.265	0.384	-0.461	1.509	0.99
preprint_arxiv	-0.251	0.207	-0.635	1.432	0.384	0.369	1.505	0.64
represent_vector	-0.251	0.754	0.125	1.432	0.667	-0.461	2.265	0.65
us_keyword	1.749	1.301	0.365	0.264	2.101	0.539	6.318	0.71
data_classifi	1.749	1.661	0.885	0.598	2.242	0.369	7.503	0.68
distribut_term	0.749	2.527	1.645	-2.069	-2.192	0.369	1.029	1.77
group_base	-1.251	-1.566	1.645	-0.402	0.525	0.369	-0.681	1.10

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
relev_user	-0.251	-0.793	-0.635	1.432	0.384	0.369	0.505	0.75
summar_task	1.518	1.527	0.885	2.265	1.232	-0.461	6.967	0.84
type_word	1.518	0.527	1.645	-1.069	-0.192	0.539	2.968	0.94
vector_weight	-0.482	0.434	-0.395	1.265	2.101	-0.290	2.632	0.96
weight_weight	-0.482	0.661	0.365	1.432	2.101	0.539	4.615	0.82
approach_method	-0.482	-0.793	1.645	0.598	-0.475	-0.290	0.203	0.84
column_repres	1.518	2.527	0.885	1.931	0.667	0.539	8.066	0.72
dept_comput	-0.482	-0.793	1.645	-1.069	0.384	-0.461	-0.777	0.91
keyword_search	0.518	1.301	0.845	0.598	-0.333	0.369	3.296	0.49
measur_word	0.286	2.074	-0.635	-0.402	-0.909	-0.461	-0.047	1.00
model_analysi	0.286	2.074	-1.395	0.598	2.384	1.223	5.170	1.25
perform_comparison	0.286	2.207	0.885	0.598	0.525	0.710	5.212	0.63
user_input	1.286	1.661	0.885	-1.236	1.242	-0.461	3.377	1.05
approach_gener	1.286	-0.566	0.885	2.099	-1.909	0.369	2.163	1.30
base_keyword	1.286	1.527	-0.395	-0.903	0.384	0.369	2.268	0.85
base_multi	1.286	0.527	1.125	1.097	-0.333	0.369	4.071	0.56
base_score	0.286	0.981	0.885	1.598	-1.051	0.369	3.068	0.82
base_valu	0.286	2.074	0.605	1.097	-0.475	-0.461	3.127	0.89
data_size	0.286	0.527	0.125	1.432	-1.051	-1.290	0.030	0.93
data_social	1.286	-1.566	-1.395	1.265	1.525	0.369	1.484	1.27
perform_variou	0.286	-0.246	-1.155	0.432	-1.333	0.369	-1.648	0.72
reduc_comput	1.286	-0.246	-1.955	2.099	1.242	0.369	2.794	1.31
studi_us	1.055	1.754	0.365	1.598	1.242	0.223	6.237	0.58
us_measur	1.055	1.207	0.125	1.265	-0.051	0.539	4.141	0.52
word_input	1.055	0.207	1.885	-0.903	1.242	0.710	4.196	0.88
workshop_text	1.055	0.207	1.645	-1.736	0.525	0.369	2.064	1.05
accuraci_score	1.055	-1.019	0.085	2.099	0.808	0.369	3.395	0.95
approach_identifi	1.055	2.074	1.645	1.265	-0.485	-1.948	3.606	1.39
base_queri	1.055	-0.566	0.125	-0.402	0.667	0.369	1.246	0.57
determin_word	1.055	0.527	0.365	1.598	-1.192	-1.290	1.063	1.08
maximum_valu	1.055	2.074	0.125	-0.236	-1.051	0.881	2.849	1.00
model_creat	1.823	1.981	1.645	0.264	0.384	0.881	6.977	0.69
take_time	1.823	1.981	0.125	1.265	-1.626	0.369	3.936	1.23
us_number	1.823	-1.019	-1.955	2.099	1.242	-0.461	1.729	1.52
user_us	1.823	0.754	-3.675	-0.236	1.242	0.539	0.448	1.79
averag_time	1.823	0.207	0.365	1.764	-1.333	0.369	3.195	1.07
classifi_predict	1.823	2.074	1.645	1.262	-0.475	0.369	6.698	0.90
knowledg_inform	-0.325	2.074	1.645	-0.903	2.101	-0.461	4.131	1.27
perform_stem	0.443	2.074	1.325	2.099	2.242	0.369	8.552	0.78
valu_given	-1.557	-0.793	0.125	1.265	2.101	0.369	1.510	1.21
word_replac	-2.788	-1.793	-1.395	2.099	2.101	0.369	-1.408	1.90

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
document_appear	0.212	-0.793	0.885	2.099	-0.475	0.369	2.296	0.94
kullback_leibler	-2.019	1.301	-0.395	-0.402	1.384	0.369	0.236	1.16
number_distinct	-1.019	-0.246	-0.635	2.265	0.525	0.369	1.258	1.06
learn_autom	-0.019	0.527	0.885	1.931	1.242	-0.461	4.105	0.79
requir_number	-2.019	1.301	0.885	0.432	-0.051	0.369	0.916	1.06
becom_popular	-2.019	0.527	-0.635	0.432	1.242	-0.290	-0.743	1.04
process_call	0.981	-0.793	1.645	-1.236	2.101	0.539	3.237	1.21
similar_featur	-1.019	0.981	-2.155	2.099	2.242	0.369	2.515	1.59
singl_term	-0.251	0.754	0.885	1.598	1.384	0.710	5.080	0.59
term_calcul	-1.251	-2.566	1.645	0.764	1.242	0.369	0.203	1.48
term_topic	-0.251	0.981	0.365	-0.402	1.242	0.369	2.303	0.59
type_document	-1.251	1.301	0.125	0.764	-1.333	0.369	-0.026	0.98
appli_mathemat	-1.251	0.527	1.645	-0.402	1.525	-0.119	1.926	1.04
creat_word	-1.251	-0.246	1.645	0.432	1.808	-0.461	1.927	1.11
decreas_number	-0.482	-2.566	-0.635	0.432	1.242	0.369	-1.641	1.20
master_degre	1.518	2.527	0.885	0.764	0.667	-0.461	5.900	0.90
test_train	-0.482	-0.566	1.645	2.099	0.949	0.369	4.013	1.00
text_evalu	1.518	2.074	0.125	0.764	0.808	-0.461	4.828	0.84
cosin_angl	-0.482	-1.566	0.885	0.432	0.384	-0.461	-0.809	0.81
evalu_cluster	0.518	-0.246	1.645	-0.570	1.242	0.369	2.957	0.77
evalu_lrec	1.518	0.527	0.605	-1.236	2.101	-0.290	3.225	1.10
given_user	1.518	2.074	1.645	0.432	0.515	0.369	6.552	0.68
includ_step	0.518	2.074	1.645	0.430	1.242	-0.119	5.790	0.76
likelihood_estim	-0.482	2.074	0.885	1.097	-0.192	0.369	3.750	0.85
mine_icdm	0.518	2.074	1.645	-3.570	2.101	0.052	2.819	1.96
model_experi	-0.482	0.207	-0.155	2.099	0.384	0.369	2.421	0.82
optim_number	0.518	-0.246	0.885	1.265	1.091	0.369	3.881	0.50
process_order	-0.482	-1.019	-1.395	1.265	0.525	0.369	-0.738	0.93
queri_queri	2.286	2.754	1.885	2.265	0.808	0.881	10.879	0.73
recent_studi	0.286	-0.019	0.885	-0.069	-0.475	0.369	0.976	0.42
similar_concept	0.286	1.527	1.645	1.931	0.949	0.369	6.707	0.63
strip_program	1.286	0.754	-0.395	0.432	2.101	1.052	5.229	0.77
classifi_emot	2.286	-0.246	0.885	-0.069	-1.333	0.369	1.891	1.11
consid_word	0.286	-1.019	0.125	1.265	0.808	-0.461	1.004	0.76
inform_featur	1.286	1.301	0.365	1.265	0.232	0.369	4.818	0.48
measur_combin	2.286	0.340	0.885	2.099	0.384	0.369	6.362	0.82
model_number	1.055	0.527	1.885	0.764	1.808	-0.290	5.750	0.75
refer_word	1.055	2.074	-1.675	2.099	-0.909	0.369	3.012	1.42
techniqu_stem	1.055	1.301	0.365	-0.903	-0.333	0.369	1.852	0.76
word_letter	1.055	0.754	0.125	1.265	-1.051	-1.290	0.858	1.00
approach_present	2.055	-0.019	-0.195	2.265	2.101	0.369	6.574	1.06

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
integr_data	1.055	0.527	0.805	1.598	2.101	0.369	6.454	0.61
method_data	2.055	1.301	1.645	2.099	0.657	-1.290	6.466	1.17
model_present	1.055	-1.019	0.125	0.432	-1.333	-1.290	-2.032	0.92
multi_dimension	1.823	0.527	0.885	1.432	1.242	1.907	7.816	0.49
select_select	1.823	0.527	-0.635	1.265	-0.768	-0.461	1.752	0.99
system_abl	1.823	2.074	1.645	1.432	0.091	-0.606	6.458	0.98
text_exampl	1.823	1.301	-3.675	-0.402	-1.333	0.369	-1.918	1.83
base_function	1.823	0.207	0.605	1.265	1.808	0.369	6.077	0.66
develop_base	1.823	2.074	1.125	0.430	2.384	-1.119	6.717	1.19
emot_analysi	3.906	2.074	1.645	2.099	2.384	0.881	12.989	0.91
mine_introduct	-0.325	2.207	1.645	2.099	2.101	0.539	8.266	0.95
morpholog_syntact	-1.557	2.074	0.125	1.432	-0.475	0.369	1.968	1.19
score_evalu	-2.557	-0.019	1.125	2.099	2.101	0.539	3.288	1.59
servic_name	0.212	2.074	0.885	-0.402	-1.333	0.369	1.804	1.05
precis_rate	0.981	1.754	1.645	0.764	2.101	0.710	7.955	0.53
order_compar	-1.019	2.074	0.605	1.598	2.242	0.539	6.039	1.12
similar_function	1.749	0.527	0.885	1.265	-1.051	0.369	3.744	0.88
step_algorithm	-0.251	-1.793	1.125	2.432	2.101	0.539	4.153	1.43
neg_emot	1.749	0.754	1.885	1.432	0.525	0.539	6.884	0.56
particular_categor	-1.251	-0.566	1.125	1.265	1.242	0.369	2.184	0.97
advanc_neural	-0.251	-1.019	1.365	1.265	1.242	0.539	3.141	0.89
cluster_form	1.749	-0.246	1.605	0.432	2.242	0.369	6.150	0.89
html_http	1.749	2.074	1.885	-0.236	1.808	0.369	7.649	0.88
particular_document	-0.482	1.301	-1.395	-0.402	0.384	0.539	-0.056	0.86
reduc_dimens	1.518	1.301	1.645	0.432	-1.192	0.881	4.584	0.96
stem_approach	-0.482	-0.019	1.125	1.265	0.525	0.539	2.953	0.61
twitter_social	0.518	0.754	-0.635	-0.402	0.384	0.369	0.987	0.50
accuraci_text	0.518	-0.246	0.125	-0.903	2.101	0.369	1.963	0.92
learn_theori	0.518	2.074	0.885	-0.570	2.101	0.710	5.718	0.93
select_appropri	0.518	-1.019	0.125	1.265	0.667	0.369	1.923	0.69
task_document	0.286	-0.246	0.885	0.764	-1.333	0.369	0.724	0.75
term_index	0.286	1.754	1.125	0.764	0.384	-0.461	3.852	0.69
text_model	1.286	2.074	0.885	-0.402	1.091	0.539	5.473	0.75
time_frame	0.286	1.527	1.885	-0.570	1.242	0.369	4.739	0.84
analysi_determin	0.286	0.754	1.125	0.432	1.667	0.539	4.802	0.47
classifi_class	2.286	2.301	0.845	-0.236	0.384	0.369	5.948	0.97
creativ_common	0.286	0.207	0.885	-1.236	0.384	0.369	0.895	0.66
lower_valu	1.286	-0.793	1.645	1.265	-2.051	0.369	1.721	1.32
match_algorithm	1.055	1.301	0.885	2.598	1.232	0.369	7.439	0.68
problem_data	1.055	2.754	0.885	1.430	2.101	0.539	8.764	0.76
techniqu_term	1.055	-1.339	0.885	1.265	0.525	-0.461	1.930	0.93

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
word_algorithm	1.055	-0.019	0.885	0.097	1.384	0.369	3.769	0.51
class_cluster	1.055	1.301	1.885	0.929	2.101	0.369	7.639	0.58
evalu_topic	2.055	2.074	1.645	-0.236	2.374	0.369	8.280	0.97
process_describ	2.055	1.527	-0.155	2.099	-1.051	0.369	4.844	1.18
system_inform	1.055	-1.566	1.125	-0.236	1.242	0.369	1.988	0.99
tion_retriev	1.055	-3.339	1.125	-1.236	2.101	0.369	0.074	1.81
total_score	1.823	1.301	-0.635	-1.069	0.667	-0.461	1.625	1.06
user_select	1.823	1.301	1.645	-2.570	-1.333	-0.461	0.405	1.65
word_defin	1.823	1.301	1.645	1.931	2.232	0.369	9.300	0.60
word_find	1.823	-0.246	1.125	1.430	1.242	0.369	5.743	0.69
collect_us	1.823	0.981	1.645	2.099	0.091	0.881	7.520	0.68
data_perform	1.823	1.301	-0.635	-2.069	-0.192	0.369	0.596	1.28
dice_similar	4.138	1.301	0.885	2.099	1.242	0.369	10.033	1.22
formal_defin	-1.325	2.074	0.365	0.432	2.101	0.369	4.015	1.17
respons_time	-2.557	-0.246	0.885	0.432	2.101	0.369	0.983	1.41
techniqu_order	0.212	2.074	1.085	2.099	2.242	0.369	8.080	0.84
distribut_similar	-2.019	-0.246	-0.635	1.265	1.242	0.369	-0.025	1.14
probabl_term	-1.251	-2.339	0.125	2.099	2.101	0.369	1.102	1.62
document_assign	-1.251	0.527	1.645	1.432	0.667	-0.461	2.559	1.01
leibler_diverg	-1.251	-0.246	0.885	-1.236	2.242	0.369	0.763	1.22
bucklei_term	-0.251	-0.246	0.885	-0.402	0.384	0.369	0.738	0.46
categor_comput	-0.251	1.301	0.125	1.764	0.384	0.369	3.691	0.69
collect_dataset	-0.251	0.527	-1.395	2.099	0.525	0.369	1.874	1.04
introduct_modern	1.749	2.074	1.125	-1.069	1.242	-0.461	4.660	1.15
keyword_arab	-1.251	1.301	-2.155	0.598	2.101	0.369	0.962	1.45
search_us	-0.482	0.527	1.645	-0.402	-2.192	0.369	-0.536	1.17
size_document	-0.482	0.527	-0.635	0.931	2.101	0.369	2.810	0.91
system_page	-0.482	-0.019	1.645	1.265	-1.192	0.369	1.585	0.97
time_document	-0.482	2.074	-0.635	-2.903	1.242	0.369	-0.336	1.58
charact_number	-0.482	0.527	0.125	2.099	-2.192	-0.461	-0.384	1.29
document_select	0.518	1.301	1.885	1.432	-1.333	-0.290	3.512	1.11
effect_method	0.286	1.527	0.885	-0.402	-0.333	0.539	2.502	0.67
languag_complex	0.286	-1.793	-0.395	2.099	0.384	0.369	0.949	1.15
method_take	1.286	-0.019	0.125	0.598	2.101	-1.290	2.801	1.06
signific_amount	0.286	-1.793	1.645	-1.236	0.384	0.369	-0.345	1.14
analysi_classif	0.286	2.074	1.645	-0.069	-1.192	-0.461	2.283	1.14
appli_comput	1.286	-0.566	0.365	2.099	2.384	0.369	5.936	1.04
document_obtain	1.286	1.661	-0.635	2.265	2.101	0.369	7.046	1.02
main_focu	1.286	-0.246	0.125	-1.069	2.101	0.539	2.736	1.03
model_outperform	0.286	1.301	-2.675	-0.402	2.101	0.369	0.979	1.50
probabl_class	1.055	-0.566	1.645	-0.402	0.384	-0.461	1.654	0.84

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
represent_method	1.055	0.527	0.885	1.265	-1.051	-1.290	1.392	1.02
term_mean	1.055	-1.793	0.885	2.099	1.525	-0.119	3.652	1.27
word_singl	1.055	-0.246	-0.635	2.099	0.949	0.369	3.590	0.90
algorithm_present	1.055	-1.793	0.365	1.265	-0.475	0.369	0.785	1.03
approach_comput	2.055	-0.019	0.885	0.764	0.525	0.369	4.578	0.65
corpu_includ	1.055	-1.566	-1.395	1.265	2.242	0.369	1.969	1.39
data_analyz	1.055	1.207	1.645	-0.069	1.384	0.369	5.590	0.59
data_experi	1.055	-0.246	0.885	-0.069	0.525	0.369	2.518	0.47
depend_word	1.055	1.301	1.885	1.265	0.091	0.710	6.307	0.55
describ_method	1.055	1.301	0.605	2.099	2.091	0.369	7.518	0.67
distribu_tion	1.055	1.981	0.885	-1.903	2.242	0.369	4.628	1.36
frequenc_featur	1.055	-0.246	1.645	1.598	-1.051	0.369	3.369	0.98
good_accuraci	1.055	2.074	0.845	0.598	0.667	0.369	5.607	0.55
human_behavior	1.055	1.301	0.125	-0.404	2.101	0.369	4.546	0.83
lucen_apach	1.055	0.981	-1.155	1.265	1.384	0.369	3.897	0.87
main_advantag	1.055	-1.019	0.125	-1.236	0.384	0.369	-0.323	0.81
saudi_arabia	1.823	-1.019	0.125	0.764	-0.475	0.369	1.587	0.90
tag_tag	1.823	1.754	1.645	-0.402	1.091	0.369	6.279	0.82
us_automat	1.823	2.074	1.645	1.265	-0.192	1.565	8.180	0.74
word_inform	1.823	1.301	0.885	-1.736	-0.475	-0.461	1.337	1.22
analysi_identifi	1.823	1.754	0.885	0.598	1.949	0.369	7.378	0.63
common_attribut	1.823	2.074	1.885	1.265	2.657	0.369	10.073	0.71
exampl_tweet	1.823	2.074	0.885	2.096	2.101	0.369	9.347	0.68
model_find	1.823	-1.566	0.885	0.432	0.667	0.369	2.608	1.02
normal_term	1.823	-0.246	0.125	-0.402	1.525	-0.290	2.535	0.90
polar_text	1.823	0.754	0.885	2.099	0.232	-0.461	5.333	0.88
preci_sion	1.823	1.527	-1.155	1.598	1.242	-0.290	4.746	1.11
system_includ	1.823	1.301	0.125	1.265	0.808	-0.948	4.374	0.91
text_thereför	1.443	2.074	1.645	2.432	0.525	0.369	8.488	0.75
theori_applic	2.981	1.527	0.885	0.432	0.384	0.369	6.576	0.94
us_linguist	-1.019	0.527	-0.155	2.099	2.101	0.369	3.921	1.14
word_correspond	2.981	2.301	1.605	2.099	2.384	0.369	11.737	0.82
neg_train	-1.019	2.074	-1.395	1.432	2.242	0.369	3.702	1.43
cluster_hierarch	0.749	2.074	-1.395	1.265	1.525	0.369	4.587	1.11
document_reduc	-0.251	2.301	1.645	1.598	2.242	-0.119	7.416	1.04
index_databas	-0.251	-1.019	0.125	2.099	0.384	0.369	1.705	0.94
stage_text	0.749	1.301	0.885	0.931	2.101	0.539	6.506	0.51
class_repres	-0.251	0.527	-0.395	1.265	2.242	0.369	3.757	0.90
cluster_evalu	1.749	1.527	1.645	-0.236	0.384	0.369	5.438	0.76
document_includ	2.749	1.301	0.885	1.931	2.101	-0.461	8.506	1.03
experiment_studi	-0.251	2.074	0.125	0.097	2.101	0.369	4.514	0.96

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
identifi_topic	-1.251	-0.246	0.885	-0.236	2.101	0.369	1.622	1.05
social_interact	-0.482	-0.246	1.645	-0.069	1.242	0.369	2.458	0.78
user_label	-0.482	0.527	-1.155	2.099	2.384	0.369	3.741	1.27
vector_similar	0.518	2.207	1.645	0.764	2.101	0.369	7.603	0.75
word_normal	-0.482	0.527	1.885	2.099	0.949	0.369	5.347	0.89
descend_order	-0.482	1.527	0.885	1.265	-2.192	0.369	1.372	1.26
form_verb	-0.482	1.527	0.885	-1.069	1.242	0.369	2.471	0.93
semant_represent	-0.482	1.301	0.885	0.432	0.667	0.539	3.341	0.54
stem_gener	0.518	1.754	0.885	2.099	1.525	-1.290	5.491	1.12
stem_porter	1.518	0.754	1.885	2.265	1.384	-0.290	7.516	0.83
term_contain	0.286	-0.019	1.125	-0.236	2.101	0.369	3.625	0.79
text_obtain	1.286	0.527	0.885	-0.402	1.525	0.539	4.361	0.62
us_languag	0.286	2.074	0.125	1.265	-0.051	-0.461	3.239	0.86
us_queri	0.286	1.301	1.645	-1.236	0.808	0.369	3.173	0.92
document_content	0.286	-1.019	1.885	2.099	-1.192	0.369	2.427	1.27
document_increas	0.286	-0.246	0.125	0.764	2.101	0.539	3.569	0.74
evalu_qualiti	0.286	1.661	1.645	1.265	0.384	0.369	5.609	0.60
filter_us	0.286	-0.246	1.645	1.265	-0.192	-0.461	2.298	0.80
huge_number	1.286	2.074	1.645	0.264	1.525	0.369	7.162	0.66
match_user	1.286	1.527	0.885	0.264	2.101	0.369	6.431	0.64
remov_letter	2.055	2.074	0.365	-0.069	0.384	-0.461	4.347	0.99
step_preprocess	2.055	1.301	0.885	1.265	-0.192	-0.119	5.195	0.80
weight_score	1.055	1.301	0.085	2.099	0.667	0.369	5.574	0.66
word_vocabulari	1.055	0.754	1.325	2.099	1.242	0.369	6.843	0.53
avail_abl	1.055	0.527	0.125	0.432	-0.192	0.369	2.315	0.38
document_distribut	1.055	1.434	0.885	1.598	1.242	0.369	6.582	0.40
extract_task	1.055	0.754	-0.635	2.099	-1.192	0.369	2.449	1.08
imag_analysi	1.055	1.527	-1.395	-0.402	1.384	0.369	2.537	1.04
languag_make	1.055	-0.793	0.845	2.099	1.242	0.369	4.816	0.88
obtain_cluster	1.055	-0.019	0.125	0.598	0.384	0.369	2.510	0.35
process_identifi	1.055	-0.246	0.885	-1.236	0.384	0.539	1.381	0.77
significantli_reduc	1.055	1.207	0.885	1.265	-0.475	0.539	4.476	0.60
step_extract	1.055	1.754	-1.675	1.265	2.101	0.369	4.868	1.24
step_identifi	1.823	2.074	0.125	-1.069	-0.192	0.369	3.129	1.10
system_term	1.823	-0.019	1.645	-1.069	0.525	0.369	3.273	0.98
us_graph	1.823	0.527	1.645	0.764	0.667	-1.290	4.137	1.01
us_knowledg	1.823	1.527	1.885	0.598	-1.333	-0.290	4.210	1.19
approach_machin	1.823	2.301	-0.155	0.598	2.525	0.369	7.460	1.02
independ_assumpt	1.823	-0.246	-1.155	0.432	1.242	0.539	2.635	0.96
method_mean	1.823	0.434	0.885	1.265	0.667	0.369	5.442	0.51
number_sampl	1.823	1.301	-1.395	1.265	-2.192	-0.461	0.341	1.50

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
origin_dataset	0.443	1.301	0.125	2.099	1.242	0.369	5.579	0.68
problem_automat	-0.019	-0.246	1.645	2.099	1.242	-1.290	3.431	1.18
twitter_stream	-0.251	1.301	-0.635	0.432	1.242	0.369	2.457	0.71
user_system	0.749	0.527	1.645	-0.402	1.384	0.369	4.271	0.67
data_distribut	0.749	0.527	1.645	2.099	-0.475	-0.290	4.255	0.93
document_call	2.518	2.301	1.845	2.099	1.242	-0.461	9.544	1.00
avail_document	2.518	-0.246	1.645	-0.236	1.242	0.369	5.291	1.01
calcul_distanc	1.518	2.074	1.645	0.432	0.667	-1.290	5.045	1.11
input_train	-0.482	1.301	1.365	1.598	1.242	0.369	5.392	0.73
base_emot	2.518	1.301	0.125	2.598	0.384	0.369	7.293	1.02
develop_evalu	-0.482	1.301	1.645	0.432	0.667	-0.461	3.101	0.80
featur_evalu	-0.482	-1.019	0.885	0.432	1.242	0.369	1.425	0.77
linear_function	0.286	1.527	1.645	2.264	2.101	0.369	8.191	0.78
particular_domain	2.286	1.301	1.885	-1.069	0.384	0.369	5.155	1.12
randomli_chosen	1.286	2.074	1.125	0.432	-1.333	-0.461	3.123	1.14
valu_measur	0.286	0.981	1.645	0.598	1.242	-0.461	4.291	0.68
algorithm_mine	0.286	2.074	0.365	-0.903	2.101	0.369	4.291	1.07
analyz_tweet	0.286	0.754	0.885	-0.402	0.384	0.369	2.275	0.41
imag_video	0.286	0.527	0.125	0.432	-0.475	0.369	1.264	0.33
measur_find	0.286	1.301	-0.635	2.265	0.384	-0.290	3.311	0.98
number_retriev	1.286	1.301	1.645	2.099	2.949	0.710	9.990	0.71
process_automat	1.286	-0.246	0.125	1.764	2.101	0.369	5.399	0.87
process_take	2.055	1.527	-0.635	0.598	1.384	0.369	5.297	0.88
requir_user	1.055	2.434	1.645	1.265	-0.475	0.369	6.292	0.92
rule_combin	1.055	1.527	1.365	2.265	-1.333	0.369	5.247	1.14
signific_word	2.055	-0.246	1.125	1.931	2.101	0.369	7.333	0.90
appli_stem	1.055	0.527	0.885	2.099	0.667	-0.119	5.113	0.67
applic_servic	1.055	-0.246	-0.635	1.265	0.384	-0.461	1.362	0.73
base_structur	1.055	2.527	1.125	-0.236	0.384	0.369	5.223	0.87
calcu_late	1.055	1.527	1.645	2.265	0.667	0.881	8.040	0.54
correspond_sentenc	1.055	0.207	1.645	0.764	2.242	0.369	6.282	0.71
experi_text	1.055	2.074	-0.395	2.099	0.949	0.369	6.150	0.89
featur_calcul	1.055	0.527	-0.635	-0.236	1.242	0.369	2.322	0.66
interact_user	1.055	-1.019	0.885	-0.402	2.101	0.710	3.329	1.01
map_word	2.055	0.527	0.125	0.432	-0.475	-0.461	2.203	0.85
order_understand	1.055	1.301	-0.635	0.432	0.384	-0.290	2.246	0.68
search_retriev	2.055	1.301	1.125	2.265	0.949	0.369	8.063	0.65
token_remov	1.823	1.301	1.645	2.432	1.242	1.565	10.007	0.39
us_gener	1.823	2.074	1.605	1.265	-0.051	0.369	7.085	0.77
vector_train	1.823	2.301	0.365	0.432	-0.192	0.369	5.097	0.89
weight_obtain	1.823	-1.566	1.125	1.432	2.101	-0.461	4.454	1.32

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
class_posit	1.823	-0.246	-1.395	-0.402	2.101	0.539	2.420	1.24
commun_comput	1.823	1.207	1.645	2.099	-1.051	0.369	6.092	1.08
consist_phase	1.823	1.527	-0.195	2.099	2.101	0.369	7.723	0.89
correctli_identifi	1.823	1.434	0.125	1.265	1.242	0.539	6.429	0.57
document_form	1.823	-0.246	1.365	-0.402	1.384	0.369	4.292	0.86
experi_dataset	1.823	-0.793	0.125	0.432	0.384	0.369	2.339	0.77
knowledg_resourc	1.823	0.754	1.645	0.432	-3.051	0.369	1.972	1.61
languag_social	0.443	2.074	1.125	2.099	1.242	0.369	7.352	0.69
system_measur	-1.788	2.074	0.125	1.432	2.101	0.369	4.312	1.35
text_method	-2.019	0.527	1.125	2.099	2.242	0.369	4.342	1.42
word_chang	-2.019	2.074	0.885	-0.402	1.242	0.369	2.148	1.31
engin_issu	-0.019	2.074	-1.395	2.099	2.242	0.369	5.369	1.35
identifi_us	1.981	1.301	1.645	2.099	0.667	0.369	8.060	0.64
determin_number	0.749	-0.019	0.125	2.099	2.101	0.369	5.423	0.88
normal_word	-1.251	2.301	0.885	0.598	2.101	0.539	5.173	1.17
text_identifi	-1.251	2.074	0.885	-0.069	2.101	0.369	4.108	1.18
world_congress	-1.251	1.301	0.885	-1.236	2.101	0.369	2.168	1.25
comparison_method	1.518	0.527	1.885	2.099	0.667	0.369	7.064	0.68
document_improv	0.518	-0.246	0.885	0.432	1.242	0.369	3.199	0.46
precis_calcul	1.286	1.301	0.365	-0.402	1.242	0.369	4.160	0.64
stem_document	1.286	-0.246	1.885	2.099	0.667	0.369	6.059	0.83
centroid_cluster	0.286	2.074	1.645	0.432	-1.051	0.369	3.755	1.01
data_approach	0.286	1.527	1.125	2.265	0.525	0.369	6.097	0.71
indic_word	1.286	1.527	1.645	-0.236	0.384	0.369	4.975	0.70
interest_user	0.286	1.301	-1.395	0.432	1.242	0.369	2.234	0.89
punctuat_remov	1.286	2.074	0.365	1.265	0.667	0.369	6.025	0.61
set_featur	1.055	1.301	0.125	1.432	0.384	-0.290	4.006	0.64
twitter_facebook	1.055	0.527	0.365	2.099	-0.333	0.369	4.081	0.75
variou_techniqu	1.055	-0.019	0.885	1.265	-0.475	0.369	3.079	0.62
word_ad	1.055	0.754	1.645	2.099	-2.051	0.369	3.870	1.33
accu_raci	1.055	2.074	0.365	2.099	1.808	0.539	7.940	0.71
algorithm_accuraci	1.055	2.074	0.125	-1.236	2.384	0.539	4.941	1.22
algorithm_consist	1.055	0.527	-0.395	0.432	2.101	-0.461	3.259	0.87
algorithm_naiv	1.055	1.301	1.645	-0.903	2.384	0.369	5.850	1.04
collect_collect	1.055	-0.019	1.645	-0.402	1.384	0.369	4.030	0.74
compar_us	2.055	1.301	0.885	2.099	0.091	0.369	6.798	0.77
comparison_documen								
t	1.055	1.301	0.125	1.598	1.525	0.369	5.972	0.56
comparison_precis	1.055	0.527	1.645	-2.069	2.101	0.710	3.969	1.33
describ_process	2.055	2.074	1.645	0.596	2.101	0.369	8.839	0.72
develop_develop	1.055	1.754	0.885	-1.236	2.242	0.369	5.069	1.11

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
equal_length	1.055	0.527	1.125	1.265	1.242	-0.119	5.095	0.50
featur_perform	2.055	2.074	0.885	3.097	0.384	0.369	8.863	1.01
frequenc_corpu	1.055	-0.246	1.645	0.432	0.667	0.369	3.920	0.59
http_lucen	1.055	2.301	1.125	-0.236	1.242	-0.461	5.026	0.94
keyword_queri	1.055	2.301	1.125	-0.236	2.101	-0.290	6.056	1.01
measur_estim	1.055	1.981	-1.395	2.265	2.101	0.369	6.375	1.28
model_take	1.055	1.301	0.125	-0.903	2.101	0.369	4.047	0.95
obtain_word	1.055	-1.339	1.645	2.099	0.384	0.369	4.211	1.11
probabilist_classifi	1.055	0.754	-0.155	1.265	2.101	0.369	5.388	0.71
process_activ	1.055	1.527	0.885	0.764	2.242	0.539	7.013	0.57
score_comput	1.055	2.074	0.365	2.265	-1.192	0.369	4.935	1.17
step_select	1.055	0.981	0.885	-0.402	1.242	0.369	4.129	0.56
system_learn	1.823	-0.246	0.125	0.598	1.384	0.369	4.052	0.72
term_relev	1.823	-0.246	0.885	-1.069	1.242	0.369	3.003	0.96
word_structur	1.823	2.074	1.365	-0.236	1.384	0.539	6.950	0.79
word_type	1.823	2.074	-0.635	-2.069	1.242	-0.461	1.974	1.50
algorithm_classif	1.823	-1.793	0.125	1.265	0.384	0.369	2.173	1.13
base_mean	1.823	1.527	0.885	1.097	1.242	0.369	6.943	0.46
clean_data	1.823	2.074	1.125	1.432	-0.051	0.369	6.772	0.76
document_creat	1.823	1.301	0.885	1.265	1.091	0.369	6.733	0.44
document_remov	1.823	0.754	1.645	0.931	1.384	0.369	6.905	0.51
extract_name	1.823	0.527	0.125	1.265	-0.192	0.369	3.917	0.69
func_tion	1.823	2.074	0.365	-1.903	1.242	0.369	3.970	1.32
issn_issn	1.823	2.527	0.125	2.265	0.667	-0.461	6.947	1.12
matrix_term	1.823	1.301	1.645	0.432	0.667	-0.119	5.748	0.69
meaning_inform	1.823	2.527	1.885	-0.402	-0.475	0.539	5.898	1.17
method_detect	1.823	2.074	0.365	0.432	0.808	0.369	5.870	0.71
output_process	1.823	1.527	0.885	0.764	1.525	0.369	6.893	0.51
system_avail	1.212	2.074	1.645	1.265	2.101	-1.290	7.007	1.15
system_detect	0.981	1.527	1.885	2.265	2.101	0.369	9.127	0.66
text_sourc	0.981	2.074	0.885	0.432	1.242	0.369	5.982	0.57
time_base	1.981	0.754	0.885	2.099	2.101	0.369	8.187	0.71
remov_step	-1.251	2.301	0.885	2.099	-0.475	0.369	3.927	1.28
parent_node	0.749	1.527	0.885	1.265	2.242	0.369	7.037	0.60
perform_obtain	2.749	2.074	1.645	2.432	-0.475	0.369	8.793	1.15
word_lead	0.749	2.074	1.645	-0.236	2.101	0.539	6.873	0.86
appear_text	-0.482	1.301	1.645	-1.236	1.242	0.369	2.838	1.04
cluster_repres	-0.482	2.301	0.885	0.598	2.242	0.369	5.912	1.00
inform_servic	1.518	0.754	1.645	0.432	2.101	-0.461	5.988	0.86
predefin_class	2.518	1.527	1.125	2.265	1.242	0.369	9.046	0.72
applic_inform	-0.482	1.301	1.365	0.432	2.101	0.369	5.084	0.84

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
becom_increasingli	1.518	1.301	-0.635	2.099	0.384	0.369	5.034	0.90
classif_data	0.286	2.074	1.125	1.432	0.384	0.539	5.840	0.64
inform_social	0.286	1.754	1.645	1.265	0.525	0.369	5.844	0.60
lower_number	1.286	2.301	1.885	1.432	0.384	0.539	7.826	0.68
techniqu_featur	0.286	1.301	1.885	0.764	1.242	0.369	5.847	0.56
affix_word	1.286	0.754	0.885	0.598	2.101	0.369	5.992	0.57
classif_arab	0.286	0.527	1.645	0.432	1.242	0.710	4.842	0.48
dataset_avail	0.286	-0.246	0.125	2.099	1.242	-0.461	3.045	0.89
dataset_creat	0.286	2.074	0.125	1.265	0.667	0.369	4.785	0.68
featur_semant	0.286	0.527	-1.395	2.099	2.242	0.369	4.128	1.23
function_similar	0.286	2.301	0.885	2.099	-0.192	0.369	5.747	0.93
perform_step	1.286	1.301	0.125	1.265	1.242	-0.290	4.929	0.65
repres_singl	0.286	2.074	1.645	-0.069	2.101	-0.290	5.747	1.01
step_gener	1.055	0.981	1.365	1.265	2.101	0.369	7.135	0.52
time_number	1.055	-0.246	0.125	2.432	2.101	-0.461	5.005	1.12
token_us	2.055	2.301	0.885	2.598	1.525	0.369	9.732	0.79
vector_number	2.055	-1.566	1.645	1.265	1.242	0.369	5.009	1.19
approach_pattern	1.055	2.074	0.125	-0.402	2.384	0.539	5.775	1.00
contain_topic	1.055	2.074	1.645	-1.236	-1.333	0.369	2.573	1.32
content_type	1.055	1.301	-2.155	1.265	2.242	0.369	4.076	1.38
degre_similar	1.055	0.207	0.125	2.099	2.242	0.369	6.096	0.87
form_inform	1.055	1.527	1.645	2.099	0.949	0.369	7.644	0.56
improv_us	1.055	1.301	-1.395	1.265	0.384	0.369	2.978	0.93
inform_form	1.055	1.301	-0.395	0.598	2.101	0.369	5.027	0.78
interest_pattern	1.055	1.527	0.605	2.099	1.242	-0.461	6.067	0.80
model_produc	1.055	2.301	1.645	0.598	-0.475	-0.461	4.663	1.02
present_text	2.055	2.074	0.125	1.265	0.808	0.369	6.695	0.76
score_precis	1.823	2.981	1.885	1.764	2.101	0.369	10.922	0.77
stem_exampl	1.823	-0.246	1.645	2.099	1.808	-0.461	6.668	1.05
text_appli	1.823	0.527	0.125	1.265	2.101	-0.948	4.893	1.04
valu_chosen	1.823	2.074	0.885	0.432	-1.051	0.369	4.532	1.03
automat_emot	1.823	-0.246	0.885	-0.069	2.101	0.369	4.862	0.89
base_perform	1.823	1.301	1.125	1.432	1.667	0.369	7.715	0.47
cluster_topic	1.823	2.074	2.125	1.265	-2.192	0.539	5.635	1.50
contain_specif	1.823	2.074	1.605	0.764	1.242	0.369	7.877	0.59
data_describ	1.823	2.074	0.125	1.432	0.667	0.539	6.660	0.71
data_estim	1.823	1.527	0.125	1.265	-1.333	0.369	3.776	1.07
data_user	1.823	0.527	1.125	0.598	0.384	0.369	4.826	0.52
electron_commun	1.823	2.074	0.885	0.764	0.525	-0.461	5.611	0.84
exist_techniqu	1.823	2.074	0.885	-0.236	2.667	0.369	7.582	1.01
frequenc_text	1.823	1.301	0.885	0.598	-1.333	0.369	3.642	0.99

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
languag_stem	1.823	0.527	1.845	2.432	2.101	0.369	9.096	0.78
method_topic	1.823	0.754	0.845	1.265	2.101	0.369	7.156	0.61
model_increas	1.823	1.527	1.645	2.099	-1.051	0.539	6.583	1.08
object_base	1.823	-0.246	2.125	0.598	2.242	0.369	6.911	0.95
produc_cluster	1.823	1.301	-0.635	2.099	0.808	0.369	5.764	0.92
rela_tionship	1.823	2.074	1.125	1.931	1.384	0.369	8.705	0.58
signific_number	1.823	1.301	1.645	0.764	1.242	-1.119	5.657	0.98
similar_semant	1.823	2.301	1.885	0.432	1.242	-0.948	6.735	1.10
system_creat	1.823	1.527	2.125	1.265	0.384	0.710	7.835	0.60
time_accuraci	3.443	2.074	1.645	2.099	2.101	0.539	11.901	0.85
topic_us	1.981	2.074	1.645	0.432	1.242	0.369	7.742	0.68
train_word	1.981	0.527	1.885	2.099	2.101	0.369	8.961	0.74
word_valu	1.749	2.074	0.885	2.099	0.384	-0.461	6.730	0.95
semant_concept	-0.482	2.074	1.645	2.099	-1.333	0.539	4.541	1.31
languag_form	0.518	0.754	0.885	1.265	2.101	0.369	5.891	0.58
stemmer_compar	-0.482	-0.246	1.645	1.265	1.242	0.369	3.792	0.80
distribut_class	2.518	-0.246	1.645	2.099	0.384	0.369	6.767	1.01
binari_valu	0.518	2.074	0.125	0.598	2.101	0.369	5.784	0.81
consid_number	1.518	0.527	0.125	2.099	1.242	0.369	5.879	0.70
document_therefor	1.518	1.301	-0.635	2.099	1.242	0.369	5.893	0.88
gener_train	0.286	1.301	1.885	1.265	1.384	-0.461	5.660	0.79
higher_weight	0.286	1.527	0.885	2.265	2.101	0.710	7.775	0.73
method_present	0.286	1.301	0.885	2.099	0.667	0.369	5.606	0.62
word_preposit	0.286	2.301	0.125	0.432	1.242	0.369	4.754	0.76
approach_select	0.286	1.301	0.125	0.432	2.242	0.369	4.754	0.75
assign_cluster	1.286	2.074	1.125	2.099	-0.333	0.369	6.619	0.87
cluster_compar	1.286	1.527	1.645	1.265	1.525	0.369	7.617	0.43
form_form	2.286	2.074	1.845	2.099	1.242	0.369	9.915	0.66
grow_rapidli	1.286	2.074	0.125	2.099	0.667	0.369	6.619	0.78
matrix_contain	2.286	1.301	2.845	2.099	2.101	0.369	11.000	0.80
method_semant	0.286	2.074	1.645	1.931	1.242	0.369	7.547	0.71
term_identifi	1.055	0.527	-0.635	2.099	2.242	-0.461	4.827	1.12
text_present	2.055	2.074	-0.635	1.432	0.384	0.369	5.677	0.99
topic_similar	1.055	0.527	1.885	2.099	-0.333	0.369	5.601	0.85
vector_input	1.055	-0.246	0.885	2.099	-0.475	0.369	3.686	0.86
analysi_comput	1.055	0.754	0.885	2.432	2.101	0.539	7.765	0.71
analysi_problem	1.055	-1.566	0.885	2.099	2.101	0.369	4.941	1.24
approach_compar	1.055	2.434	1.645	2.099	1.242	0.369	8.843	0.68
emerg_technolog	1.055	0.207	0.885	1.265	2.101	0.369	5.881	0.62
exist_algorithm	1.055	1.301	0.885	1.265	0.667	0.369	5.541	0.33
graph_model	1.055	2.074	0.885	1.097	2.101	0.369	7.580	0.63

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
luhn_automat	1.055	2.074	0.125	0.764	2.101	-0.461	5.658	0.94
method_construct	1.055	2.074	0.885	-0.903	2.101	0.369	5.580	1.03
order_measur	1.055	1.301	-0.635	2.099	0.525	0.369	4.713	0.85
perform_fold	2.055	0.981	1.645	0.598	2.101	0.369	7.747	0.68
remov_nois	1.055	2.074	1.645	1.598	-1.333	0.369	5.407	1.13
similar_approach	1.823	1.301	1.645	-0.402	-1.333	0.369	3.402	1.15
system_refer	1.823	0.527	1.645	0.598	-0.475	0.369	4.487	0.78
tool_provid	1.823	1.301	1.645	0.764	0.525	0.369	6.427	0.55
transact_pattern	1.823	2.301	0.365	1.432	0.384	0.369	6.673	0.78
analysi_knowledg	1.823	2.074	1.125	1.598	-0.475	0.369	6.514	0.89
base_appli	1.823	0.527	0.885	0.764	1.242	0.369	5.610	0.48
base_rank	1.823	0.527	0.885	0.432	-0.475	0.369	3.561	0.69
classifi_term	1.823	-0.019	1.645	-0.402	1.242	0.369	4.657	0.84
crucial_role	1.823	0.527	1.125	0.764	2.101	0.369	6.709	0.65
featur_learn	1.823	2.074	0.885	1.097	2.101	0.539	8.519	0.61
field_data	1.823	2.074	-1.395	0.764	2.101	0.369	5.736	1.24
function_defin	1.823	2.074	0.125	1.265	1.242	1.052	7.582	0.62
gener_architectur	1.823	2.301	1.645	1.265	-0.051	0.369	7.352	0.82
good_featur	1.823	1.301	0.885	1.265	-0.192	0.369	5.450	0.66
lemmat_word	1.823	1.301	1.365	2.598	1.242	0.369	8.697	0.67
mathemat_scienc	1.823	1.301	1.645	1.764	-0.475	0.369	6.427	0.85
media_content	1.823	1.207	1.645	2.099	0.384	0.539	7.697	0.64
model_machin	1.823	2.074	0.885	-0.069	1.242	-0.461	5.494	0.93
morpho_syntact	1.823	-0.566	1.645	0.432	2.101	0.369	5.803	0.96
number_attribut	1.823	2.074	0.885	-0.069	0.384	0.369	5.465	0.79
number_concept	1.823	1.527	1.645	1.265	1.525	-1.290	6.496	1.07
perform_dataset	1.823	1.527	1.885	1.432	-0.475	0.369	6.561	0.86
similar_group	1.823	-1.019	1.645	1.265	0.384	-0.461	3.637	1.07
simpl_probabilist	1.823	2.207	0.885	1.265	2.242	0.369	8.791	0.69
solv_issu	1.823	0.207	1.645	0.432	1.242	0.369	5.718	0.64
split_text	1.823	2.074	2.125	0.598	1.525	0.369	8.514	0.69
step_find	1.823	1.301	1.645	1.931	1.384	0.369	8.452	0.52
stochast_gradient	-0.019	2.301	1.645	1.265	2.101	0.369	7.661	0.85
text_step	-0.019	2.074	1.885	2.099	1.242	0.369	7.649	0.84
third_type	2.981	2.301	1.645	2.099	1.242	0.369	10.636	0.83
type_system	0.749	2.074	0.885	2.265	1.242	0.369	7.584	0.69
cluster_correspond	0.518	2.301	0.885	1.265	1.242	0.369	6.579	0.63
compar_origin	-0.482	2.074	1.645	0.764	2.101	0.369	6.470	0.95
sequenc_model	-0.482	1.301	1.645	2.099	-0.475	0.369	4.456	1.01
rule_defin	0.518	1.301	1.645	2.099	0.384	-0.461	5.485	0.86
correspond_featur	0.286	0.527	0.125	2.265	2.101	0.369	5.673	0.88

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
process_search	2.286	1.301	0.125	1.265	2.242	0.369	7.588	0.83
therefor_develop	1.286	0.527	0.885	0.432	2.101	0.369	5.599	0.61
word_indic	0.286	1.301	0.885	0.432	1.242	0.369	4.514	0.41
catégori_us	0.286	0.527	0.365	2.099	2.101	0.369	5.746	0.81
classif_new	0.286	1.301	1.645	2.099	2.101	1.052	8.483	0.63
correspond_topic	0.286	2.074	0.365	1.265	2.101	-0.461	5.630	0.95
dictionari_dictionari	0.286	1.527	1.885	1.265	1.242	0.369	6.574	0.58
document_normal	0.286	2.074	0.885	0.598	2.101	0.539	6.483	0.73
engin_retriev	1.286	1.301	1.645	0.432	1.242	-0.461	5.445	0.71
inquiri_word	0.286	2.074	0.885	-0.402	2.101	-0.461	4.483	1.05
remov_arab	1.055	2.301	0.365	0.432	2.101	0.369	6.621	0.81
requir_addit	1.055	-0.019	1.645	2.099	0.384	0.369	5.531	0.75
step_token	2.055	2.074	1.365	2.099	0.384	0.539	8.515	0.72
us_normal	1.055	1.301	1.645	1.265	0.667	0.369	6.301	0.42
alphabet_charact	1.055	1.301	1.645	2.099	-2.192	0.369	4.276	1.40
base_implement	1.055	0.754	1.645	1.265	0.384	0.369	5.471	0.46
base_pattern	1.055	1.301	1.645	1.265	-0.475	-0.461	4.330	0.86
base_probabl	1.055	2.074	1.605	1.265	2.242	0.369	8.610	0.63
case_text	1.055	1.301	0.125	0.432	2.242	0.369	5.523	0.72
charact_punctuat	1.055	1.301	-0.635	1.265	1.242	0.369	4.596	0.70
engin_inform	1.055	1.301	0.885	0.432	0.384	0.369	4.424	0.36
extract_phrase	1.055	0.527	1.645	2.099	2.242	-2.119	5.449	1.48
initi_step	2.055	1.301	0.365	1.265	1.242	0.369	6.596	0.59
measur_qualiti	1.055	2.074	0.885	2.265	0.667	0.369	7.314	0.71
method_effect	2.055	1.434	1.645	2.099	2.101	0.369	9.701	0.61
model_calcul	1.055	1.301	0.125	2.432	2.101	-0.461	6.552	1.02
particular_case	1.055	0.754	0.365	2.099	2.101	0.369	6.742	0.73
rapid_develop	1.055	1.301	1.645	1.265	-0.333	0.369	5.301	0.67
string_number	1.055	1.301	1.645	-0.236	2.242	0.369	6.375	0.81
system_make	1.055	2.301	1.645	0.764	1.242	0.369	7.375	0.62
toulous_franc	1.055	0.527	0.885	1.265	0.384	0.369	4.484	0.34
us_resourc	1.823	2.074	0.885	0.432	1.525	-0.461	6.278	0.87
valu_model	1.823	1.301	-2.155	2.099	2.101	-0.461	4.708	1.58
vector_length	1.823	1.301	0.885	0.432	1.525	0.369	6.334	0.54
word_porter	1.823	2.074	1.885	0.432	-0.475	0.539	6.278	0.94
approach_found	1.823	0.527	1.125	-0.402	2.101	0.369	5.543	0.86
call_term	1.823	1.301	1.645	0.764	0.384	0.369	6.285	0.58
classifi_decis	1.823	1.527	1.365	0.432	2.101	0.369	7.616	0.66
content_tweet	1.823	1.301	1.125	1.265	0.525	0.369	6.408	0.49
database_commun	1.823	-1.019	-0.635	2.099	2.101	0.369	4.737	1.29
document_specif	1.823	0.527	1.645	1.265	-0.333	0.369	5.296	0.76

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
human_social	1.823	1.754	1.645	2.099	0.525	-0.461	7.385	0.90
inform_analysi	1.823	0.754	1.645	0.432	1.384	0.369	6.406	0.58
linguist_volum	1.823	1.301	1.885	1.265	-0.333	0.369	6.309	0.79
method_case	1.823	2.074	1.125	2.432	-0.475	0.369	7.347	1.01
model_thu	1.823	0.527	1.645	1.432	1.525	0.369	7.321	0.56
page_contain	1.823	1.301	0.885	2.099	-0.192	0.369	6.284	0.80
partial_support	1.823	2.074	1.645	1.097	1.242	0.369	8.250	0.56
plai_crucial	1.823	2.074	1.645	1.931	0.384	0.369	8.225	0.71
problem_includ	1.823	1.301	1.645	2.097	2.101	0.369	9.335	0.60
scienc_softwar	1.823	1.301	1.365	2.099	2.101	-0.119	8.569	0.76
step_approach	1.823	2.074	1.645	-1.236	0.384	-0.461	4.230	1.24
step_featur	1.823	1.301	1.645	1.432	-1.333	0.369	5.235	1.09
studi_comput	1.823	1.301	0.125	0.432	0.384	0.369	4.433	0.61
system_capabl	1.823	2.301	1.645	1.265	-0.192	0.369	7.211	0.86
system_project	1.823	1.301	0.885	0.432	-0.475	0.369	4.334	0.73
techniqu_help	1.823	2.074	0.125	0.432	1.525	0.369	6.347	0.77
techniqu_perform	1.823	2.074	1.645	0.432	-0.192	0.369	6.150	0.85
text_twitter	1.823	2.074	0.885	-1.236	1.384	0.369	5.299	1.10
time_exampl	2.749	2.074	0.125	2.099	2.101	0.369	9.516	0.98
tool_gener	-0.251	1.301	0.885	2.099	2.101	0.369	6.503	0.86
us_preprocess	0.518	2.301	1.645	2.099	1.242	-0.461	7.344	0.95
vector_contain	-0.482	0.527	0.885	2.099	2.101	0.369	5.498	0.93
document_phrase	0.518	1.301	0.885	2.099	2.101	-0.461	6.442	0.90
text_vector	0.518	2.074	1.645	1.265	0.384	0.369	6.254	0.66
algorithm_given	2.518	2.074	1.885	2.099	0.384	0.369	9.328	0.85
method_word	0.286	0.527	0.885	1.265	2.101	0.369	5.433	0.63
problem_word	0.286	2.301	1.645	2.099	1.242	0.710	8.283	0.72
spend_time	1.286	2.074	0.885	2.099	-0.475	0.369	6.238	0.91
state_model	0.286	-0.246	1.885	2.099	2.101	0.369	6.493	0.97
combin_term	0.286	1.301	0.885	1.265	2.101	-0.461	5.377	0.81
effici_search	0.286	2.074	0.885	1.265	2.384	0.369	7.262	0.80
enorm_amount	0.286	2.074	0.885	1.265	2.101	-0.290	6.321	0.88
further_increas	2.286	1.527	0.885	2.265	2.101	0.369	9.433	0.73
model_addit	0.286	1.527	1.645	1.265	1.242	0.369	6.334	0.53
model_requir	1.055	0.754	1.645	1.265	2.242	0.369	7.329	0.61
select_topic	1.055	2.074	0.125	2.099	-0.475	0.369	5.246	0.97
term_search	2.055	0.754	1.645	2.099	0.384	0.369	7.304	0.74
test_compar	2.055	1.527	0.885	1.432	2.101	0.369	8.368	0.61
addit_word	1.055	0.527	0.125	1.265	2.101	0.369	5.441	0.66
analysi_applic	1.055	2.074	1.645	0.432	1.525	0.369	7.099	0.63
approach_reli	1.055	1.527	0.885	1.265	1.242	0.369	6.343	0.37

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DEV</b>
databas_search	1.055	0.527	1.125	1.265	2.101	0.369	6.441	0.56
elimin_stem	1.055	2.074	1.645	1.265	0.667	0.369	7.074	0.57
eval_uation	2.055	0.754	1.645	0.432	2.101	0.369	7.354	0.73
identifi_similar	2.055	1.527	0.125	1.265	2.101	0.369	7.441	0.76
knowledg_document	2.055	2.527	1.365	2.099	2.101	0.369	10.515	0.71
network_machin	1.055	0.527	1.885	1.432	2.101	0.369	7.368	0.64
split_data	1.055	2.074	1.645	0.432	0.525	0.369	6.099	0.65
steinbach_karypi	1.055	2.074	1.645	1.265	-1.333	0.369	5.074	1.11
store_file	1.823	0.527	0.125	1.432	2.101	0.369	6.376	0.76
topic_exampl	1.823	1.301	0.885	1.265	0.525	0.369	6.168	0.50
user_data	1.823	1.527	1.885	2.099	0.384	0.539	8.257	0.67
valu_posit	1.823	1.301	0.885	0.432	1.384	0.369	6.193	0.52
accord_word	1.823	2.074	1.645	0.764	2.242	-0.461	8.088	0.94
algorithm_determin	1.823	2.074	1.645	0.931	2.242	0.369	9.084	0.66
anger_fear	1.823	1.301	1.645	0.764	2.101	0.539	8.173	0.56
approach_consist	1.823	0.527	0.885	2.099	0.384	-0.461	5.257	0.87
approach_outperform	1.823	1.301	0.125	1.265	0.384	0.369	5.266	0.62
candid_gener	1.823	1.754	2.125	2.099	2.242	0.369	10.412	0.63
choos_number	1.823	2.074	1.845	2.099	2.101	0.539	10.481	0.55
collect_period	1.823	2.074	1.125	1.432	1.242	-0.461	7.235	0.81
compar_number	1.823	1.301	-1.395	1.265	2.101	0.369	5.463	1.16
construct_graph	1.823	-0.246	1.645	0.432	2.101	-0.461	5.294	1.02
count_time	1.823	2.074	0.125	-0.236	2.101	0.369	6.256	0.98
descrip_tion	1.823	2.074	1.645	1.598	-0.475	0.369	7.034	0.91
design_algorithm	1.823	1.301	1.645	0.432	1.242	0.710	7.153	0.49
document_view	1.823	2.301	1.645	1.265	-0.333	0.369	7.069	0.90
extract_textual	1.823	1.301	1.645	2.265	-0.475	0.539	7.098	0.91
featur_preprocess	1.823	0.527	0.885	1.265	0.384	0.369	5.253	0.53
filter_step	1.823	0.527	1.645	1.265	0.384	-0.461	5.184	0.79
help_classifi	1.823	-0.246	1.645	0.432	2.101	0.539	6.294	0.85
independ_given	1.823	2.074	2.605	0.432	2.101	0.369	9.403	0.86
knowledg_sourc	1.823	-0.246	1.645	2.099	0.384	-0.461	5.244	1.02
label_class	1.823	0.527	0.885	2.099	-0.475	0.369	5.228	0.88
method_produc	1.823	2.074	-0.155	2.099	2.242	0.369	8.452	0.94
overal_score	1.823	1.301	0.885	0.598	1.242	0.369	6.217	0.48
process_human	1.823	1.301	1.645	-0.402	2.101	-0.290	6.178	1.00
step_construct	1.823	1.301	1.125	2.099	0.384	0.539	7.271	0.62
strength_weak	1.823	1.301	0.125	2.099	-0.475	0.369	5.241	0.93
test_purpos	-0.251	2.074	1.645	2.265	2.101	0.369	8.203	0.96
us_extern	0.286	1.301	1.645	2.099	0.384	0.369	6.083	0.71
word_divid	1.286	1.301	0.885	2.265	2.101	0.369	8.206	0.66

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
word_system	0.286	2.074	0.885	1.265	1.242	0.369	6.121	0.61
topic_categori	1.286	2.074	1.645	1.265	0.384	0.369	7.022	0.62
consid_time	2.286	0.754	1.645	2.099	2.101	0.369	9.253	0.73
data_partit	0.286	2.074	1.645	0.432	1.242	0.369	6.047	0.69
exist_document	1.286	1.301	1.645	2.099	1.242	-0.461	7.112	0.79
featur_name	0.286	1.301	0.885	2.099	2.101	-0.461	6.211	0.93
iter_step	1.055	1.301	0.885	2.099	2.101	0.710	8.150	0.55
label_base	2.055	2.074	0.885	0.432	2.101	-0.461	7.085	0.98
media_platform	1.055	2.074	1.645	1.265	1.525	0.369	7.932	0.53
method_keyword	1.055	0.527	0.885	1.265	2.101	0.369	6.201	0.56
base_frequent	1.055	2.074	1.645	2.099	-0.475	0.539	6.937	0.91
cate_gori	1.055	1.527	1.645	1.265	1.242	0.369	7.103	0.41
comparison_baselin	2.055	2.527	0.885	2.099	2.242	0.369	10.176	0.79
comput_perform	1.055	0.527	0.885	2.099	1.242	0.369	6.176	0.56
consid_case	1.055	2.301	1.645	2.265	0.384	0.369	8.018	0.80
dataset_method	1.055	1.301	0.885	0.432	2.101	0.369	6.141	0.58
distribut_represent	1.055	1.301	-0.635	2.099	2.101	0.369	6.288	0.96
introduc_concept	1.055	0.527	1.645	1.265	1.242	0.369	6.103	0.44
level_document	1.055	2.074	1.645	2.099	0.667	0.369	7.908	0.67
metric_text	1.055	2.074	-0.635	1.265	2.101	0.369	6.228	0.96
queri_gener	1.823	1.527	1.645	1.265	1.242	-0.461	7.042	0.76
support_grant	1.823	2.074	1.645	2.099	-0.475	0.710	7.876	0.92
user_perform	1.823	1.301	1.645	1.265	0.525	0.369	6.928	0.54
variou_approach	1.823	2.074	0.125	2.099	0.384	0.539	7.044	0.84
accuraci_number	1.823	2.074	1.645	1.265	-1.333	0.369	5.842	1.17
affect_user	1.823	2.754	1.645	2.099	1.242	0.539	10.102	0.69
analysi_emot	1.823	2.074	1.645	1.598	1.242	0.539	8.922	0.49
analysi_featur	1.823	2.074	1.885	1.265	-0.475	0.369	6.941	0.92
analysi_order	1.823	1.301	0.125	1.432	2.101	0.369	7.150	0.72
averag_sentenc	1.823	2.074	1.645	2.099	0.667	-0.461	7.847	0.92
categori_tweet	1.823	1.301	1.645	0.432	2.384	0.369	7.953	0.73
contain_singl	1.823	0.527	1.125	2.099	1.242	0.369	7.185	0.63
discoveri_databas	1.823	0.527	1.125	2.099	1.242	0.369	7.185	0.63
distanc_calcul	1.823	2.074	0.885	1.265	-0.475	0.369	5.941	0.86
experi_featur	1.823	2.074	1.645	2.099	0.384	0.881	8.906	0.64
graph_structur	1.823	2.074	1.645	2.265	-0.333	0.369	7.842	0.95
increas_precis	1.823	1.527	1.885	1.265	1.242	0.369	8.111	0.50
keyword_cluster	1.823	1.527	1.645	0.432	1.242	0.369	7.038	0.57
level_system	1.823	2.527	1.645	1.265	1.242	-0.461	8.042	0.91
main_sourc	1.823	1.301	0.125	2.265	1.242	0.369	7.125	0.75
neg_affect	1.823	2.074	1.645	1.432	0.525	0.369	7.867	0.64

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
network_data	1.823	2.074	0.885	0.432	0.384	0.369	5.966	0.70
order_base	1.823	1.301	0.365	1.265	2.101	0.369	7.223	0.66
process_construct	1.823	2.074	1.885	0.432	2.101	0.710	9.025	0.67
sampl_test	1.823	-1.019	1.645	2.099	2.101	-0.461	6.188	1.27
step_build	1.823	2.301	1.645	1.598	2.101	-0.461	9.007	0.91
us_exampl	1.823	2.074	1.645	0.432	0.384	-0.461	5.897	0.92
user_give	0.286	2.074	0.885	2.099	2.101	-0.461	6.984	1.01
vector_calcul	0.286	1.301	1.645	2.099	2.242	0.369	7.941	0.77
word_retriev	0.286	2.074	1.645	1.432	2.101	0.369	7.906	0.74
written_java	0.286	2.074	1.885	1.265	2.101	0.369	7.980	0.76
ad_word	0.286	1.301	1.645	1.265	2.101	0.369	6.966	0.65
extern_sourc	1.055	1.301	0.885	1.265	2.101	0.369	6.975	0.52
featur_posit	1.055	1.301	0.885	2.099	1.242	0.369	6.950	0.52
overal_system	1.055	2.074	0.885	2.099	1.242	0.539	7.894	0.58
stem_languag	1.055	2.074	1.645	1.265	0.384	0.369	6.791	0.62
algorithm_consid	1.055	2.074	1.645	1.265	1.384	0.369	7.791	0.53
automat_creation	2.055	0.527	1.885	2.099	2.101	0.369	9.035	0.75
cluster_unsupervis	2.055	2.074	1.885	2.265	2.242	0.369	10.890	0.66
dataset_compar	1.055	2.074	1.645	2.099	0.525	0.369	7.766	0.69
describ_algorithm	1.055	2.301	1.645	2.099	0.384	0.369	7.851	0.77
effici_cluster	1.055	2.074	1.645	2.099	2.525	0.369	9.766	0.72
full_word	1.055	1.301	0.885	2.099	2.101	-0.461	6.979	0.87
model_human	1.055	2.074	0.885	2.099	2.101	-1.290	6.923	1.20
punctuat_stop	1.055	2.301	0.885	2.099	2.101	0.539	8.979	0.69
rang_valu	1.055	2.074	1.125	2.099	2.242	0.369	8.963	0.69
remov_frequent	1.823	1.301	0.125	2.099	2.101	0.539	7.988	0.76
sampl_word	1.823	2.074	0.885	0.598	2.101	0.369	7.849	0.71
time_text	1.823	2.074	0.885	0.432	1.242	0.369	6.824	0.65
word_affect	1.823	0.527	1.645	2.099	2.384	0.369	8.846	0.76
algorithm_obtain	1.823	1.301	1.645	1.432	2.101	-0.461	7.841	0.83
approach_provid	1.823	2.301	0.885	1.265	2.101	0.539	8.914	0.64
calcul_step	1.823	2.074	0.885	-0.402	2.101	0.369	6.849	0.94
difficult_languag	1.823	2.074	0.885	2.099	1.525	0.369	8.775	0.64
document_arab	1.823	1.754	1.645	1.265	2.101	0.369	8.956	0.56
equat_calcul	1.823	2.301	1.885	2.099	2.242	0.539	10.889	0.60
extract_variou	1.823	1.527	0.885	2.099	2.242	0.369	8.945	0.67
famili_member	1.823	1.301	1.645	0.432	2.242	0.369	7.811	0.70
index_base	1.823	2.527	1.645	0.432	2.101	0.369	8.896	0.81
indic_cluster	1.823	0.527	0.885	1.265	2.101	0.369	6.970	0.64
inform_becom	1.823	2.074	1.645	1.598	1.242	0.369	8.751	0.55
manual_extract	1.823	0.754	1.645	2.265	2.101	0.369	8.956	0.70

<b>Theme</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>TOTAL</b>	<b>STD.DE V</b>
metric_base	1.823	1.301	1.645	0.432	2.101	-0.461	6.841	0.89
miller_wordnet	1.823	1.754	1.645	1.265	2.101	0.369	8.956	0.56
perform_supervis	1.823	1.527	0.125	2.099	2.101	0.369	8.043	0.80
process_design	1.823	2.074	0.885	1.265	1.384	0.369	7.800	0.57
process_part	1.823	1.301	1.645	1.265	1.384	0.369	7.786	0.46
score_method	1.823	1.301	1.645	0.598	2.101	0.369	7.836	0.63
stream_text	1.823	1.301	1.645	1.265	1.384	0.369	7.786	0.46
system_conclus	1.823	0.527	1.645	0.432	2.101	0.369	6.896	0.72
test_split	-0.482	2.074	1.645	2.099	2.101	0.369	7.805	1.00
topic_cover	0.286	2.074	1.645	2.099	1.242	0.369	7.715	0.74
uniqu_featur	2.286	2.074	1.645	1.265	2.101	0.369	9.740	0.65
user_send	1.055	2.074	0.885	2.265	2.101	0.369	8.748	0.72
predict_categor	1.055	2.074	1.885	1.265	2.101	0.369	8.748	0.63
annual_symposium	1.055	2.074	0.125	2.099	2.101	0.369	7.822	0.84
model_respect	2.055	2.074	1.645	1.265	2.101	-0.461	8.679	0.90
analysi_time	1.055	1.301	1.645	2.099	1.242	0.369	7.710	0.53
approach_deal	1.055	2.074	1.645	1.432	2.101	0.369	8.674	0.60
base_natur	1.055	0.527	1.645	2.099	2.101	0.369	7.795	0.70
collect_user	1.055	2.074	1.645	1.432	2.101	0.369	8.674	0.60
creation_literatur	2.055	1.301	0.885	2.099	2.101	0.369	8.808	0.67
data_group	1.055	2.074	0.125	2.099	2.101	0.369	7.822	0.84
document_pars	1.823	2.074	1.645	1.265	1.384	0.369	8.560	0.54
exampl_queri	1.823	1.527	1.645	1.265	2.101	0.369	8.730	0.55
normal_us	1.823	2.527	1.645	2.265	2.101	0.369	10.730	0.70
topic_refer	1.823	1.301	0.885	2.099	1.242	0.369	7.718	0.57
complet_text	1.823	1.527	1.645	1.265	2.101	0.369	8.730	0.55
context_process	1.823	0.527	0.885	2.099	2.101	0.369	7.803	0.73
correl_topic	1.823	1.301	0.125	2.099	2.101	0.369	7.817	0.80
data_chang	1.823	2.074	0.885	0.432	2.101	0.369	7.683	0.74
help_peopl	1.823	0.527	0.885	2.099	2.101	0.369	7.803	0.73
inform_thu	1.823	1.301	1.645	1.265	2.242	0.369	8.645	0.58
limit_word	1.823	2.074	0.885	2.099	1.384	0.369	8.633	0.64
method_exampl	1.823	1.301	1.645	0.432	2.101	0.369	7.670	0.66
mine_word	1.823	2.074	0.125	1.265	2.101	0.369	7.757	0.79
model_prove	1.823	2.074	1.645	0.432	2.101	0.539	8.614	0.69
model_singl	1.823	2.074	0.125	1.265	2.101	0.369	7.757	0.79
nois_data	1.823	2.074	0.885	1.265	2.101	-0.461	7.688	0.89
perform_find	1.823	0.527	0.885	2.099	2.101	0.369	7.803	0.73
term_process	1.823	2.074	1.645	1.265	0.384	0.369	7.560	0.67
time_make	1.823	1.301	1.645	2.099	0.384	0.369	7.620	0.67
us_collect	1.823	2.074	1.645	2.265	1.384	0.369	9.560	0.62

Theme	2013	2014	2015	2016	2017	2018	TOTAL	STD.DE V
us_determin	1.286	2.074	1.645	2.099	2.101	0.369	9.573	0.62
user_accord	1.055	2.074	0.885	2.099	2.101	0.369	8.582	0.69
valu_text	1.055	2.074	1.645	2.099	1.242	0.369	8.483	0.61
word_correl	1.055	2.074	1.645	1.265	2.101	0.369	8.508	0.61
mean_approach	1.055	2.074	1.645	2.099	1.242	0.369	8.483	0.61
current_version	1.055	2.074	1.645	2.099	2.242	0.369	9.483	0.67
martin_porter	1.823	1.301	1.645	2.099	1.242	0.369	8.478	0.55
obtain_relev	1.823	2.074	1.645	0.432	2.101	0.369	8.443	0.73
refer_mean	1.823	2.074	1.125	2.099	2.101	0.369	9.590	0.65
term_obtain	1.823	2.074	1.645	1.432	2.101	0.369	9.443	0.59
approach_discov	1.823	1.301	1.645	2.099	2.101	-0.461	8.508	0.88
approach_estim	1.823	2.074	1.645	1.265	1.242	0.369	8.418	0.55
catégori_classif	1.823	2.074	1.645	1.265	2.101	-0.461	8.448	0.88
classifi_built	1.823	2.074	1.645	1.265	1.242	0.369	8.418	0.55
classifi_simpl	1.823	1.301	1.645	1.265	2.101	0.369	8.503	0.55
data_initi	1.823	2.074	1.645	1.432	2.101	0.369	9.443	0.59
featur_input	1.823	2.074	1.645	1.265	1.242	0.369	8.418	0.55
function_determin	1.823	2.074	1.645	0.432	2.101	0.369	8.443	0.73
improv_document	1.823	1.301	1.645	2.265	2.101	0.369	9.503	0.63
measur_emot	1.823	2.074	1.885	2.099	1.242	0.369	9.492	0.61
preprocess_token	1.823	2.074	2.125	2.099	2.101	0.369	10.590	0.63
problem_lack	1.823	2.074	1.645	1.432	2.101	0.369	9.443	0.59
process_complet	1.823	2.074	0.885	2.099	2.242	0.369	9.492	0.70
provid_signific	1.823	1.301	0.885	2.099	2.101	0.369	8.577	0.64
select_group	2.055	2.074	1.645	2.099	2.101	0.369	10.342	0.63
system_stem	1.055	2.074	1.645	2.099	2.101	0.369	9.342	0.65
thousand_document	1.823	1.301	1.645	2.099	2.101	0.369	9.337	0.60
train_remain	1.823	2.074	1.645	2.099	1.242	0.369	9.252	0.60
contain_user	1.823	2.074	1.645	2.265	2.101	0.369	10.277	0.63
email_address	1.823	2.074	1.645	2.099	1.242	0.369	9.252	0.60
account_order	1.823	2.074	1.645	2.099	1.242	0.369	9.252	0.60
accuraci_significantli	1.823	2.074	1.645	2.099	1.242	0.369	9.252	0.60
base_lexic	1.823	2.074	1.645	2.099	2.101	0.539	10.281	0.55
base_theori	1.823	1.301	1.645	2.099	2.101	0.369	9.337	0.60
becom_time	1.823	2.074	0.885	2.099	2.101	0.369	9.350	0.68
featur_task	1.823	1.301	1.645	2.099	2.101	0.369	9.337	0.60
limit_term	1.823	2.074	1.645	2.099	2.101	-0.461	9.281	0.91
process_break	1.823	2.074	1.645	2.099	2.101	0.539	10.281	0.55
public_date	1.823	2.074	1.645	2.099	2.242	0.369	10.252	0.63
retriev_semant	1.823	2.074	1.645	2.099	1.242	0.369	9.252	0.60
space_number	1.823	2.074	1.645	2.099	2.101	0.369	10.110	0.61



## APPENDIX 5-O

This appendix displays the analysis of the trend calculations combined over the six years.

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
machin_learn	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
text_mine	HIGH PEAK 2015 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
natur_languag	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	FAL SE	FAL SE	2
inform_retriev	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
data_mine	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	FAL SE	3
stop_word	LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
naiv_bay	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
text_classif	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
languag_proces	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
featur_select	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
text_document	LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	FAL SE	2
sentiment_anal	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
neural_network	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
social_media	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
precis_recal	HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	TRU E	FAL SE	2
social_network	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
document_clust	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
part_speech	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	FAL SE	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
comput_linguist	HIGH PEAK 2014	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
arab_text	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
topic_model	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
term_frequenc	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1
text_categor	LOW PEAK 2016	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
support_vector	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1
vector_space	LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
train_data	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
vector_machin	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1
name_entiti	HIGH PEAK 2016 LOW PEAK 2017	FAL SE	TRU E	TRU E	TRU E	FAL SE	FAL SE	3
search_engin	LOW PEAK 2015	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
similar_measur	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	2
document_freq uenc	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
featur_extract	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	FAL SE	3
posit_neg	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	TRU E	FAL SE	TRU E	TRU E	FAL SE	3
base_approach	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
term_weight	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
text_process	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
text_analysi	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
learn_algorithm	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
word_remov	HIGH PEAK 2014 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
space_model	LOW PEAK 2014HIGH PEAK 2016	FAL	FAL	FAL	TRU	FAL	FAL	1

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		SE	SE	SE	E	SE	SE	
artifici_intellig	LOW PEAK 2015	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
cross_valid	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	FAL SE	TRU E	FAL SE	FAL SE	3
arab_languag	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
featur_vector	LOW PEAK 2014HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
stem_algorithm	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
cluster_algorithm	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
word_document	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
train_test	HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
scienc_engin	HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
number_word	LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
word_stem	LOW PEAK 2015	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
inform_extract	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
decis_tree	HIGH PEAK 2014 LOW PEAK 2016	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
document_collect	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
semant_analysi	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	FAL SE	FAL SE	2
softwar_engin	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
document_document	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
latent_semant	HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
invers_docume nt	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
retriev_system	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	1
depart_comput	HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
bay_classifi	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
test_data	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
cosin_similar	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
document_term	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
data_process	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
data_set	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
data_collect	LOW PEAK 2014	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
rule_base	LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
word_list	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
train_model	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
keyword_extrac t	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	FAL SE	TRU E	4
random_forest	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
base_method	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1
nearest_neighb or	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
latent_dirichlet	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	TRU E	3
stem_word	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
classif_algorith m	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
porter_stemme r	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1
speech_tag	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	TRU E	3
mine_techniqu	LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
knowledg_base	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
scienc_technolo	LOW PEAK 2015	FAL	FAL	FAL	FAL	FAL	FAL	0

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
g		SE	SE	SE	SE	SE	SE	
electr_engin	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	TRU E	TRU E	TRU E	FAL SE	FAL SE	3
supervis_learn	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
semant_similar	LOW PEAK 2014 HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	FAL SE	FAL SE	3
model_base	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	2
base_featur	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	TRU E	FAL SE	FAL SE	2
engin_comput	LOW PEAK 2014 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
light_stem	EQUILIBRIUM	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
text_file	HIGH PEAK 2015 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	TRU E	FAL SE	1
cloud_comput	LOW PEAK 2015 HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
data_analysi	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
document_contain	LOW PEAK 2014 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
dirichlet_alloc	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	TRU E	3
automat_text	LOW PEAK 2014 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
remov_stop	LOW PEAK 2014 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
engin_technolog	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
cluster_cluster	LOW PEAK 2014 HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
document_classif	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	FAL SE	FAL SE	2
word_sentenc	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
model_us	LOW PEAK 2014 HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
word_frequenc	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
languag_model	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
classif_us	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
solv_problem	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
system_us	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
recal_precis	HIGH PEAK 2014 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
learn_approach	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
document_summar	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
frequenc_word	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
inform_scienc	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
word_text	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
frequenc_term	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
frequenc_invers	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
improv_perfor	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
relev_document	HIGH PEAK 2014 LOW PEAK 2016	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
inform_process	HIGH PEAK 2014 LOW PEAK 2015	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
comput_applic	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
document_word	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
extract_featur	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
compar_studi	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
method_base	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
select_method	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	2
recal_measur	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
classif_accuraci	EQUILIBRIUM	FAL	FAL	FAL	FAL	FAL	FAL	0

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		SE	SE	SE	SE	SE	SE	
number_time	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
topic_topic	LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	2
learn_model	LOW PEAK 2014 HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	FAL SE	3
document_repres	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
languag_text	HIGH PEAK 2014 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
learn_techniqu	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
cluster_method	EQUILIBRIUM	TRU E	FAL SE	FAL SE	FAL SE	TRU E	TRU E	3
similar_docume nt	LOW PEAK 2014 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
multi_document	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
base_model	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
number_featur	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
document_us	LOW PEAK 2014	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
knowledg_discovi	LOW PEAK 2014	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
word_appear	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
word_featur	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	FAL SE	FAL SE	2
document_vect or	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
mean_word	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
extract_text	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
textual_data	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
form_word	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
model_inform	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	TRU E	TRU E	FAL SE	2

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
repres_document	HIGH PEAK 2014 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
model_model	LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	FAL SE	FAL SE	2
process_step	HIGH PEAK 2014 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
extract_inform	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
base_similar	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
languag_technolog	HIGH PEAK 2014 LOW PEAK 2016	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
word_base	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
comput_engin	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
scienc_inform	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
right_reserv	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
opinion_mine	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
process_text	LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
evalu_metric	LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	TRU E	FAL SE	2
manag_system	LOW PEAK 2014HIGH PEAK 2017	FAL SE	TRU E	TRU E	TRU E	TRU E	FAL SE	4
classif_task	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	TRU E	2
document_number	HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
stem_process	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
test_dataset	EQUILIBRIUM	TRU E	TRU E	FAL SE	TRU E	FAL SE	FAL SE	3
document_represent	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
noun_verb	LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
weight_term	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
us_word	LOW PEAK 2014HIGH PEAK 2015	FAL	FAL	FAL	FAL	FAL	FAL	0

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
	LOW PEAK 2017	SE	SE	SE	SE	SE	SE	
amount_data	LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
word_model	HIGH PEAK 2014	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
document_matrix	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
number_topic	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
fold_cross	EQUILIBRIUM	FAL SE	TRU E	FAL SE	TRU E	FAL SE	FAL SE	2
similar_word	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	FAL SE	FAL SE	2
word_vector	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4
sentenc_document	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
featur_space	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
averag_precis	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
term_base	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	2
mean_cluster	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
logist_regress	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
term_extract	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	TRU E	2
collect_document	HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
recal_score	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
us_data	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
khoja_stemmer	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
text_content	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
stock_market	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
number_cluster	EQUILIBRIUM	TRU E	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	2

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
morpholog_analysi	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
pattern_recognit	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
us_inform	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
data_data	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
contain_word	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
classif_model	HIGH PEAK 2015	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
base_text	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
step_step	HIGH PEAK 2014 LOW PEAK 2016	TRU E	TRU E	FAL SE	FAL SE	FAL SE	TRU E	3
user_queri	LOW PEAK 2016	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
model_train	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
train_document	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	FAL SE	TRU E	FAL SE	TRU E	3
featur_featur	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
index_term	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
select_featur	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
unstructur_data	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
arab_document	LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
us_machin	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
time_consum	HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
algorithm_base	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
analysi_retriev	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	TRU E	FAL SE	3
knowledg_manag	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
cluster_base	EQUILIBRIUM	FAL	FAL	FAL	FAL	FAL	TRU	1

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		SE	SE	SE	SE	SE	E	
cluster_document	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
learn_method	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
improv_accuracy	LOW PEAK 2014 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
word_mean	LOW PEAK 2016 HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
textual_content	HIGH PEAK 2015 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
cluster_us	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
human_languag	LOW PEAK 2015	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
predict_model	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
weight_scheme	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
base_system	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
intellig_system	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
collect_data	LOW PEAK 2014 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
comput_inform	HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
mobil_devic	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
word_occurr	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	FAL SE	TRU E	3
document_text	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
classifi_classifi	LOW PEAK 2017	TRU E	TRU E	FAL SE	TRU E	FAL SE	TRU E	4
cluster_techniq_u	LOW PEAK 2015 HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	TRU E	FAL SE	2
term_occur	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
gold_standard	LOW PEAK 2014 HIGH PEAK 2015	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
queri_term	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
mean_algorithm	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
world_wide	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
text_preprocess	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
system_develop	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	2
term_term	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
develop_inform	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
point_view	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
word_root	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
recommend_system	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
maximum_entr opi	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
stem_stem	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
error_rate	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
plai_role	LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
singl_word	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
prefix_suffix	HIGH PEAK 2014 LOW PEAK 2015	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
imag_process	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
root_word	EQUILIBRIUM	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
document_retri ev	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
retriev_docume nt	HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
spam_filter	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
occur_document	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
increas_number	EQUILIBRIUM	FAL	FAL	FAL	FAL	FAL	FAL	0

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		SE	SE	SE	SE	SE	SE	
system_base	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
classif_method	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
comput_system	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	FAL SE	TRU E	FAL SE	TRU E	3
inform_gain	LOW PEAK 2014HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
data_train	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
document_similar	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
us_text	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
docu_ment	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	FAL SE	FAL SE	3
sourc_text	EQUILIBRIUM	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
full_text	LOW PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	2
latent_topic	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
model_text	HIGH PEAK 2014 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
advanc_comput	DECREASING	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
genet_algorithm	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
knowledg_data	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
search_queri	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	FAL SE	3
frequent_word	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
inform_text	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
term_appear	LOW PEAK 2014HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
class_label	HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	TRU E	FAL SE	2
train_dataset	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
number_term	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
probabl_distribut	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	1
preprocess_step	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
porter_stem	LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	TRU E	2
issn_onlin	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
linguist_featur	HIGH PEAK 2014 LOW PEAK 2016	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
similar_score	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
text_retriev	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
evalu_us	LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	FAL SE	2
word_occur	HIGH PEAK 2014 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
condit_probabl	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
data_engin	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
test_document	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
process_manag	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
exampl_word	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
languag_resourc	EQUILIBRIUM	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
reduc_number	LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
base_term	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
approach_base	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
base_classifi	EQUILIBRIUM	FAL SE	TRU E	FAL SE	TRU E	FAL SE	TRU E	3
process_techniq_u	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
fals_posit	LOW PEAK 2015HIGH PEAK 2016	FAL	FAL	FAL	FAL	FAL	TRU	1

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
	LOW PEAK 2017	SE	SE	SE	SE	SE	E	
frequent_patter n	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
comput_comm un	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	FAL SE	TRU E	FAL SE	FAL SE	3
extract_keywor d	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	FAL SE	TRU E	TRU E	FAL SE	3
deep_learn	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
method_us	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
phrase_base	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
document_corp u	HIGH PEAK 2014 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
inform_knowle dg	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
classifi_text	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
word_extract	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
word_count	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
retriev_inform	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
list_word	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
structur_data	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	FAL SE	TRU E	FAL SE	TRU E	3
input_data	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
appear_docume nt	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
train_classifi	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
sentenc_sente nc	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
classifi_us	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
text_us	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
combin_featur	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
classifi_train	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	TRU E	2
approach_us	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
document_quer i	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	FAL SE	3
classif_problem	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
object_function	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
text_corpu	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
process_inform	LOW PEAK 2015	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
document_base	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
infor_mation	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
level_featur	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
system_perfor m	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
program_langu ag	HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
system_applic	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
queri_expans	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
word_order	LOW PEAK 2015	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
algorithm_algor ithm	LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
text_base	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	1
pattern_mine	HIGH PEAK 2015 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
issn_volum	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
remov_stem	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
evalu_measur	HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	TRU E	FAL SE	2
artifici_neural	HIGH PEAK 2014 LOW PEAK 2017	TRU	TRU	TRU	TRU	FAL	TRU	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	E	E	E	SE	E	
document_feat ur	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
view_project	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
model_evalu	HIGH PEAK 2014	FAL SE	TRU E	TRU E	FAL SE	FAL SE	FAL SE	2
media_text	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
euclidean_dista nc	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
contain_term	LOW PEAK 2014HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
algorithm_perfo rm	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
extract_us	LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
colleg_engin	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
build_model	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
linguist_analysi	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
engin_scien c	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
contain_docum ent	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
singl_document	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
data_structur	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
system_design	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
soft_comput	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
volum_number	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
relev_inform	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
process_docum ent	HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
text_featur	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	FAL SE	FAL SE	TRU E	TRU E	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
cluster_process	LOW PEAK 2014 HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
word_us	HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
classif_process	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
word_term	LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
perform_test	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
input_output	LOW PEAK 2014 HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
user_request	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
word_embed	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
random_field	HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
featur_base	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
public_http	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
word_topic	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	TRU E	4
number_iter	EQUILIBRIUM	FAL SE	TRU E	TRU E	TRU E	TRU E	FAL SE	4
unigram_bigram	LOW PEAK 2014 HIGH PEAK 2017	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4
allow_user	HIGH PEAK 2014 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
design_implement	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	FAL SE	2
content_base	LOW PEAK 2014 HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
semant_index	HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
cluster_text	LOW PEAK 2014 HIGH PEAK 2015	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
mathemat_model	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
document_process	HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
algorithm_us	LOW PEAK 2014 HIGH PEAK 2015	FAL	FAL	FAL	FAL	FAL	FAL	0

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
	LOW PEAK 2016	SE	SE	SE	SE	SE	SE	
period_time	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRUE	TRUE	FAL SE	TRU E	FAL SE	TRU E	4
word_sens	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
content_page	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2016	FAL SE	TRU E	1				
wide_rang	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	TRU E	1				
comput_time	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	1
autom_text	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2016	FAL SE	TRU E	1				
document_topi c	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRUE	TRUE	TRU E	FAL SE	FAL SE	FAL SE	3
syntact_semant	LOW PEAK 2015 HIGH PEAK 2016	TRUE	TRUE	TRU E	TRU E	TRU E	TRU E	6
method_text	LOW PEAK 2014 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	TRU E	1				
unsupervis_lear n	LOW PEAK 2015 HIGH PEAK 2017	FAL SE	0					
discoveri_data	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017	FAL SE	0					
informa_tion	LOW PEAK 2014 HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	TRU E	FAL SE	3
data_text	EQUILIBRIUM	FAL SE	0					
topic_documen t	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	FAL SE	2
emot_recognit	LOW PEAK 2015 HIGH PEAK 2016	TRUE	TRUE	TRU E	TRU E	TRU E	TRU E	6
perform_us	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	FAL SE	0					
base_word	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
vector_represe nt	HIGH PEAK 2014	TRUE	TRUE	TRU E	TRU E	FAL SE	FAL SE	4
us_featur	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	TRU E	1				
measur_similar	LOW PEAK 2014	FAL SE	0					
corpu_base	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRUE	TRUE	FAL SE	FAL SE	TRU E	FAL SE	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
text_word	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
graph_base	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
semant_featur	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	FAL SE	FAL SE	3
confus_matrix	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
emot_classif	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
network_analysi	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4
unstructur_text	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
origin_document	HIGH PEAK 2014 LOW PEAK 2016	FAL SE	TRU E	TRU E	FAL SE	FAL SE	FAL SE	2
proc_conf	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	FAL SE	TRU E	3
sentenc_word	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
distanc_measur	LOW PEAK 2015HIGH PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	2
berlin_heidelbe rg	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
measur_precis	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	TRU E	TRU E	3
similar_sentenc	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4
represent_document	LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
train_corpu	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	FAL SE	TRU E	FAL SE	TRU E	3
uniqu_word	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	FAL SE	2
data_model	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
hierarch_cluster	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
probabilist_mo del	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
evalu_perform	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
model_perform	DECREASING	FAL	TRU	TRU	FAL	FAL	FAL	2

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		SE	E	E	SE	SE	SE	
word_level	HIGH PEAK 2014	TRUE	TRUE	FAL SE	TRUE	TRUE	TRUE	5
pattern_base	LOW PEAK 2014HIGH PEAK 2015	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	6
classif_techniqu	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRUE	FAL SE	FAL SE	TRUE	2
calcul_us	LOW PEAK 2017	FAL SE	FAL SE	FAL	FAL SE	FAL SE	FAL SE	0
data_sourc	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRUE	TRUE	FAL SE	TRUE	3
occurr_word	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRUE	1
commun_technolog	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRUE	TRUE	TRUE	TRUE	FAL SE	TRUE	5
stem_arab	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRUE	FAL SE	FAL SE	TRUE	TRUE	3
inform_commu	LOW PEAK 2014HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRUE	TRUE	TRUE	3
taken_account	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRUE	FAL SE	FAL SE	TRUE	2
fals_neg	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	TRUE	FAL SE	FAL SE	FAL SE	FAL SE	TRUE	2
tweet_contain	LOW PEAK 2015HIGH PEAK 2016	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	6
occurr_term	LOW PEAK 2014HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRUE	TRUE	TRUE	3
base_cluster	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRUE	1
reduc_dimensio	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRUE	1
system_evalu	EQUILIBRIUM	FAL SE	TRUE	FAL SE	FAL SE	FAL SE	FAL SE	1
word_given	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRUE	FAL SE	FAL SE	FAL SE	1
mine_text	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRUE	FAL SE	FAL SE	1
dataset_dataset	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
process_time	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRUE	FAL SE	FAL SE	TRUE	2
time_period	EQUILIBRIUM	TRUE	FAL SE	TRUE	TRUE	TRUE	TRUE	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
automat_extrac t	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
dataset_consist	LOW PEAK 2014HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
file_contain	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	TRU E	2
test_perform	EQUILIBRIUM	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
share_task	HIGH PEAK 2014	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
document_train	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
word_cluster	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
user_gener	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
base_semant	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
statist_analysi	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	FAL SE	TRU E	FAL SE	TRU E	3
transact_knowl edg	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	FAL SE	FAL SE	TRU E	TRU E	3
model_built	DECREASING	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
twitter_user	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
model_docume nt	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
retriev_relev	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
gram_gram	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
speech_recogni t	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
linear_regress	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
data_point	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	FAL SE	TRU E	FAL SE	FAL SE	3
common_word	HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
signal_process	HIGH PEAK 2014	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
calcul_similar	LOW PEAK 2014HIGH PEAK 2016	FAL	FAL	FAL	FAL	FAL	FAL	0

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		SE	SE	SE	SE	SE	SE	
system_system	LOW PEAK 2015 HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
model_data	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
standard_arab	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
perform_syste m	LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
valu_calcul	LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
cluster_similar	LOW PEAK 2015 HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
classif_text	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
frequenc_docu ment	LOW PEAK 2014 HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
perform_evalu	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
precis_measur	DECREASING	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1
algorithm_appli	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
text_classifi	HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	TRU E	2
model_predict	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	2
analysi_method	HIGH PEAK 2015	FAL SE	TRU E	TRU E	TRU E	FAL SE	FAL SE	3
algo_rithm	LOW PEAK 2016 HIGH PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	TRU E	FAL SE	3
distribut_topic	LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
classifi_docume nt	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
text_collect	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
extract_term	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	TRU E	FAL SE	2
repres_vector	HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
word_categor	HIGH PEAK 2015 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
accuraci_precis	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
punctuat_mark	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
test_set	HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	FAL SE	FAL SE	3
data_extract	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
comput_technolog	HIGH PEAK 2014	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
word_represent	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	FAL SE	TRU E	FAL SE	3
tabl_perform	LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
neg_exampl	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
featur_word	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
rule_mine	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
test_test	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
us_porter	DECREASING	TRU E	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	2
content_document	HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
word_gener	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
document_model	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	FAL SE	3
gener_word	LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1
featur_valu	LOW PEAK 2014HIGH PEAK 2015	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
highest_accuraci	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
mine_method	EQUILIBRIUM	TRU E	FAL SE	FAL SE	FAL SE	TRU E	TRU E	3
develop_model	EQUILIBRIUM	TRU E	FAL SE	FAL SE	TRU E	TRU E	FAL SE	3
lexic_databas	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
regress_model	LOW PEAK 2015HIGH PEAK 2016	TRU	TRU	TRU	TRU	TRU	FAL	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	E	E	E	E	SE	
tweet_user	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
class_class	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1
classif_cluster	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
featur_text	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
stem_stop	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
process_system	LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
process_extract	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
develop_system	DECREASING	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
implement_us	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
request_enhanc	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
dataset_contain	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
extract_word	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
model_featur	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
comput_vision	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
us_classifi	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
train_exampl	HIGH PEAK 2014	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
evalu_system	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
word_contain	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	1
method_appli	HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
extract_method	LOW PEAK 2015HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
token_token	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
repres_text	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
retriev_text	LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
discuss_stat	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
enhanc_downlo ad	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
public_stat	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
view_public	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
word_dictionari	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	1
cluster_number	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
word_repres	LOW PEAK 2014HIGH PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1
correl_coeffici	LOW PEAK 2014HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
statist_machin	LOW PEAK 2015HIGH PEAK 2017	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4
porter_algorith m	LOW PEAK 2014HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
twitter_data	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	FAL SE	3
mine_algorithm	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	FAL SE	TRU E	3
extract_docume nt	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
sentenc_text	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
semant_relatio nship	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	FAL SE	3
techniqu_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
make_process	EQUILIBRIUM	FAL SE	TRU E	FAL SE	TRU E	FAL SE	TRU E	3
human_resourc	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
qualiti_cluster	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
relev_featur	HIGH PEAK 2014 LOW PEAK 2017	FAL	TRU	TRU	FAL	FAL	FAL	2

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		SE	E	E	SE	SE	SE	
manual_label	LOW PEAK 2016HIGH PEAK 2017	TRUE	TRUE	FAL	FAL	TRUE	TRUE	4
represent_model	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRUE	TRUE	FAL	TRUE	FAL	FAL	3
word_consider	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL	FAL	FAL	FAL	FAL	FAL	0
publicli_avail	LOW PEAK 2016HIGH PEAK 2017	TRUE	FAL	TRUE	FAL	FAL	TRUE	3
automat_index	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL	TRUE	TRUE	TRUE	TRUE	TRUE	5
springer_verlag	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	FAL	FAL	FAL	TRUE	FAL	FAL	1
distribut_word	HIGH PEAK 2014	FAL	TRUE	FAL	FAL	FAL	FAL	1
keyword_text	LOW PEAK 2016	FAL	FAL	FAL	FAL	FAL	TRUE	1
word_similar	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL	FAL	TRUE	FAL	TRUE	FAL	2
root_stem	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL	TRUE	TRUE	TRUE	TRUE	TRUE	5
measur_accuracy	HIGH PEAK 2014	FAL	FAL	TRUE	FAL	TRUE	FAL	2
cluster_approach	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL	FAL	TRUE	FAL	FAL	TRUE	2
classif_approach	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL	FAL	FAL	FAL	FAL	TRUE	1
interest_includ	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL	FAL	TRUE	FAL	TRUE	TRUE	3
inform_document	LOW PEAK 2015HIGH PEAK 2017	FAL	FAL	FAL	FAL	TRUE	FAL	1
mine_inform	HIGH PEAK 2014 LOW PEAK 2015	FAL	FAL	FAL	FAL	FAL	FAL	0
document_index	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL	FAL	FAL	FAL	FAL	FAL	0
featur_document	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	FAL	FAL	FAL	FAL	FAL	TRUE	1
model_repres	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL	FAL	FAL	FAL	FAL	TRUE	1
neg_word	EQUILIBRIUM	TRUE	TRUE	TRUE	FAL	TRUE	TRUE	5
sequenc_word	EQUILIBRIUM	FAL	FAL	FAL	FAL	FAL	FAL	0

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
perform_model	LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
sens_disambigu	HIGH PEAK 2014 LOW PEAK 2015	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
data_base	LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
model_select	LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
search_space	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4
tweet_tweet	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
predict_stock	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
classifi_base	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
select_text	HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
bay_algorithm	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	TRU E	2
represent_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
resourc_evalu	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
dimension_spac	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
main_idea	LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1
tree_structur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3
algorithm_clust	LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
word_stop	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
measur_measur	LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
extract_sentenc	HIGH PEAK 2014	FAL SE	TRU E	FAL SE	FAL SE	TRU E	FAL SE	2
problem_solv	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3
word_corpu	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
word_found	LOW PEAK 2016	FAL	FAL	FAL	FAL	FAL	TRU	1

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		SE	SE	SE	SE	SE	E	
base_search	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRUE	TRUE	FAL SE	TRU E	TRU E	TRU E	5
data_store	EQUILIBRIUM	TRUE E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
neg_neutral	LOW PEAK 2014HIGH PEAK 2016	TRUE E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
issu_march	HIGH PEAK 2015	TRUE E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
search_algorithm	LOW PEAK 2016HIGH PEAK 2017	TRUE E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
recal_valu	LOW PEAK 2014HIGH PEAK 2015	TRUE E	FAL SE	TRU E	FAL SE	TRU E	FAL SE	3
techniqu_base	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
data_prepoces	EQUILIBRIUM	TRUE E	TRU E	FAL SE	TRU E	FAL SE	TRU E	4
method_perfor	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
obtain_us	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
statist_model	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	1
accuraci_rate	LOW PEAK 2014HIGH PEAK 2015	TRUE E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
textual_inform	LOW PEAK 2017	TRUE E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
cluster_data	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
test_collect	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	FAL SE	4
semant_inform	LOW PEAK 2014HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
assist_professor	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
weight_word	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
bayesian_classifi	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
given_text	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
word_filter	LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	TRU E	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
content_word	LOW PEAK 2015HIGH PEAK 2017	TRU E	FAL SE	FAL SE	TRU E	TRU E	FAL SE	3
execut_time	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
highest_score	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
repres_number	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
analyz_data	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
model_gener	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	1
repres_word	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
languag_word	LOW PEAK 2016	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
topic_word	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
represent_word	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	FAL SE	3
tweet_us	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
base_algorithm	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
model_paramet	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
document_sentenc	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	FAL SE	3
content_text	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
method_automat	LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
user_user	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
further_process	LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
system_implement	LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3
process_perfor	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
springer_berlin	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	2
accuraci_us	LOW PEAK 2015HIGH PEAK 2016	TRU	FAL	FAL	TRU	FAL	TRU	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
	LOW PEAK 2017	E	SE	SE	E	SE	E	
technolog_com put	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
volum_page	DECREASING	TRU E	TRU E	FAL SE	TRU E	TRU E	FAL SE	4
featur_gener	DECREASING	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
perform_measu r	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
base_analysi	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
amount_inform	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	FAL SE	TRU E	TRU E	FAL SE	2
document_level	DECREASING	TRU E	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	2
input_documen t	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
sentenc_base	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	2
mine_applic	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
valu_term	HIGH PEAK 2014	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
word_cloud	HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
root_form	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
improv_qualiti	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	FAL SE	3
societi_inform	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
us_algorithm	LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
model_develop	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	FAL SE	3
previou_studi	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
posit_word	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	FAL SE	TRU E	3
text_contain	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
detect_system	LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
charact_recogni t	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
model_test	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	FAL SE	TRU E	FAL SE	3
frequent_items et	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
measur_perfor m	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
document_calc ul	LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
gibb_sampl	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
solut_problem	LOW PEAK 2015HIGH PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	2
avail_onlin	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	TRU E	FAL SE	TRU E	3
weight_assign	LOW PEAK 2014HIGH PEAK 2015	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
model_topic	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	FAL SE	3
measur_text	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1
help_user	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
cluster_perform	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
rank_document	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
train_sampl	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
perform_experi	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
previou_step	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
step_process	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
time_complex	HIGH PEAK 2015	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
number_text	LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
us_techniqu	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	TRU E	FAL SE	2
find_similar	HIGH PEAK 2014 LOW PEAK	FAL	FAL	FAL	FAL	TRU	FAL	1

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
	2016HIGH PEAK 2017	SE	SE	SE	SE	E	SE	
correctli_classifi	LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
word_process	LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
languag_arab	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	2
type_data	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
data_avail	LOW PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	FAL SE	TRU E	3
mine_data	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1
number_user	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
extract_system	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
dimension_vect or	EQUILIBRIUM	FAL SE	FAL SE	TRU E	TRU E	TRU E	FAL SE	3
learn_text	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
techniqu_appli	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
semant_mean	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
similar_valu	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
charact_word	LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
cluster_centroid	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
function_word	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
user_search	HIGH PEAK 2014	TRU E	TRU E	FAL SE	TRU E	FAL SE	TRU E	4
word_number	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
order_reduc	LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
degre_comput	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
dimension_data	LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	TRU E	2

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
exist_method	LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
extract_data	LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
vector_word	LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	TRU E	FAL SE	3
knowledg_engi n	LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
scienc_depart	LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
string_match	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
main_problem	EQUILIBRIUM	TRU E	FAL SE	FAL SE	TRU E	TRU E	FAL SE	3
model_classifi	LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
measur_us	LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	2
origin_text	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1
statist_inform	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
measur_evalu	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	FAL SE	2
find_relev	LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
arab_corpu	LOW PEAK 2015HIGH PEAK 2017	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4
system_architec tur	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	2
assign_weight	LOW PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
mean_text	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
addit_featur	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
topic_base	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
weight_averag	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
word_token	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	FAL SE	3
group_group	LOW PEAK 2014HIGH PEAK 2015	TRU	FAL	TRU	FAL	TRU	TRU	4

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	SE	E	SE	E	E	
process_model	LOW PEAK 2014 HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
score_score	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
preprocess_text	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
algorithm_document	LOW PEAK 2015 HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
classifi_perform	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
word_semant	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3
analysi_document	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	TRU E	3
us_term	LOW PEAK 2014 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
combin_word	HIGH PEAK 2015 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
network_base	HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
time_term	LOW PEAK 2015 HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
gener_topic	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
improv_effici	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
data_contain	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
free_text	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
linear_combin	LOW PEAK 2014 HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
system_extract	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	2
classifi_test	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
tech_niqu	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	2
us_train	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
word_common	HIGH PEAK 2014 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
count_number	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
evalu_model	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
experi_perform	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	FAL SE	TRU E	FAL SE	FAL SE	3
classif_base	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
featur_train	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
mine_us	LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
term_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
model_method	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
provid_inform	EQUILIBRIUM	FAL SE	TRU E	FAL SE	TRU E	FAL SE	TRU E	3
start_point	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
process_method	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	FAL SE	TRU E	FAL SE	TRU E	3
textual_document	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	TRU E	FAL SE	TRU E	TRU E	FAL SE	3
applic_text	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
corpu_document	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
gener_model	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
group_similar	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
lexicon_base	LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
valu_document	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	1
data_test	LOW PEAK 2016	TRU E	TRU E	FAL SE	FAL SE	FAL SE	TRU E	3
word_select	LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1
base_topic	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
human_factor	LOW PEAK 2014HIGH PEAK 2015	TRU	TRU	TRU	TRU	TRU	FAL	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	E	E	E	E	SE	
predefin_categ ori	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
classifi_categor i	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	2
document_total	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	TRU E	2
sentenc_length	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
word_approach	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	TRU E	FAL SE	3
cluster_qualiti	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
collect_text	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
maximum_likeli hood	HIGH PEAK 2014	FAL SE	TRU E	TRU E	FAL SE	TRU E	FAL SE	3
measur_valu	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
us_support	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
word_includ	HIGH PEAK 2015	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
document_cons id	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
empir_studi	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
system_test	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
comput_similar	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
corpu_text	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	FAL SE	TRU E	3
morgan_kaufm ann	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
stem_us	LOW PEAK 2014HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
averag_number	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
frequenc_count	LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
includ_text	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
techniqu_extractor	LOW PEAK 2016 HIGH PEAK 2017	TRUE E	TRUE E	FALSE SE	FALSE SE	TRUE E	TRUE E	4
develop_method	LOW PEAK 2015 HIGH PEAK 2016	TRUE E	FALSE SE	FALSE SE	FALSE SE	FALSE SE	TRUE E	2
given_word	LOW PEAK 2015	TRUE E	FALSE SE	FALSE SE	FALSE SE	FALSE SE	FALSE SE	1
process_reduc	LOW PEAK 2014 HIGH PEAK 2016 LOW PEAK 2017	FALSE SE	FALSE SE	FALSE SE	FALSE SE	FALSE SE	FALSE SE	0
train_us	EQUILIBRIUM	FALSE SE	FALSE SE	TRUE E	FALSE SE	FALSE SE	FALSE SE	1
us_simpl	LOW PEAK 2017	FALSE SE	FALSE SE	TRUE E	FALSE SE	FALSE SE	TRUE E	2
word_context	EQUILIBRIUM	TRUE E	FALSE SE	TRUE E	FALSE SE	FALSE SE	TRUE E	3
wordnet_lexic	LOW PEAK 2014 HIGH PEAK 2015	TRUE E	FALSE SE	TRUE E	FALSE SE	TRUE E	TRUE E	4
emot_categor	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	FAL SE	5
represent_us	LOW PEAK 2015 HIGH PEAK 2016	TRUE E	TRUE E	FALSE SE	TRUE E	TRUE E	FAL SE	4
time_word	EQUILIBRIUM	TRUE E	FALSE SE	FALSE SE	FALSE SE	TRUE E	TRUE E	3
word_exampl	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2016	TRUE E	FALSE SE	FALSE SE	FALSE SE	FALSE SE	FAL SE	1
issu_issn	HIGH PEAK 2014	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
posit_fals	LOW PEAK 2014 HIGH PEAK 2015	TRUE E	FALSE SE	TRUE E	FALSE SE	TRUE E	TRUE E	4
user_tweet	EQUILIBRIUM	TRUE E	TRUE E	TRUE E	TRUE E	FALSE SE	TRUE E	5
weight_approac	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	FALSE SE	FALSE SE	FALSE SE	TRUE E	FALSE SE	TRUE E	2
index_document	EQUILIBRIUM	FALSE SE	FALSE SE	TRUE E	FALSE SE	TRUE E	TRUE E	3
perform_classifi	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	FALSE SE	FALSE SE	TRUE E	FALSE SE	FALSE SE	TRUE E	2
address_proble	LOW PEAK 2014 HIGH PEAK 2015	FALSE SE	FALSE SE	TRUE E	TRUE E	FALSE SE	FAL SE	2
document_rank	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FALSE SE	TRUE E	TRUE E	FALSE SE	TRUE E	TRUE E	4
pattern_analysi	EQUILIBRIUM	FALSE SE	FALSE SE	FALSE SE	TRUE E	FALSE SE	TRUE E	2
us_vector	HIGH PEAK 2014 LOW PEAK	FALSE	TRUE	TRUE	FALSE	TRUE	FAL	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
	2016HIGH PEAK 2017	SE	E	E	SE	E	SE	
princip_compon	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
term_number	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3
mine_task	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
perform_cluster	LOW PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	FAL SE	TRU E	3
take_advantag	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	1
algorithm_stem	HIGH PEAK 2015	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
white_space	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	FAL SE	TRU E	FAL SE	2
featur_us	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	FAL SE	FAL SE	2
graph_node	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
weight_calcul	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
spam_detect	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
store_databas	LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
mixtur_model	EQUILIBRIUM	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
method_evalu	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	FAL SE	3
inform_avail	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
precis_valu	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
suffix_strip	HIGH PEAK 2015	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
sourc_inform	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	2
featur_repres	HIGH PEAK 2014	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	1
classifi_featur	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	TRU E	FAL SE	TRU E	FAL SE	TRU E	3
process_word	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
algorithm_devel op	HIGH PEAK 2014 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
main_reason	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	TRU E	FAL SE	TRU E	3
base_stem	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	TRU E	4
comput_approa ch	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
given_queri	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
perform_algorit hm	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	TRU E	TRU E	3
stopword_remo v	LOW PEAK 2015HIGH PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	TRU E	TRU E	3
inform_word	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	FAL SE	2
model_word	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	TRU E	FAL SE	3
optic_charact	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
scienc_applic	EQUILIBRIUM	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
learn_object	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
automat_evalu	DECREASING	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
vector_featur	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3
model_compar	HIGH PEAK 2014	FAL SE	TRU E	TRU E	FAL SE	FAL SE	FAL SE	2
term_select	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	FAL SE	TRU E	3
us_gram	HIGH PEAK 2014	TRU E	TRU E	FAL SE	TRU E	FAL SE	FAL SE	3
user_defin	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	FAL SE	2
base_user	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
index_process	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
similar_mean	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
gram_base	LOW PEAK 2014HIGH PEAK 2015	TRU	TRU	TRU	FAL	TRU	FAL	4

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	E	E	SE	E	SE	
sourc_data	HIGH PEAK 2015	FAL SE	TRU E	TRU E	TRU E	TRU E	FAL SE	4
text_messag	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
technolog_volum	LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
analysi_social	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	FAL SE	TRU E	3
base_techniqu	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
dataset_train	LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	1
select_algorith	HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
token_stop	EQUILIBRIUM	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1
us_wordnet	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
valu_pair	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
base_represent	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	FAL SE	TRU E	FAL SE	TRU E	4
facebook_twitt	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
us_wikipedia	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
class_number	LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
dimension_feat	EQUILIBRIUM	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
extract_techiq	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
model_automat	HIGH PEAK 2014	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
european_langu	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
text_repres	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
comput_network	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
method_combi	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
word_match	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
algorithm_find	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
data_consist	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
featur_includ	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
form_stem	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
token_process	LOW PEAK 2014HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
weight_vector	HIGH PEAK 2014	FAL SE	TRU E	TRU E	TRU E	TRU E	FAL SE	4
consist_document	EQUILIBRIUM	FAL SE	TRU E	TRU E	FAL SE	FAL SE	TRU E	3
sentenc_structur	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
system_consist	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
test_model	DECREASING	TRU E	FAL SE	FAL SE	TRU E	TRU E	FAL SE	3
analysi_machin	EQUILIBRIUM	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
frequenc_weight	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	TRU E	FAL SE	TRU E	FAL SE	TRU E	3
measur_calcul	HIGH PEAK 2014	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	1
workshop_comput	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
text_dataset	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
us_equat	LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
collect_corpu	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	2
lexic_featur	DECREASING	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
mean_valu	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
model_extract	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
perform_analysi	LOW PEAK 2015HIGH PEAK 2016	TRU	FAL	FAL	FAL	TRU	TRU	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	SE	SE	SE	E	E	
corpu_word	LOW PEAK 2016	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
model_system	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
us_rule	EQUILIBRIUM	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
concept_document	LOW PEAK 2015HIGH PEAK 2017	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
catégori_categori	LOW PEAK 2015HIGH PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	TRU E	TRU E	3
length_document	LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3
north_chapter	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
overal_perform	DECREASING	TRU E	FAL SE	TRU E	FAL SE	TRU E	FAL SE	3
document_length	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	TRU E	3
cluster_accuraci	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
good_perform	HIGH PEAK 2014	FAL SE	TRU E	TRU E	TRU E	FAL SE	FAL SE	3
list_stop	EQUILIBRIUM	FAL SE	TRU E	FAL SE	TRU E	FAL SE	TRU E	3
index_html	LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	FAL SE	FAL SE	2
algorithm_implement	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
convert_text	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
word_elimin	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
improv_text	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
collect_tweet	LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
count_word	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1
extract_knowle	dg	LOW PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	3
statist_signific	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	TRU E	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	2

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
emot_text	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
knowledg_extract	LOW PEAK 2016	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
term_queri	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
semant_evalu	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
method_extract	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
overal_accuraci	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
repres_term	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	TRU E	FAL SE	2
approach_automat	LOW PEAK 2014 HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	TRU E	2
automat_classifi	EQUILIBRIUM	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
method_describ	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
languag_specif	DECREASING	FAL SE	TRU E	FAL SE	TRU E	FAL SE	TRU E	3
node_repres	LOW PEAK 2014 HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
topic_text	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
difficult_task	LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	FAL SE	TRU E	3
access_inform	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	TRU E	3
depart_inform	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	TRU E	FAL SE	TRU E	FAL SE	FAL SE	2
naïv_bayesian	LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
queri_word	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
caus_effect	LOW PEAK 2014 HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
comput_base	EQUILIBRIUM	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
fine_grain	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	TRU E	FAL SE	TRU E	FAL SE	TRU E	3
measur_defin	LOW PEAK 2016 HIGH PEAK 2017	TRU	FAL	FAL	FAL	FAL	TRU	2

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	SE	SE	SE	SE	E	
text_written	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	TRU E	2
distribut_document	DECREASING	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
lower_case	LOW PEAK 2017	TRU E	TRU E	FAL SE	TRU E	FAL SE	TRU E	4
recognit_system	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
semi_automat	LOW PEAK 2014 HIGH PEAK 2015	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4
consist_word	LOW PEAK 2014 HIGH PEAK 2015	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
context_base	LOW PEAK 2014 HIGH PEAK 2015	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
dataset_us	LOW PEAK 2016	TRU E	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	2
process_phase	LOW PEAK 2014 HIGH PEAK 2015	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
us_corpu	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
word_distribut	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
term_occurr	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
method_cluster	DECREASING	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	TRU E	2
token_text	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	FAL SE	FAL SE	2
compon_analysi	LOW PEAK 2015 HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
gener_term	LOW PEAK 2014 HIGH PEAK 2015	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
semant_structur	LOW PEAK 2014 HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
stem_reduc	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
term_accuraci	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	TRU E	2
cluster_word	LOW PEAK 2014 HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
document_give_n	HIGH PEAK 2015 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
system_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
text_understan d	EQUILIBRIUM	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
us_mean	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
document_extr act	HIGH PEAK 2014	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
frequenc_calcul	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	FAL SE	TRU E	FAL SE	TRU E	3
document_grou p	HIGH PEAK 2014	FAL SE	TRU E	FAL SE	FAL SE	TRU E	TRU E	3
domain_knowle dg	LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3
gener_content	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
learn_data	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
retriev_base	DECREASING	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
algorithm_mea n	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2016	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
approach_perfo rm	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	1
model_approac h	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	FAL SE	FAL SE	2
network_us	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
gram_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
model_combin	DECREASING	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	1
stemmer_algori thm	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	FAL SE	FAL SE	2
valu_paramet	DECREASING	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
valu_word	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	TRU E	2
accuraci_tabl	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
assign_word	DECREASING	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
base_measur	LOW PEAK 2016HIGH PEAK 2017	TRU	TRU	FAL	FAL	TRU	FAL	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	E	SE	SE	E	SE	
process_approach	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
us_latent	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
gener_algorithm	LOW PEAK 2014HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
preprocess_techniqu	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	FAL SE	FAL SE	3
rule_rule	DECREASING	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
level_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
process_base	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	2
relev_queri	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
document_test	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	1
document_acco	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
order_evalu	HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
base_learn	HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
algorithm_suffix	LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
approach_featu	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
time_process	HIGH PEAK 2014	FAL SE	TRU E	TRU E	FAL SE	FAL SE	TRU E	3
equal_number	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
improv_cluster	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
classif_docume	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
gener_process	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
jordan_latent	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
label_train	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	TRU E	TRU E	FAL SE	4

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
model_describ	HIGH PEAK 2014	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	1
us_topic	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	FAL SE	3
base_machin	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
frequenc_numb er	LOW PEAK 2016	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
process_includ	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	TRU E	2
word_assign	LOW PEAK 2015HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	FAL SE	2
automat_classif	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
calcul_term	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	2
signific_improv	LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
stage_process	HIGH PEAK 2014	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
valu_indic	LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	TRU E	3
analysi_tool	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	1
gener_method	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
vector_us	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
origin_data	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
comput_secur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
engin_depart	LOW PEAK 2017	TRU E	TRU E	FAL SE	TRU E	FAL SE	TRU E	4
frequent_item	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
http_github	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
increas_perfor m	LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
occurredocume nt	LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	TRU E	2
similar_cluster	HIGH PEAK 2014	FAL	TRU	TRU	TRU	FAL	TRU	4

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
		SE	E	E	E	SE	E	
studi_featur	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
token_stem	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
us_weight	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
word_reduc	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	1
base_number	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
data_includ	LOW PEAK 2017	TRU E	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	2
dataset_collect	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
find_word	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
learn_train	LOW PEAK 2015HIGH PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	2
reduc_time	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
weight_document	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
word_collect	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	0
corpu_train	HIGH PEAK 2014	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
learn_system	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
accuraci_classif	LOW PEAK 2014HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
algorithm_compar	LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
base_form	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
contain_text	LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
dataset_experi	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	2
pair_word	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	FAL SE	3
approach_combin	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
includ_word	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
problem_text	LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
reduct_techniq u	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	FAL SE	TRU E	FAL SE	TRU E	3
remov_punctua t	EQUILIBRIUM	FAL SE	TRU E	FAL SE	TRU E	FAL SE	TRU E	3
score_system	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
select_docume nt	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
type_featur	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
us_model	HIGH PEAK 2014	FAL SE	TRU E	TRU E	FAL SE	FAL SE	FAL SE	2
mobil_phone	HIGH PEAK 2014	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
select_relev	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
system_data	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
gener_us	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
order_extract	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
perfor_manc	DECREASING	TRU E	TRU E	FAL SE	TRU E	FAL SE	FAL SE	3
recal_recal	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
rule_extract	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
structur_text	LOW PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	2
word_train	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	FAL SE	TRU E	FAL SE	FAL SE	3
combin_model	EQUILIBRIUM	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
data_classif	LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
time_featur	LOW PEAK 2014HIGH PEAK 2015	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
gener_categori	LOW PEAK 2014HIGH PEAK 2015	TRU	TRU	TRU	TRU	TRU	TRU	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	E	E	E	E	E	
model_term	LOW PEAK 2014 HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
probabilist_late nt	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	FAL SE	4
search_word	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
order_word	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	FAL SE	TRU E	3
predict_class	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
base_applic	LOW PEAK 2014 HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
bay_classif	HIGH PEAK 2014	FAL SE	TRU E	TRU E	TRU E	FAL SE	FAL SE	3
binari_classif	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
learn_inform	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
note_comput	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
number_class	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	TRU E	FAL SE	3
perform_inform	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	FAL SE	2
techniqu_find	LOW PEAK 2014 HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3
main_step	LOW PEAK 2014 HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3
make_difficult	HIGH PEAK 2015 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
servic_servic	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
method_classif	DECREASING	FAL SE	TRU E	TRU E	FAL SE	FAL SE	FAL SE	2
model_latent	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
model_process	LOW PEAK 2014 HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
statist_measur	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
stem_method	DECREASING	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
topic_gener	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
tradit_approach	LOW PEAK 2014HIGH PEAK 2015	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
data_format	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	FAL SE	TRU E	FAL SE	TRU E	3
featur_term	LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	FAL SE	2
posit_class	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
score_function	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	FAL SE	3
term_precis	DECREASING	FAL SE	FAL SE	TRU E	TRU E	TRU E	FAL SE	3
total_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
divid_number	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
present_model	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
word_group	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
approach_develop	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	TRU E	4
compar_word	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
find_optim	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
further_improv	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	2
probabl_word	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	TRU E	4
proce_ing	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
data_form	DECREASING	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
neg_sentiment	LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
servic_orient	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
cluster_gener	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
train_phase	HIGH PEAK 2014 LOW PEAK 2017	FAL	TRU	TRU	FAL	FAL	FAL	2

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		SE	E	E	SE	SE	SE	
		FAL	FAL	TRU	FAL	TRU	TRU	
cluster_mean	LOW PEAK 2016HIGH PEAK 2017	SE	SE	E	SE	E	E	3
document_set	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
file_file	EQUILIBRIUM	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
inform_sourc	EQUILIBRIUM	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
neighbor_algori thm	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	FAL SE	TRU E	3
preprocess_doc ument	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
structur_inform	HIGH PEAK 2014	FAL SE	FAL SE	TRU E	TRU E	TRU E	FAL SE	3
us_approach	LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
dataset_evalu	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
mine_pattern	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
model_user	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	FAL SE	FAL SE	2
model_vector	LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	FAL SE	4
size_data	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	FAL SE	3
struc_ture	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	TRU E	TRU E	FAL SE	4
calcul_number	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
number_charac t	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
system_support	LOW PEAK 2014HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
us_combin	LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
user_interact	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	FAL SE	TRU E	4
data_represent	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4
experi_evalu	DECREASING	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
gener_purpos	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
linguist_human	DECREASING	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
tech_nologi	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
word_frequent	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	2
automat_proce ss	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
remov_prefix	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	FAL SE	TRU E	3
select_word	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
us_naïv	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
correct_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
perform_poorli	HIGH PEAK 2014	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
type_type	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
retriev_perform	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
effect_featur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
data_gather	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
inform_filter	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
overcom_probl em	EQUILIBRIUM	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
method_arab	HIGH PEAK 2014	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
reduc_size	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	FAL SE	FAL SE	2
stem_techniqu	DECREASING	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
us_document	HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
import_word	EQUILIBRIUM	FAL SE	TRU E	TRU E	FAL SE	TRU E	FAL SE	3
perform_featur	EQUILIBRIUM	FAL	TRU	FAL	TRU	FAL	TRU	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		SE	E	SE	E	SE	E	
approach_classifi	DECREASING	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
perform_document	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
algorithm_data	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	FAL SE	TRU E	3
cluster_group	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	FAL SE	TRU E	3
estim_probabl	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
given_topic	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
model_implement	EQUILIBRIUM	FAL SE	TRU E	TRU E	FAL SE	FAL SE	TRU E	3
order_achiev	LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
vector_model	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	TRU E	FAL SE	3
inform_data	LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	1
total_document	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
document_comput	EQUILIBRIUM	TRU E	FAL SE	FAL SE	TRU E	TRU E	FAL SE	3
algorithm_test	DECREASING	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
fuzzi_set	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
system_process	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4
term_semant	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	2
token_part	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
train_train	LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
tree_algorithm	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
detect_us	LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	FAL SE	3
help_identifi	LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
input_word	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	FAL SE	3
contain_number	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
group_document	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
approach_analyz	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	TRU E	2
method_consid	EQUILIBRIUM	FAL SE	TRU E	FAL SE	TRU E	FAL SE	TRU E	3
document_user	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	FAL SE	3
languag_base	LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
commun_engin	LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
corpu_number	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	FAL SE	TRU E	TRU E	FAL SE	2
perform_term	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	TRU E	TRU E	FAL SE	2
collect_word	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	1
detail_descript	DECREASING	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
inform_us	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
tree_classifi	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
word_exist	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
analysi_opinion	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
effect_us	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	FAL SE	TRU E	4
method_measur	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
paramet_valu	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
supervis_unsupervis	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
text_consid	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
averag_valu	HIGH PEAK 2014 LOW PEAK	TRU	TRU	FAL	TRU	TRU	TRU	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
	2016HIGH PEAK 2017	E	E	SE	E	E	E	
bay_theorem	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
evalu_classifi	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
pattern_gener	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
perform_improv	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
preprocess_data	HIGH PEAK 2014	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
test_system	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
word_search	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	FAL SE	3
faculti_scienc	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
form_us	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	FAL SE	TRU E	TRU E	4
linguist_resourc	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
semant_network	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
variou_featur	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	FAL SE	TRU E	FAL SE	TRU E	4
written_text	DECREASING	TRU E	TRU E	FAL SE	TRU E	FAL SE	TRU E	4
catégori_word	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4
context_awar	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
extract_tweet	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
order_logic	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
select_term	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
simpl_word	EQUILIBRIUM	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
appear_frequent	HIGH PEAK 2014	FAL SE	TRU E	TRU E	FAL SE	FAL SE	TRU E	3
method_select	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	FAL SE	TRU E	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
modern_inform	HIGH PEAK 2015 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
term_gener	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	FAL SE	3
evalu_evalu	HIGH PEAK 2014	FAL SE	TRU E	TRU E	FAL SE	FAL SE	TRU E	3
method_improv	HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
model_defin	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
multinomi_distr ibut	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
size_train	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
specif_topic	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	TRU E	TRU E	TRU E	FAL SE	4
approach_clust er	EQUILIBRIUM	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
describ_detail	LOW PEAK 2015 HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	TRU E	4
document_thu	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
gram_model	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
train_time	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
convert_word	HIGH PEAK 2015 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
divid_total	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	FAL SE	TRU E	FAL SE	FAL SE	TRU E	FAL SE	2
improv_precis	HIGH PEAK 2014	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
document_order	LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	TRU E	3
gram_featur	LOW PEAK 2014 HIGH PEAK 2017	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
main_featur	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
mine_machin	LOW PEAK 2014 HIGH PEAK 2015	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
repr_sent	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
test_evalu	LOW PEAK 2015 HIGH PEAK 2016	TRU	TRU	TRU	TRU	FAL	FAL	4

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	E	E	E	SE	SE	
websit_http	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
calcul_frequenc	LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
comput_semant	LOW PEAK 2015 HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
subset_featur	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
system_arab	DECREASING	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
algorithm_predict	LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
gener_data	LOW PEAK 2015 HIGH PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	TRU E	TRU E	3
mine_natur	LOW PEAK 2017	TRU E	TRU E	FAL SE	TRU E	FAL SE	FAL SE	3
multi_label	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	FAL SE	3
node_graph	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
word_test	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
design_model	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
further_develop	LOW PEAK 2015 HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
model_construct	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
sampl_data	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
salton_bucklei	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
applic_develop	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
automat_document	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
document_avail	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	TRU E	3
model_consid	HIGH PEAK 2014	FAL SE	TRU E	TRU E	TRU E	TRU E	FAL SE	4
stem_step	LOW PEAK 2014 HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	FAL SE	FAL SE	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
arxiv_preprint	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
classifi_classif	EQUILIBRIUM	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
classifi_support	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
mean_document	HIGH PEAK 2014	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
method_comput	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	FAL SE	3
technolog_issn	DECREASING	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
appear_time	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	TRU E	4
auto_matic	DECREASING	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
captur_semant	EQUILIBRIUM	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
linguist_structur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
perform_base	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	TRU E	FAL SE	FAL SE	3
word_refer	LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
data_obtain	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
describ_system	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	FAL SE	3
direct_graph	HIGH PEAK 2014	TRU E	TRU E	FAL SE	FAL SE	TRU E	FAL SE	3
help_improv	LOW PEAK 2016	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
linear_model	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
model_provid	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	2
multipl_word	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	TRU E	4
probabl_docum	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
topic_interest	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
word_total	DECREASING	TRU	FAL	TRU	FAL	FAL	TRU	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	SE	E	SE	SE	E	
accuraci_obtain	LOW PEAK 2014 HIGH PEAK 2015	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
class_classifi	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
current_state	LOW PEAK 2014 HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
experi_experi	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
mathemat_com put	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	FAL SE	TRU E	4
measur_cosin	LOW PEAK 2014 HIGH PEAK 2016	TRU E	FAL SE	FAL SE	TRU E	TRU E	FAL SE	3
messag_servic	LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
similar_text	DECREASING	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
achiev_good	LOW PEAK 2015 HIGH PEAK 2016	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
algorithm_term	LOW PEAK 2015 HIGH PEAK 2016	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	TRU E	2
method_model	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
metric_evalu	LOW PEAK 2014 HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
stemmer_arab	LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
system_consid	LOW PEAK 2015 HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	FAL SE	FAL SE	3
system_requir	DECREASING	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
tweet_collect	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
word_user	LOW PEAK 2015 HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
appli_cluster	HIGH PEAK 2014	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
learn_task	LOW PEAK 2015 HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
document_orga n	HIGH PEAK 2014	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
measur_comput	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
term_given	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	TRU E	3
user_find	LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
bay_model	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
consid_term	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3
mcgraw_hill	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
method_document	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
model_cluster	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
retriev_data	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	FAL SE	TRU E	2
search_inform	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	FAL SE	4
basic_idea	HIGH PEAK 2014	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	1
blog_post	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
comput_survei	HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
deriv_word	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	FAL SE	3
main_contribut	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	FAL SE	TRU E	4
estim_paramet	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
form_cluster	DECREASING	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
method_name	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
model_techniqu	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	TRU E	TRU E	FAL SE	FAL SE	3
neural_inform	DECREASING	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
binari_classifi	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
charact_token	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
latent_variabl	HIGH PEAK 2014	TRU	TRU	TRU	TRU	TRU	TRU	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	E	E	E	E	E	
system_comput	LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
task_automat	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	TRU E	TRU E	FAL SE	2
text_includ	LOW PEAK 2014 HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
us_neural	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
algorithm_describ	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
algorithm_method	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
algorithm_requier	LOW PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	2
applic_us	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
calcul_score	LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	FAL SE	3
featur_number	DECREASING	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
inform_base	DECREASING	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
method_achiev	LOW PEAK 2014 HIGH PEAK 2015 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
studi_focus	LOW PEAK 2014 HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
comput_program	LOW PEAK 2014 HIGH PEAK 2015	TRU E	FAL SE	TRU E	TRU E	FAL SE	FAL SE	3
dataset_test	DECREASING	TRU E	FAL SE	FAL SE	TRU E	FAL SE	TRU E	3
identifi_emot	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
replac_word	LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	TRU E	4
statist_data	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
automat_detect	LOW PEAK 2015 HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
calcul_word	LOW PEAK 2016 HIGH PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	2
commun_syste m	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
develop_tool	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
featur_classif	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
graphic_model	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
process_term	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
semant_resourc	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
text_analyt	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
word_weight	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	FAL SE	FAL SE	TRU E	3
match_match	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
valu_obtain	DECREASING	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
defin_term	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
us_maximum	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
cluster_comput	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
space_word	HIGH PEAK 2014	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
token_document	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
model_dataset	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
novel_approach	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	TRU E	4
vocabulari_word	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
frequenc_measur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	FAL SE	TRU E	FAL SE	2
ground_truth	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
level_represent	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
process_select	LOW PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	FAL SE	TRU E	2
algorithm_auto	HIGH PEAK 2014 LOW PEAK	TRU	TRU	TRU	TRU	FAL	TRU	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
mat	2015HIGH PEAK 2016	E	E	E	E	SE	E	
index_word	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
proc_sigir	LOW PEAK 2015HIGH PEAK 2017	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
algorithm_achie v	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
appli_algorithm	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
averag_length	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
evalu_base	HIGH PEAK 2014	FAL SE	TRU E	TRU E	FAL SE	FAL SE	FAL SE	2
form_term	LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
machin_intellig	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	FAL SE	TRU E	2
mine_base	LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
professor_comput	LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3
techniqu_reduc	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
us_tool	DECREASING	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
vector_term	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
evalu_dataset	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
extract_semant	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	FAL SE	3
process_machin	LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
adject_noun	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	TRU E	4
collect_process	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
gradient_desce nt	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
inform_structur	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4
languag_world	DECREASING	TRU E	TRU E	FAL SE	TRU E	FAL SE	FAL SE	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
learn_us	DECREASING	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
model_make	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
text_form	HIGH PEAK 2014 LOW PEAK 2016	TRU E	TRU E	FAL SE	FAL SE	FAL SE	TRU E	3
analysi_natur	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	FAL SE	4
complex_syste m	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
levenshtein_dis tanc	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
million_peopl	DECREASING	TRU E	TRU E	FAL SE	TRU E	FAL SE	FAL SE	3
model_structur	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
remain_word	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	TRU E	TRU E	3
search_data	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
approach_solv	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
document_conv ert	HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	TRU E	FAL SE	3
extern_knowled g	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	TRU E	TRU E	TRU E	TRU E	FAL SE	4
appli_document	HIGH PEAK 2014	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
assign_categor	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	FAL SE	TRU E	TRU E	3
distribut_data	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
network_commu n	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
tree_base	LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
larger_number	HIGH PEAK 2014	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
novel_method	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	TRU E	FAL SE	3
preprint_arxiv	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
represent_vect	HIGH PEAK 2014 LOW PEAK	FAL	TRU	TRU	TRU	TRU	TRU	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
or	2016HIGH PEAK 2017	SE	E	E	E	E	E	
us_keyword	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
data_classifi	LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	TRU E	FAL SE	3
distribut_term	LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
group_base	LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	FAL SE	4
relev_user	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
summar_task	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
type_word	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
vector_weight	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
weight_weight	LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3
approach_meth od	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
column_repres	EQUILIBRIUM	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
dept_comput	LOW PEAK 2015HIGH PEAK 2017	FAL SE	TRU E	FAL SE	TRU E	TRU E	FAL SE	3
keyword_searc h	LOW PEAK 2015HIGH PEAK 2017	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
measur_word	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	FAL SE	FAL SE	2
model_analysi	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
perform_compa rison	EQUILIBRIUM	FAL SE	FAL SE	TRU E	FAL SE	TRU E	FAL SE	2
user_input	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
approach_gener	HIGH PEAK 2014	TRU E	TRU E	FAL SE	FAL SE	FAL SE	FAL SE	2
base_keyword	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
base_multi	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
base_score	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
base_valu	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
data_size	DECREASING	TRU E	TRU E	FAL SE	FAL SE	TRU E	TRU E	4
data_social	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
perform_variou	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
reduc_comput	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
studi_us	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
us_measur	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4
word_input	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	FAL SE	TRU E	FAL SE	TRU E	3
workshop_text	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4
accuraci_score	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
approach_identi fi	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
base_queri	EQUILIBRIUM	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
determin_word	EQUILIBRIUM	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
maximum_valu	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
model_creat	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
take_time	DECREASING	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
us_number	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
user_us	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
averag_time	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
classifi_predict	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
knowledg_infor m	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	FAL SE	TRU E	TRU E	FAL SE	3
perform_stem	LOW PEAK 2015HIGH PEAK 2017	TRU	TRU	FAL	FAL	TRU	TRU	4

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	E	SE	SE	E	E	
valu_given	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
word_replac	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
document_app ear	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	FAL SE	3
kullback_leibler	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
number_distinc t	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
learn_autom	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3
requir_number	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
becom_popular	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	TRU E	3
process_call	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3
similar_featur	LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	FAL SE	4
singl_term	HIGH PEAK 2014	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
term_calcul	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	TRU E	TRU E	FAL SE	3
term_topic	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
type_document	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
appli_mathema t	LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
creat_word	EQUILIBRIUM	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
decreas_numbe r	LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
master_degre	HIGH PEAK 2014 LOW PEAK 2017	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
test_train	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	FAL SE	3
text_evalu	HIGH PEAK 2015 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	TRU E	FAL SE	3
cosin_angl	EQUILIBRIUM	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
evalu_cluster	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
evalu_lrec	LOW PEAK 2014HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
given_user	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
includ_step	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	TRU E	FAL SE	3
likelihood_estim	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
mine_icdm	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
model_experi	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
optim_number	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
process_order	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
queri_queri	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
recent_studi	LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
similar_concept	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
strip_program	LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3
classifi_emot	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
consid_word	DECREASING	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
inform_featur	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
measur_combin	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
model_number	LOW PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	FAL SE	TRU E	3
refer_word	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
techniqu_stem	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
word_letter	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
approach_prese	EQUILIBRIUM	TRU	TRU	TRU	TRU	TRU	FAL	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
nt		E	E	E	E	E	SE	
integr_data	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRUE E	TRUE E	FAL SE	TRUE E	FAL SE	TRUE E	4
method_data	DECREASING	TRUE E	TRUE E	TRUE E	FAL SE	FAL SE	TRUE E	4
model_present	LOW PEAK 2015 HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	FAL SE	FAL SE	4
multi_dimensio n	LOW PEAK 2015 HIGH PEAK 2016	TRUE E	FAL SE	FAL SE	TRUE E	TRUE E	TRUE E	4
select_select	LOW PEAK 2015 HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
system_abl	LOW PEAK 2015 HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	FAL SE	5
text_exampl	LOW PEAK 2014 HIGH PEAK 2015	TRUE E	FAL SE	TRUE E	TRUE E	FAL SE	FAL SE	3
base_function	LOW PEAK 2015 HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
develop_base	LOW PEAK 2015 HIGH PEAK 2016	TRUE E	TRUE E	FAL SE	TRUE E	FAL SE	FAL SE	3
emot_analysi	HIGH PEAK 2014	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	FAL SE	5
mine_introduct	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017	TRUE E	TRUE E	FAL SE	FAL SE	FAL SE	TRUE E	3
morpholog_synth tact	LOW PEAK 2015 HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
score_evalu	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	FAL SE	5
servic_name	LOW PEAK 2015 HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
precis_rate	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	FAL SE	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	5
order_compar	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	FAL SE	TRUE E	TRUE E	TRUE E	FAL SE	TRUE E	4
similar_function	HIGH PEAK 2016	FAL SE	FAL SE	TRUE E	TRUE E	TRUE E	TRUE E	4
step_algorithm	HIGH PEAK 2014 LOW PEAK 2017	TRUE E	TRUE E	TRUE E	FAL SE	FAL SE	TRUE E	4
neg_emot	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
particular_categ ori	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017	FAL SE	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	5
advanc_neural	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	FAL SE	TRUE E	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
cluster_form	LOW PEAK 2014HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
html_http	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
particular_document	HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
reduc_dimens	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
stem_approach	EQUILIBRIUM	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
twitter_social	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
accuraci_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	FAL SE	TRU E	TRU E	3
learn_theori	LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
select_appropri	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
task_document	DECREASING	TRU E	TRU E	FAL SE	FAL SE	TRU E	TRU E	4
term_index	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
text_model	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
time_frame	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
analysi_determin	LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
classifi_class	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
creativ_commo_n	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
lower_valu	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
match_algorithm	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
problem_data	DECREASING	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
techniqu_term	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
word_algorithm	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
class_cluster	LOW PEAK 2015HIGH PEAK 2016	TRU	TRU	TRU	TRU	TRU	TRU	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	E	E	E	E	E	
evalu_topic	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
process_describ	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
system_inform	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
tion_retriev	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
total_score	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
user_select	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	FAL SE	TRU E	FAL SE	TRU E	4
word_defin	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
word_find	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
collect_us	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	FAL SE	3
data_perform	LOW PEAK 2016	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
dice_similar	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
formal_defin	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
respons_time	LOW PEAK 2014HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
techniqu_order	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	FAL SE	TRU E	3
distribut_similar	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
probabl_term	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
document_assig_n	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
leibler_diverg	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
bucklei_term	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	FAL SE	FAL SE	TRU E	TRU E	TRU E	3
categor_comput	LOW PEAK 2014HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
collect_dataset	HIGH PEAK 2015	FAL SE	TRU E	TRU E	TRU E	TRU E	FAL SE	4

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
introduct_mode rn	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
keyword_arab	DECREASING	FAL SE	FAL SE	TRU E	FAL SE	TRU E	TRU E	3
search_us	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
size_document	LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
system_page	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
time_document	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
charact_numbe r	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	FAL SE	TRU E	3
document_sele ct	LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
effect_method	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	FAL SE	FAL SE	TRU E	TRU E	FAL SE	TRU E	3
languag_comple x	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	FAL SE	FAL SE	TRU E	TRU E	3
method_take	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	FAL SE	TRU E	TRU E	TRU E	FAL SE	FAL SE	3
signific_amount	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
analysi_classif	HIGH PEAK 2014	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
appli_comput	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4
document_obta in	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
main_focu	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
model_outperfo rm	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	FAL SE	3
probabl_class	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
represent_meth od	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
term_mean	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
word_singl	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	TRU E	4
algorithm_pres	LOW PEAK 2014HIGH PEAK 2015	TRU	FAL	TRU	FAL	TRU	FAL	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
ent		E	SE	E	SE	E	SE	
approach_comput	LOW PEAK 2015HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	FAL SE	FAL SE	4
corpu_includ	LOW PEAK 2014HIGH PEAK 2016	TRUE E	FAL SE	TRUE E	TRUE E	TRUE E	FAL SE	4
data_analyz	LOW PEAK 2015HIGH PEAK 2016	TRUE E	FAL SE	FAL SE	TRUE E	TRUE E	TRUE E	4
data_experi	LOW PEAK 2014HIGH PEAK 2016	TRUE E	FAL SE	TRUE E	TRUE E	FAL SE	TRUE E	4
depend_word	DECREASING	TRUE E	FAL SE	TRUE E	TRUE E	TRUE E	TRUE E	5
describ_method	LOW PEAK 2015HIGH PEAK 2017	TRUE E	FAL SE	FAL SE	TRUE E	TRUE E	TRUE E	4
distribu_tion	LOW PEAK 2016HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	FAL SE	TRUE E	TRUE E	5
frequenc_featur	DECREASING	TRUE E	FAL SE	TRUE E	FAL SE	TRUE E	TRUE E	4
good_accuraci	DECREASING	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
human_behavior	LOW PEAK 2015HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
lucen_apach	LOW PEAK 2016HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	FAL SE	TRUE E	TRUE E	5
main_advantag	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRUE E	FAL SE	TRUE E	TRUE E	FAL SE	TRUE E	4
saudi_arabia	HIGH PEAK 2014	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
tag_tag	LOW PEAK 2016HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	FAL SE	TRUE E	TRUE E	5
us_automat	LOW PEAK 2015HIGH PEAK 2016	TRUE E	TRUE E	FAL SE	TRUE E	TRUE E	TRUE E	5
word_inform	EQUILIBRIUM	TRUE E	FAL SE	TRUE E	FAL SE	TRUE E	TRUE E	4
analysi_identifi	LOW PEAK 2014HIGH PEAK 2015	TRUE E	FAL SE	TRUE E	TRUE E	FAL SE	TRUE E	4
common_attribut	LOW PEAK 2016HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	FAL SE	TRUE E	TRUE E	5
exampl_tweet	HIGH PEAK 2014 LOW PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	FAL SE	TRUE E	5
model_find	LOW PEAK 2016HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	FAL SE	FAL SE	FAL SE	3
normal_term	LOW PEAK 2016HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
polar_text	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
preci_sion	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
system_includ	LOW PEAK 2014HIGH PEAK 2015	TRUE E	FALSE SE	TRUE E	TRUE E	TRUE E	TRUE E	5
text_therefor	LOW PEAK 2016HIGH PEAK 2017	TRUE E	FALSE SE	TRUE E	FALSE SE	TRUE E	FALSE SE	3
theori_applic	LOW PEAK 2015HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	FALSE SE	5
us_linguist	LOW PEAK 2015HIGH PEAK 2016	TRUE E	TRUE E	FALSE SE	TRUE E	TRUE E	FALSE SE	4
word_correspo nd	LOW PEAK 2015HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	FALSE SE	5
neg_train	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
cluster_hierarch	DECREASING	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
document_reduc	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FALSE SE	TRUE E	FALSE SE	TRUE E	TRUE E	TRUE E	4
index_databas	LOW PEAK 2015HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
stage_text	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FALSE SE	TRUE E	FALSE SE	TRUE E	TRUE E	TRUE E	4
class_repres	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRUE E	TRUE E	FALSE SE	TRUE E	TRUE E	TRUE E	5
cluster_evalu	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FALSE SE	TRUE E	TRUE E	TRUE E	TRUE E	FALSE SE	4
document_inclu d	LOW PEAK 2014HIGH PEAK 2016	FALSE SE	FALSE SE	TRUE E	TRUE E	TRUE E	TRUE E	4
experiment_studi	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
identifi_topic	LOW PEAK 2015HIGH PEAK 2017	FALSE SE	TRUE E	FALSE SE	TRUE E	TRUE E	TRUE E	4
social_interact	DECREASING	TRUE E	TRUE E	TRUE E	FALSE SE	TRUE E	TRUE E	5
user_label	LOW PEAK 2015HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	FALSE SE	5
vector_similar	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FALSE SE	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	5
word_normal	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FALSE SE	FALSE SE	TRUE E	FALSE SE	TRUE E	TRUE E	3
descend_order	EQUILIBRIUM	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	3

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		SE	SE	E	SE	E	E	
form_verb	LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
semant_represe nt	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
stem_gener	LOW PEAK 2014HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
stem_porter	EQUILIBRIUM	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
term_contain	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
text_obtain	HIGH PEAK 2014	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
us_languag	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
us_queri	LOW PEAK 2014HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
document_cont ent	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
document_incre as	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
evalu_qualiti	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
filter_us	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
huge_number	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
match_user	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
remov_letter	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
step_preproces s	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	TRU E	FAL SE	FAL SE	3
weight_score	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
word_vocabular i	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
avail_abl	DECREASING	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
document_distr ibut	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
extract_task	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
imag_analysi	LOW PEAK 2014 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
languag_make	DECREASING	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
obtain_cluster	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
process_identifi	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	FAL SE	TRU E	FAL SE	TRU E	4
significantli_red uc	LOW PEAK 2015 HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	TRU E	4
step_extract	LOW PEAK 2015 HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
step_identifi	DECREASING	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
system_term	LOW PEAK 2016 HIGH PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
us_graph	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
us_knowledg	LOW PEAK 2015 HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
approach_mach in	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
independ_assu mpt	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
method_mean	LOW PEAK 2014 HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
number_sampl	LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
origin_dataset	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
problem_autom at	LOW PEAK 2015 HIGH PEAK 2017	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4
twitter_stream	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
user_system	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	FAL SE	TRU E	FAL SE	FAL SE	3
data_distribut	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
document_call	LOW PEAK 2014 HIGH PEAK 2016	FAL SE	FAL SE	TRU E	TRU E	TRU E	FAL SE	3
avail_document	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
calcul_distanc	EQUILIBRIUM	TRU	TRU	TRU	FAL	TRU	TRU	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	E	E	SE	E	E	
input_train	LOW PEAK 2014 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
base_emot	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
develop_evalu	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
featur_evalu	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
linear_function	HIGH PEAK 2014	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
particular_domain	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
randomli_chose_n	HIGH PEAK 2014	FAL SE	TRU E	TRU E	TRU E	TRU E	FAL SE	4
valu_measur	EQUILIBRIUM	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
algorithm_mine	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
analyz_tweet	LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
imag_video	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
measur_find	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
number_retriev	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
process_automat	DECREASING	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
process_take	DECREASING	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
requir_user	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	FAL SE	4
rule_combin	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
signific_word	LOW PEAK 2015 HIGH PEAK 2017	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
appli_stem	LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
applic_servic	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
base_structur	LOW PEAK 2015 HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
calcu_late	EQUILIBRIUM	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
correspond_sen tenc	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
experi_text	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	FAL SE	TRU E	TRU E	FAL SE	3
featur_calcul	HIGH PEAK 2014	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
interact_user	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
map_word	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
order_understa nd	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
search_retriev	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	TRU E	4
token_remov	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
us_gener	DECREASING	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
vector_train	DECREASING	TRU E	TRU E	FAL SE	TRU E	TRU E	FAL SE	4
weight_obtain	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
class_posit	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
commun_comput	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
consist_phase	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
correctli_identifi i	EQUILIBRIUM	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
document_form	LOW PEAK 2015HIGH PEAK 2017	TRU E	FAL SE	FAL SE	FAL SE	TRU E	TRU E	3
experi_dataset	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
knowledg_reso urc	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
languag_social	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
system_measur	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
text_method	DECREASING	TRU	FAL	TRU	TRU	TRU	TRU	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	SE	E	E	E	E	
word_chang	LOW PEAK 2014HIGH PEAK 2015 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
engin_issu	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
identifi_us	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
determin_number	HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
normal_word	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
text_identifi	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	FAL SE	TRU E	TRU E	TRU E	4
world_congress	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
comparison_method	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
document_improv	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
precis_calcul	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
stem_document	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	FAL SE	TRU E	TRU E	4
centroid_cluster	LOW PEAK 2014HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
data_approach	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
indic_word	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
interest_user	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
punctuat_remov	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
set_featur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
twitter_faceboook	DECREASING	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
variou_techniqu	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
word_ad	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
accu_raci	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
algorithm_accuraci	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
algorithm_consist	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
algorithm_naiv	LOW PEAK 2014HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
collect_collect	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
compar_us	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
comparison_document	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	FAL SE	4
comparison_precis	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
describ_process	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
develop_develop	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
equal_length	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
featur_perform	EQUILIBRIUM	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
frequenc_corpu	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
http_lucen	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
keyword_queri	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
measur_estim	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
model_take	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
obtain_word	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
probabilist_clasifi	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
process_activ	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
score_comput	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
step_select	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
system_learn	LOW PEAK 2015HIGH PEAK 2017	TRU	TRU	FAL	TRU	TRU	TRU	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
		E	E	SE	E	E	E	
term_relev	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
word_structur	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
word_type	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
algorithm_classif	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
base_mean	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
clean_data	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
document_creat	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	FAL SE	TRU E	FAL SE	3
document_remov	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
extract_name	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
func_tion	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
issn_issn	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
matrix_term	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
meaning_infor m	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
method_detect	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
output_process	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
system_avail	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
system_detect	HIGH PEAK 2014	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
text_sourc	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
time_base	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
remov_step	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
parent_node	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
perform_obtain	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
word_lead	LOW PEAK 2015 HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
appear_text	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	FALSE SE	TRUE E	TRUE E	TRUE E	FALSE SE	TRUE E	4
cluster_repres	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
inform_servic	LOW PEAK 2015 HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	FALSE SE	TRUE E	5
predefin_class	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	FALSE SE	TRUE E	TRUE E	5
applic_inform	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FALSE SE	TRUE E	TRUE E	FALSE SE	TRUE E	TRUE E	4
becom_increasingli	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FALSE SE	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	5
classif_data	EQUILIBRIUM	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	FALSE SE	5
inform_social	LOW PEAK 2015 HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
lower_number	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	FALSE SE	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	5
techniqu_featur	LOW PEAK 2015 HIGH PEAK 2016	TRUE E	TRUE E	FALSE SE	TRUE E	TRUE E	TRUE E	5
affix_word	HIGH PEAK 2014	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
classif_arab	HIGH PEAK 2014	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
dataset_avail	HIGH PEAK 2014	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
dataset_creat	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
featur_semant	LOW PEAK 2016 HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
function_similar	EQUILIBRIUM	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
perform_step	LOW PEAK 2015 HIGH PEAK 2016	TRUE E	FALSE SE	TRUE E	TRUE E	TRUE E	FALSE SE	4
repres_singl	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
step_gener	LOW PEAK 2015 HIGH PEAK 2016	TRUE E	TRUE E	FALSE SE	TRUE E	TRUE E	TRUE E	5
time_number	HIGH PEAK 2014 LOW PEAK	TRUE	TRUE	TRUE	TRUE	FALSE	TRUE	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
	2015HIGH PEAK 2016	E	E	E	E	SE	E	
token_us	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
vector_number	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
approach_patter	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
contain_topic	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
content_type	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
degre_similar	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
form_inform	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
improv_us	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
inform_form	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
interest_patter	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
model_produc	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
present_text	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
score_precis	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
stem_exampl	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
text_appli	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	FAL SE	4
valu_chosen	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
automat_emot	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
base_perform	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
cluster_topic	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
contain_specif	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
data_describ	LOW PEAK 2016HIGH PEAK 2017	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
data_estim	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
data_user	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
electron_comm un	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
exist_techniqu	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
frequenc_text	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
languag_stem	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
method_topic	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
model_increas	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
object_base	LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
produc_cluster	LOW PEAK 2014HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
rela_tionship	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
signific_number	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
similar_semant	EQUILIBRIUM	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
system_creat	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
time_accuraci	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
topic_us	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
train_word	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
word_valu	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
semant_concep t	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
languag_form	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
stemmer_compar	LOW PEAK 2014HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
distribut_class	HIGH PEAK 2014 LOW PEAK	TRU	TRU	TRU	TRU	TRU	FAL	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
	2015HIGH PEAK 2016	E	E	E	E	E	SE	
binari_valu	EQUILIBRIUM	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
consid_number	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
document_ther efor	LOW PEAK 2014HIGH PEAK 2015	FAL SE	FAL SE	TRU E	TRU E	TRU E	TRU E	4
gener_train	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
higher_weight	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
method_presen t	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
word_preposit	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
approach_selec t	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
assign_cluster	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
cluster_compar	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
form_form	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
grow_rapidli	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
matrix_contain	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
method_seman t	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
term_identifi	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
text_present	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
topic_similar	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
vector_input	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
analysi_comput	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	FAL SE	4
analysi_proble m	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
approach_compar	LOW PEAK 2014HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
emerg_technolog	LOW PEAK 2015HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	FAL SE	TRU E	4
exist_algorithm	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
graph_model	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
luhn_automat	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
method_construct	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
order_measur	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
perform_fold	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
remov_nois	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
similar_approac h	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
system_refer	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
tool_provid	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
transact_patter n	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
analysi_knowle dg	LOW PEAK 2017	TRU E	TRU E	TRU E	FAL SE	FAL SE	TRU E	4
base_appli	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
base_rank	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
classifi_term	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
crucial_role	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
featur_learn	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
field_data	DECREASING	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
function_defin	EQUILIBRIUM	TRU E	FAL SE	TRU E	FAL SE	TRU E	TRU E	4
gener_architect ur	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
good_featur	HIGH PEAK 2014 LOW PEAK	TRU	TRU	TRU	TRU	TRU	TRU	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
	2015HIGH PEAK 2017	E	E	E	E	E	E	
lemmat_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
mathemat_scie nc	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
media_content	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
model_machin	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
morpho_syntac t	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
number_attribu t	DECREASING	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
number_concep t	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
perform_datase t	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
similar_group	EQUILIBRIUM	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
simpl_probabili st	HIGH PEAK 2014	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
solv_issu	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
split_text	DECREASING	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
step_find	LOW PEAK 2014HIGH PEAK 2015	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
stochast_gradie nt	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
text_step	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
third_type	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
type_system	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
cluster_corresp ond	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
compar_origin	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
sequenc_model	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
rule_defin	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
correspond_featur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
process_search	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
therefor_develop	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	FAL SE	TRU E	4
word_indic	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
catégori_us	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
classif_new	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
correspond_topic	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
dictionari_dictio nari	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
document_normal	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
engin_retriev	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
inquiri_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
remov_arab	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
requir_addit	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
step_token	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
us_normal	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
alphabet_charact	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
base_implement	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
base_pattern	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
base_probabl	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
case_text	LOW PEAK 2015HIGH PEAK 2016 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
charact_punctuat	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
engin_inform	DECREASING	TRU	TRU	TRU	TRU	FAL	FAL	4

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	E	E	E	SE	SE	
extract_phrase	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
initi_step	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
measur_qualiti	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
method_effect	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
model_calcul	LOW PEAK 2014HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
particular_case	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
rapid_develop	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
string_number	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
system_make	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
toulous_franc	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
us_resourc	DECREASING	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
valu_model	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
vector_length	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
word_porter	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
approach_foun d	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
call_term	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	FAL SE	4
classifi_decis	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
content_tweet	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
databas_comm un	EQUILIBRIUM	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
document_spec if	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
human_social	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
inform_analysi	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
linguist_volum	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	FAL SE	TRU E	TRU E	TRU E	4
method_case	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
model_thu	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
page_contain	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
partial_support	DECREASING	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
plai_crucial	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
problem_includ	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
scienc_softwar	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
step_approach	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
step_featur	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
studi_comput	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
system_capabl	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
system_project	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
techniqu_help	LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
techniqu_perfor m	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
text_twitter	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
time_exampl	DECREASING	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
tool_gener	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
us_preprocess	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
vector_contain	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
document_phra	LOW PEAK 2015HIGH PEAK 2016	TRU	TRU	TRU	TRU	TRU	TRU	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
se		E	E	E	E	E	E	
text_vector	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
algorithm_given	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
method_word	LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
problem_word	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
spend_time	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
state_model	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
combin_term	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
effici_search	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
enorm_amount	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
further_increas	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
model_addit	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
model_requir	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
select_topic	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
term_search	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
test_compar	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
addit_word	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
analysi_applic	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
approach_reli	LOW PEAK 2014HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
databas_search	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
elimin_stem	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
eval_uation	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
identifi_similar	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
knowledg_document	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
network_machin	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
split_data	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
steinbach_karypi	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
store_file	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
topic_exampl	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
user_data	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
valu_posit	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
accord_word	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
algorithm_determin	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
anger_fear	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
approach_consist	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
approach_outperform	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
candid_gener	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
choos_number	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
collect_period	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
compar_number	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
construct_graph	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
count_time	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
descrip_tion	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
design_algorith	LOW PEAK 2015HIGH PEAK 2017	TRU	TRU	FAL	TRU	TRU	TRU	5

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
m		E	E	SE	E	E	E	
document_view	EQUILIBRIUM	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
extract_textual	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	TRU E	5
featur_prepocess	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
filter_step	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
help_classifi	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
independ_given	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
knowledg_sourc	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
label_class	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
method_produc	EQUILIBRIUM	TRU E	FAL SE	TRU E	TRU E	TRU E	TRU E	5
overal_score	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
process_human	LOW PEAK 2014HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
step_construct	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
strength_weak	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
test_purpos	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
us_extern	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	FAL SE	TRU E	FAL SE	4
word_divid	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
word_system	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
topic_categori	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
consid_time	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
data_partit	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
exist_document	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
featur_name	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
iter_step	LOW PEAK 2014HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
label_base	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
media_platform	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
method_keyword	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
base_frequent	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
cate_gori	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
comparison_basel	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
comput_perfor	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
consid_case	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
dataset_metho	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
distribut_repres	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
introduc_concep	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
level_document	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
metric_text	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
queri_gener	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
support_grant	LOW PEAK 2014HIGH PEAK 2015	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
user_perform	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
variou_approac	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	FAL SE	TRU E	TRU E	TRU E	5
accuraci_number	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
affect_user	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
analysi_emot	DECREASING	TRU	TRU	TRU	TRU	TRU	TRU	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	E	E	E	E	E	
analysi_featur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
analysi_order	HIGH PEAK 2014 LOW PEAK 2017	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
averag_sentenc	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
categori_tweet	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
contain_singl	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
discoveri_databas	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
distanc_calcul	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
experi_featur	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
graph_structur	LOW PEAK 2014HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
increas_precis	LOW PEAK 2014HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
keyword_cluste	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
level_system	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
main_sourc	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	FAL SE	TRU E	5
neg_affect	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
network_data	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
order_base	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
process_construct	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
sampl_test	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
step_build	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
us_exampl	LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
user_give	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
vector_calcul	LOW PEAK 2014 HIGH PEAK 2016	TRU E	FAL SE	TRU E	TRU E	TRU E	FAL SE	4
word_retriev	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
written_java	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
ad_word	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
extern_sourc	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
featur_posit	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
overal_system	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
stem_languag	HIGH PEAK 2014 LOW PEAK 2016 HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
algorithm_consider	LOW PEAK 2015 HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
automat_creati on	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
cluster_unsuper vis	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
dataset_compar	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
describ_algorith m	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
effici_cluster	LOW PEAK 2014 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
full_word	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
model_human	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
punctuat_stop	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
rang_valu	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
remov_frequen t	LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
sampl_word	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
time_text	HIGH PEAK 2014 LOW PEAK 2015 HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
word_affect	HIGH PEAK 2014 LOW PEAK	TRU	TRU	TRU	TRU	TRU	TRU	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
	2015HIGH PEAK 2016	E	E	E	E	E	E	
algorithm.obtain	LOW PEAK 2015HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
approach_provid	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
calcul_step	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
difficult_langua	LOW PEAK 2014HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
document_arab	LOW PEAK 2016HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	FALSE SE	5
equat_calcul	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
extract_variou	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	FALSE SE	TRUE E	TRUE E	5
famili_member	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
index_base	LOW PEAK 2016HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
indic_cluster	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
inform_becom	LOW PEAK 2015HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
manual_extract	LOW PEAK 2016HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
metric_base	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
miller_wordnet	LOW PEAK 2015HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
perform_supervis	HIGH PEAK 2014	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
process_design	LOW PEAK 2014HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
process_part	LOW PEAK 2016HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	FALSE SE	5
score_method	LOW PEAK 2016HIGH PEAK 2017	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
stream_text	LOW PEAK 2015HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
system_conclus	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6
test_split	DECREASING	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	TRUE E	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
topic_cover	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
uniqu_featur	DECREASING	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
user_send	EQUILIBRIUM	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
predict_categor i	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	FAL SE	TRU E	TRU E	TRU E	TRU E	TRU E	5
annual_symposi um	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
model_respect	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
analysi_time	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
approach_deal	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
base_natur	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
collect_user	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
creation_literat ur	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
data_group	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
document_pars	LOW PEAK 2014HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
exampl_queri	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
normal_us	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
topic_refer	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
complet_text	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
context_process	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
correl_topic	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
data_chang	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
help_peopl	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
inform_thu	LOW PEAK 2015HIGH PEAK 2016	TRU	TRU	TRU	TRU	TRU	TRU	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
		E	E	E	E	E	E	
limit_word	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
method_exampl	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
mine_word	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
model_prove	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
model_singl	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
nois_data	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
perform_find	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
term_process	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
time_make	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
us_collect	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
us_determin	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
user_accord	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
valu_text	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
word_correl	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
mean_approach	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
current_version	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
martin_porter	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
obtain_relev	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
refer_mean	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
term_obtain	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
approach_disco v	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Cou nt
approach_estim	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
catégori_classif	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
classifi_built	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
classifi_simpl	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
data_initi	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
featur_input	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
function_deter min	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
improv_docume nt	LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
measur_emot	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
preprocess_tok en	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
problem_lack	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
process_comple t	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
provid_signific	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
select_group	HIGH PEAK 2014	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
system_stem	HIGH PEAK 2014 LOW PEAK 2016HIGH PEAK 2017	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
thousand_docu ment	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
train_remain	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
contain_user	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
email_address	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
account_order	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
accuraci_signific antli	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
base_lexic	HIGH PEAK 2014 LOW PEAK	TRU	TRU	TRU	TRU	TRU	TRU	6

Theme	Interpretation	Focus						
		201 3	201 4	201 5	201 6	201 7	201 8	Count
	2015HIGH PEAK 2016	E	E	E	E	E	E	
base_theori	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
becom_time	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
featur_task	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
limit_term	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
process_break	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
public_date	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
retriev_semant	LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
space_number	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	FAL SE	5
studi_analysi	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
symposium_document	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
tree_approach	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6
apach_core	HIGH PEAK 2014 LOW PEAK 2015HIGH PEAK 2016	TRU E	TRU E	TRU E	TRU E	TRU E	TRU E	6



