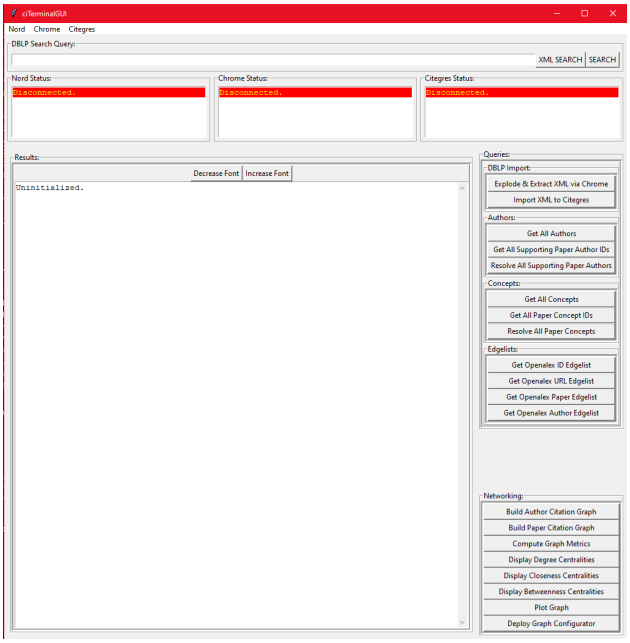
Cason Konzer

This brief report is to complement details of the project which may or may not be presented in class. Curious students are encouraged to ask questions, and explore the extensive source code. As a general note, this is still an in development application and not fully matured.

DATABASE CONNECTOR

The database used in this application is `Postgres`, and `Python` is used as the application language. It is thus the case that `psycopg2` is used as the database connector. The connector logic is stored in the `postility.py` module, which contains a plethora of commonly used statements. These are primarily of the type `CREATE`, `INSERT`, `UPDATE`, & `SELECT`. The functions are linked to a Graphical User Interface (GUI) in the `guitility.py` module. Displayed below is an image of the GUI:



The buttons which are primarily linked to the database connector fall under the `Queries` section, with some additionally under `Networking`. Details from `SQL` transactions are logged to `sys.stdout` using a `Logging Cursor`. The application handles database `COMMITS` and `ROLLBACKS` as required.

DATABASE CREATION

In this project we will create 6 databases (and additionally review the development database), retrieve some search results on their literature, and identify the top authors and papers from a graph based approach. In the following results we document the analysis of each database, which is topic specific.

Each database will require a `CREATE DATABASE` statement from the `SQL` console, and update to the `.ini` file referenced by the applications, followed by initialization, searching, and analysis within the application. It would without a doubt have been beneficial to further automate the process and link database creation to functionality within the GUI.

Initialization of the database starts by connecting to it in the GUI by using the dropdown menu `Citegres - Set Default DB`, and selecting the database which was created in the console. The `Results` field will inform you of the change in selection and be logged to `sys.stdout`. Following, you need to connect to the database by selecting `Citegres - Connect` in the menus. The last step is to create the table space required for the application in the database by selecting `Citegres - Implant Schema` in the menus. The code below is ran via the application on the connected database, logging will take place in `sys.stdout`:

```
DROP TABLE IF EXISTS papers_raw;
DROP TABLE IF EXISTS paper_concepts;
DROP TABLE IF EXISTS citations;
DROP TABLE IF EXISTS supports;
DROP TABLE IF EXISTS papers;
DROP TABLE IF EXISTS openalex;
DROP TABLE IF EXISTS venues;
DROP TABLE IF EXISTS types;
DROP TABLE IF EXISTS concepts;
DROP TABLE IF EXISTS publishers;
DROP TABLE IF EXISTS authors;
CREATE TABLE authors (id SERIAL, author TEXT UNIQUE NOT NULL, PRIMARY KEY(id));
CREATE TABLE publishers (id SERIAL, publisher TEXT UNIQUE NOT NULL, PRIMARY KEY(id));
CREATE TABLE concepts (id SERIAL, concept TEXT UNIQUE NOT NULL, PRIMARY KEY(id));
CREATE TABLE types (id SERIAL, ptype TEXT UNIQUE NOT NULL, PRIMARY KEY(id));
CREATE TABLE venues (id SERIAL, venue TEXT UNIQUE NOT NULL, PRIMARY KEY(id));
CREATE TABLE openalex (id SERIAL, openalex_url TEXT UNIQUE NOT NULL, PRIMARY KEY(id));
CREATE TABLE papers (id SERIAL, doi TEXT, title TEXT UNIQUE NOT NULL, pdate DATE, author INTEGER
REFERENCES authors(id) NOT NULL, publisher INTEGER REFERENCES publishers(id), ptype INTEGER
REFERENCES types(id), venue INTEGER REFERENCES venues(id), openalex INTEGER REFERENCES openalex(id),
PRIMARY KEY(id));
CREATE TABLE supports (paper INTEGER REFERENCES papers(id), author INTEGER REFERENCES authors(id),
PRIMARY KEY(paper, author));
CREATE TABLE citations (source INTEGER REFERENCES openalex(id), target INTEGER REFERENCES openalex(id),
PRIMARY KEY(source, target));
CREATE TABLE paper_concepts (paper INTEGER REFERENCES papers(id), concept INTEGER REFERENCES
concepts(id), PRIMARY KEY(paper, concept));
CREATE TABLE papers_raw (id SERIAL, doi TEXT, title TEXT, pdate DATE, author TEXT, author_id
INTEGER, publisher TEXT, publisher_id INTEGER, ptype TEXT, ptype_id INTEGER, venue TEXT, venue_id
INTEGER, openalex TEXT, openalex_id INTEGER, PRIMARY KEY(id));
```

At this point in time you can optionally enable VPN switching through the `Nord` menu. This is an experimental figure and requires the Nord VPN application, the code could of course be ported to a different VPN. It is additionally worth noting that if you wish to run this application locally, you must update the static paths set at the top of the `nordility`, `seleamility.py` and `postility.py` source code.

In order to start populating the databases enter your relevant queries into `DBLP Search Query` and conduct a `SEARCH`. A prerequisite is to enable the automated browser via `Chrome - Connect` in the menus. If the search seems to align with your topic, continue by conducting an `XML SEARCH` then an `Explode & Extract XML via Chrome`, note that this may take some time. What the automated browser does is iterate through each paper's DBLP page to extract additional metadata, primarily related to referencing APIs, which is not included in the XML. Lastly, run an `Import XML to Citegres` to populate the database with the search. A current limitation of the application is that it can only process up to the first 1,000 papers returned. The database is normalized on import, further details can be found in the `importXML` function of the `postility.py` module. You can additionally keep an eye on `sys.stdout` for details on the import.

RESULTS

Creation of the below databases follows the above process.

After the database is imported, the analysis is started by building citation graphs. We will build citation graphs based on paper to paper citations, and mine for the most relevant papers and authors using network centrality metrics. To create the author citation graph you will need to run `Build Author Citation Graph`, similarly run `Build Paper Citation Graph` for the paper citation graph. Acknowledgement of the build will be displayed in the `Results` window.

With the graph build, you can then compute the centrality metrics using the `Compute Graph Metrics`

button. Having computed the metrics you can display the centrality results using `Display Degree Centralities`, `Display Closeness Centralities` or `Display Betweenness Centralities`. The results will be returned in descending order, with the top of the list representing core authors and papers in the field. The idea behind this tool is to use it as a paper discovery tool, with future applications in citation network analysis, interactive network visualization, and bibliography management. Using the `Plot Graph` button, there is an additional functionality implemented to visualize the last built network. This is not particularly useful at this time, but may be interesting to the reader.

DATABASES

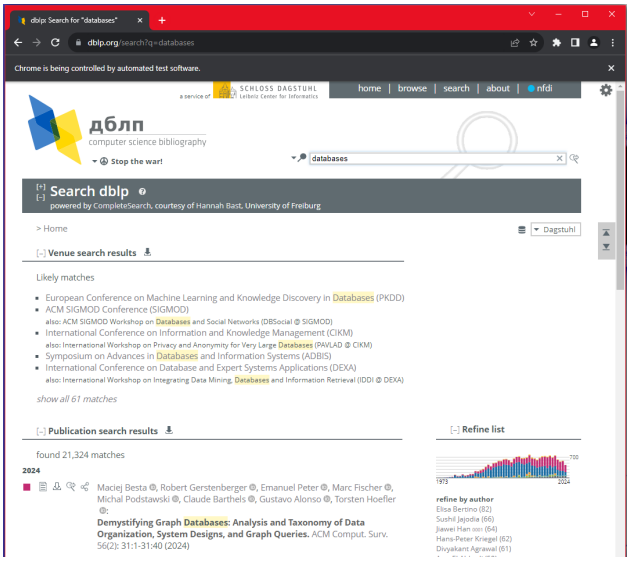
For the first database we will look into the topic of databases, ah ha :)

CODE

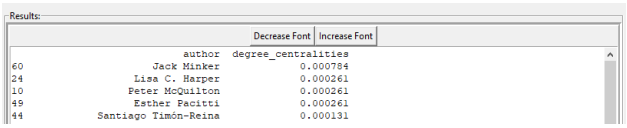
```
CREATE DATABASE databases;
```

DBLP QUERIES

`databases`: 21,324 results, top 1,000 imported.

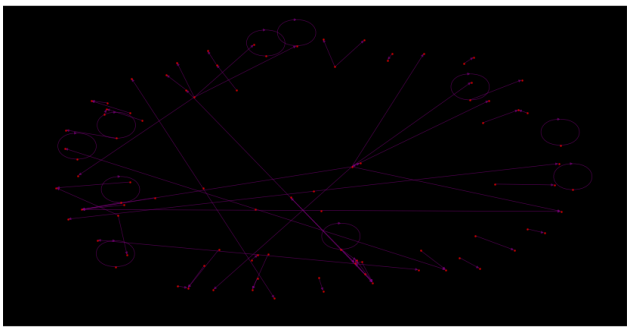


TOP AUTHORS BY DEGREE CENTRALITY



	author	degree_centralities
60	Jack Minker	0.000784
24	Lisa C. Harper	0.000261
10	Peter McQuilton	0.000261
49	Esther Pacitti	0.000261
44	Santiago Timón-Reina	0.000131

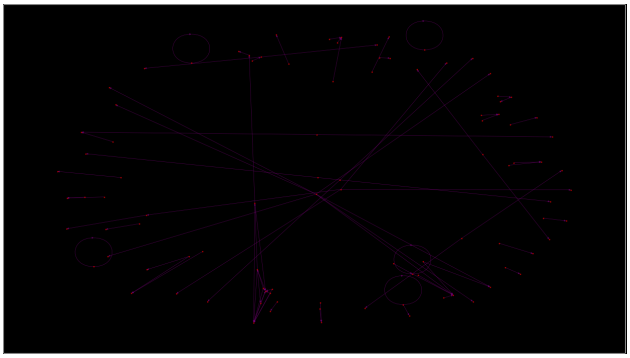
AUTHORS CITATION GRAPH



TOP PAPERS BY DEGREE CENTRALITY

paper	degree_centralities
Tripal v3: an ontology-based toolkit for construction of FAIR biological community databases.	0.000439
AgBioData consortium recommendations for sustainable genomics and genetics databases for agriculture.	0.000439
BioSharing: curated and crowd-sourced metadata standards, databases and data policies in the life sciences.	0.000329
Replica Consistency in Lazy Master Replicated Databases.	0.000219
COACT: a query interface language for collaborative databases.	0.000110
An overview of graph databases and their applications in the biomedical domain.	0.000110
Some Notes on Knowledge Assimilation in Deductive Databases.	0.000110

PAPERS CITATION GRAPH



GENERAL NOTES

Despite a relatively large import, the citation networks for this search were rather limited with only 82 citations.

NETWORKING

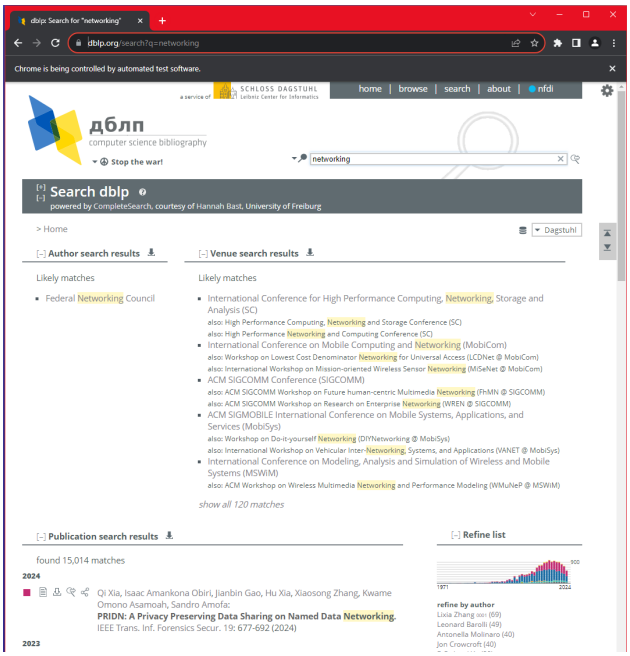
For the second database we will look into the topic of networking.

CODE

```
CREATE DATABASE networking;
```

DBLP QUERIES

`networking`: 15,014 results, top 1,000 imported.



TOP AUTHORS BY DEGREE CENTRALITY

```
Empty DataFrame
Columns: [author, degree_centralities]
Index: []
```

AUTHORS CITATION GRAPH

NA

TOP PAPERS BY DEGREE CENTRALITY

```
Empty DataFrame
Columns: [paper, degree_centralities]
Index: []
```

PAPERS CITATION GRAPH

NA

GENERAL NOTES

Networking was unable to resolve any citations in the network, seems ironic :)

ARCHITECTURE

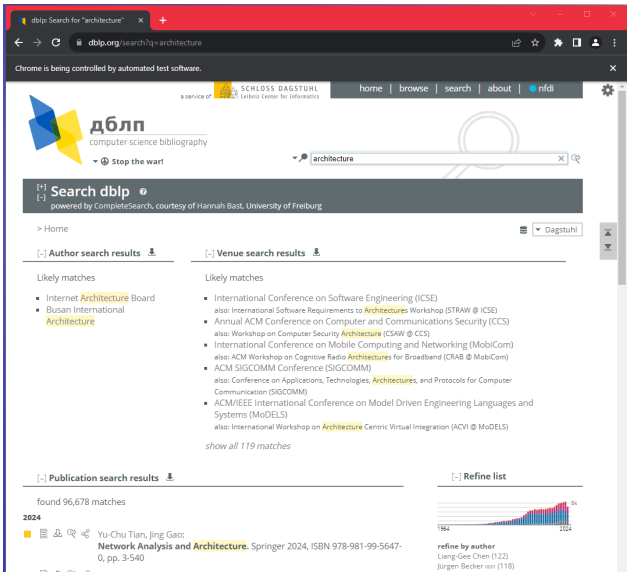
For the third database we will look into the topic of architecture.

CODE

```
CREATE DATABASE architecture;
```

DBLP QUERIES

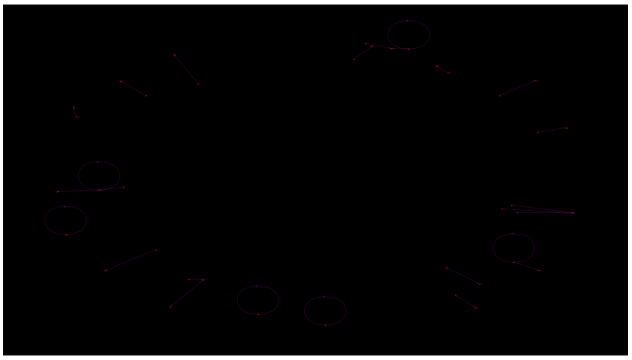
`architecture`: 96,678 results, top 1,000 imported.



TOP AUTHORS BY DEGREE CENTRALITY

	author	degree_centralities
5	Jan Löhe	0.000751
12	Leo Pruijt	0.000751
0	Abdul Razzaq	0.000000
28	Feng Chen	0.000000
22	T. H. Akila S. Siriweera	0.000000

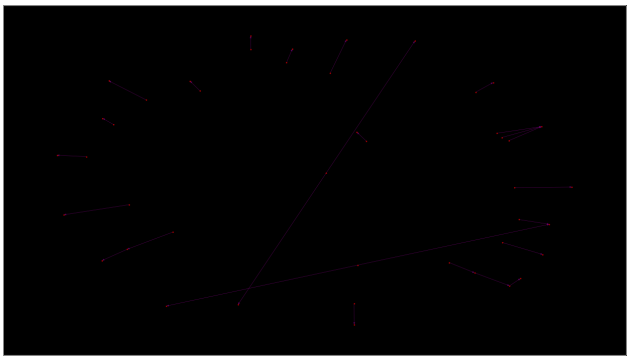
AUTHORS CITATION GRAPH



TOP PAPERS BY DEGREE CENTRALITY

	paper	degree_centralities
2	A metamodel for the support of semantically rich modular architectures in the context of static architecture compliance checking.	0.001107
3	Architecture Compliance Checking of Semantically Rich Modular Architectures: A Comparative Study of Tool Support.	0.001107
5	Overcoming implementation challenges in enterprise architecture management: a design theory for architecture-driven IT Management (ADRIMA).	0.000564
0	A Pragmatic Method for Assessing Systems Architectures During the Architecture Generation Process with a Focus on Repurposing Business Software to Systems Engineering.	0.000000
14	Cross-layer Enterprise Architecture Evaluation: An Approach to Improve the Evaluation of TO-BE Enterprise Architecture.	0.000000
24	Enterprise Architecture beyond the Enterprise - Extended Enterprise Architecture Revisited.	0.000000

PAPERS CITATION GRAPH



GENERAL NOTES

Architecture resulted in a rather low citation count of 26.

SOCIAL COMPUTING

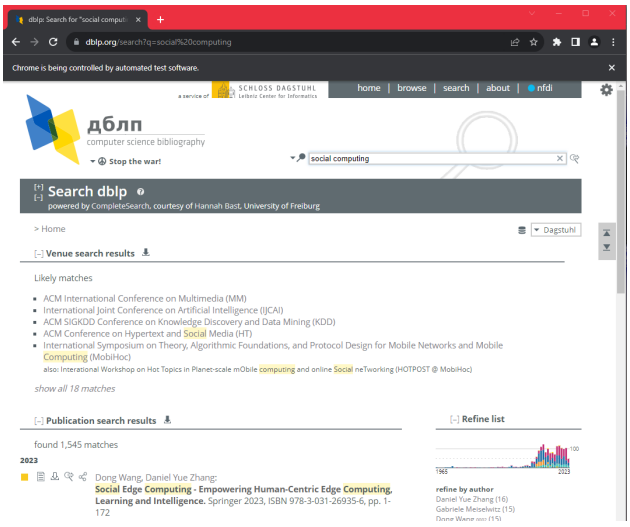
For the fourth database we will look into the topic of social computing.

CODE

```
CREATE DATABASE social_computing;
```

DBLP QUERIES

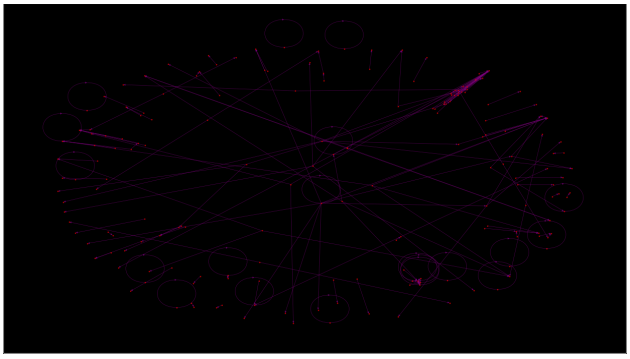
`social computing`: 1,545 results, top 1,000 imported.



TOP AUTHORS BY DEGREE CENTRALITY

author	degree_centralities
Nazish Zaman Khan	0.000364
Daniel Zhang 0001	0.000334
Xiaokang Wang 0001	0.000228
Michael Goldweber	0.000152
Amy Isvik	0.000121
Pablo Chamoso	0.000121
Daniel Yue Zhang	0.000121
Fei Hao 0001	0.000091
Abdullayev Vugar Hacimahmud	0.000076
Ming Yang 0032	0.000061
Weishan Zhang	0.000061
Abdullah Khanfor	0.000061
Sanjay Kumar	0.000061
Joon Sung Park	0.000030
Ricardo S. Alonso	0.000030
Katie Shilton	0.000030
Shuhong Chen	0.000030
Javier Bajo	0.000030
Junbin Liang	0.000030
Mirela Riveni	0.000030
Wei Zhang 0140	0.000030
Tao Wang	0.000030
Aziz Mohaisen	0.000030

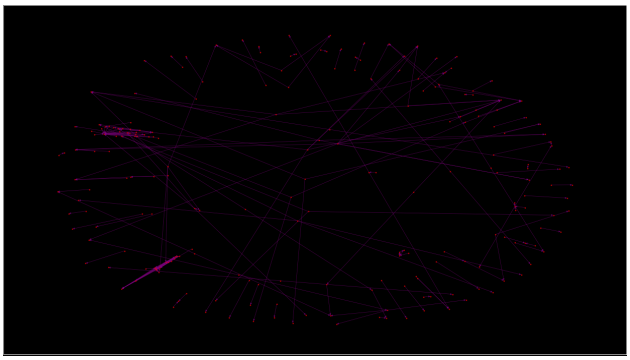
AUTHORS CITATION GRAPH



TOP PAPERS BY DEGREE CENTRALITY

paper	degree_centralities
When Social Sensing Meets Edge Computing: Vision and Challenges.	0.000320
HeteroEdge: taming the heterogeneity of edge computing system in social sensing.	0.000214
Is computing for social good the solution to closing the gender gap in computer science?	0.000192
An Integrated Top-down and Bottom-up Task Allocation Approach in Social Sensing based Edge Computing Systems.	0.000171
When social computing meets soft computing: opportunities and insights.	0.000128
2L-MC3: A Two-Layer Multi-Community-Cloud/Cloudlet Social Collaborative Paradigm for Mobile Edge Computing.	0.000085
Social computing in currency exchange.	0.000085
Enhancing the social issues components in our computing curriculum: computing for the social good.	0.000085
Taking the measure of digital giants: Amazon and the Social Welfare Computing research agenda.	0.000064
Moral cyber-social computing for state and university.	0.000064
Privacy-Aware Edge Computing in Social Sensing Applications Using Ring Signatures.	0.000043
Social Welfare Computing and the management and regulation of new online business models.	0.000043
Trustworthy Distributed Computing on Social Networks.	0.000043
Guest Editorial: Special Issue on Hybrid Human-Artificial Intelligence for Social Computing.	0.000043
HDER: modified degree with exclusion ratio algorithm for influence maximisation in social networks.	0.000043
Computational Resource Allocation for Edge Computing in Social Internet-of-Things.	0.000043
A Real-Time and Non-Cooperative Task Allocation Framework for Social Sensing Applications in Edge Computing Systems.	0.000022
A Multi-Objective Task Scheduling Method for Fog Computing in Cyber-Physical-Social Services.	0.000021
A Multi-Order Distributed HOSVD with Its Incremental Computing for Big Services in Cyber-Physical-Social Systems.	0.000021
Collaborative learning via social computing.	0.000021
Cluster-group based trusted computing for mobile social networks using implicit social behavioral graph.	0.000021
Application of provenance in social computing: A case study.	0.000021
Mobile Sensing Agents for Social Computing Environments.	0.000021
How to see values in social computing: methods for studying values dimensions.	0.000021

PAPERS CITATION GRAPH



GENERAL NOTES

Social computing showed promissing results when comparing to the first, successfully building a network of 231 citations.

INFORMATICS

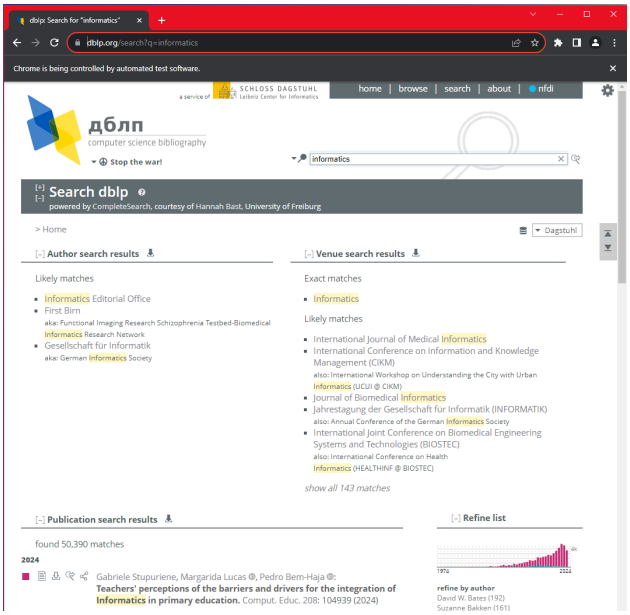
For the fifth database we will look into the topic of informatics.

CODE

```
CREATE DATABASE informatics;
```

DBLP QUERIES

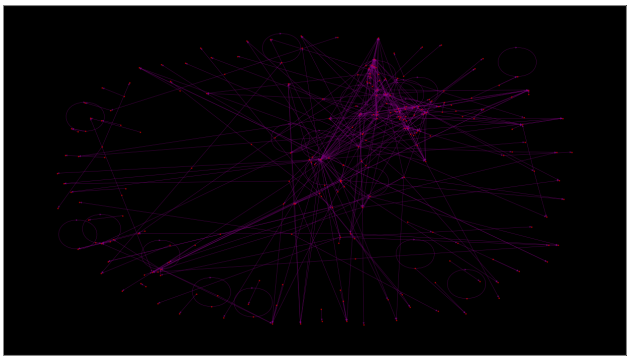
`informatics`: 50,390 results, top 1,000 imported.



TOP AUTHORS BY DEGREE CENTRALITY

	author	degree_centralities
8	Peter J. Embí	0.012649
1	Suzanne Bakken	0.012268
16	Casimir A. Kulikowski	0.010202
71	Michael G. Kahn	0.006845
57	Shan He	0.005989
42	William R. Hersh	0.004098
32	Charles P. Friedman	0.004086
24	Lucila Ohno-Machado	0.003713
6	Jen Bichel-Findlay	0.003502
44	Saif S. Khairat	0.003267
22	Tiffany C. Veinot	0.003239
7	Philip R. O. Payne	0.002756
40	Shawn N. Murphy	0.002610
153	Enrico W. Coiera	0.002503
19	Annette L. Valenta	0.002393
70	William Hsu	0.002122
26	Rahul Banerjee	0.001985
48	Rupa Valdez	0.001883
41	Reinhold Haux	0.001824
53	Dehua Hu	0.001332
132	Susan H. Fenton	0.001314
37	Rachel L. Richesson	0.001269
25	Kim M. Unertl	0.001244
154	Ellen Kim	0.001001
178	Chiehwen Ed Hsu	0.000845
45	Manal Almalki	0.000807
102	Elmer V. Bernstam	0.000792
62	Julia Kampov-Polevoi	0.000758
3	Cynthia S. Gadd	0.000715
108	Tiffani J. Bright	0.000633
110	Ashley C. Griffin	0.000560
9	Thomas George Kannampallil	0.000536
73	Hyeoneui Kim	0.000518
151	Jodyn Platt	0.000460
51	Raniah Aldekhyyel	0.000441
14	Reed M. Gardner	0.000433
10	Vimla L. Patel	0.000429
31	Qi Rong Huang	0.000405
204	Jennifer S. Singer	0.000375
61	Gerry Nesbitt	0.000375
49	Jenna L. Marquard	0.000346
167	Carolynn L. Smith	0.000304
17	Charles Safran	0.000303
96	Sheena Desai	0.000292

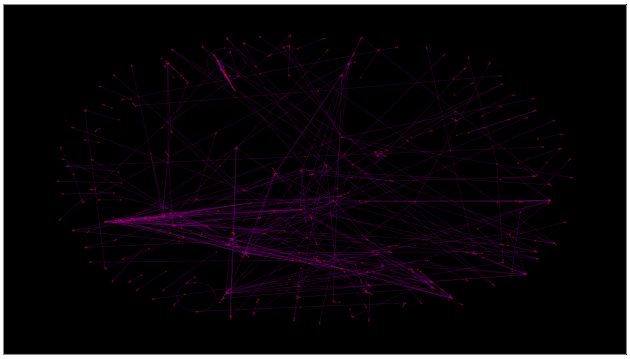
AUTHORS CITATION GRAPH



TOP PAPERS BY DEGREE CENTRALITY

paper	degree_centralities
AMIA Board white paper: definition of biomedical informatics and specification of core competencies for graduate education in the discipline.	0.001552
A stimulus to define informatics and health information technology.	0.000724
Recommendations of the International Medical Informatics Association (IMIA) on Education in Biomedical and Health Informatics: Second Revision.	0.000700
Domains, tasks, and knowledge for health informatics practice: results of a practice analysis.	0.000700
Health informatics and health equity: improving our reach and impact.	0.000666
AMIA Board White Paper: AMIA 2017 core competencies for applied health informatics education at the master's degree level.	0.000614
An overview of medical informatics education in China.	0.000475
Medical informatics: Past, present, future.	0.000420
What informatics is and isn't.	0.000405
Foundational domains and competencies for baccalaureate health informatics education.	0.000338
Transforming consumer health informatics through a patient work framework: connecting patients to context.	0.000321
Clinical research informatics: a conceptual perspective.	0.000317
AMIA Board White Paper: Core Content for the Subspecialty of Clinical Informatics.	0.000285
Focusing on informatics education.	0.000266
A multi-perspective approach to developing the Saudi Health Informatics Competency Framework.	0.000256
Biomedical imaging informatics in the era of precision medicine: progress, challenges, and opportunities.	0.000256
Gender representation in U.S. biomedical informatics leadership and recognition.	0.000250
Good intentions are not enough: how informatics interventions can worsen inequality.	0.000249
Domains, tasks, and knowledge for clinical informatics subspecialty practice: results of a practice analysis.	0.000236
Core informatics competencies for clinical and translational scientists: what do our customers and collaborators need to know?	0.000231
A curricula-based comparison of biomedical and health informatics programs in the USA.	0.000208
What is biomedical informatics?	0.000205
Informatics is a critical strategy in combating the COVID-19 pandemic.	0.000184
Making the case for workforce diversity in biomedical informatics to help achieve equity-centered care: a look at the AMIA First Look Program.	0.000184
Clinical informatics subspecialists: characterizing a novel evolving workforce.	0.000168
Medical student awareness of and interest in clinical informatics.	0.000164
AMIA Board White Paper: Program Requirements for Fellowship Education in the Subspecialty of Clinical Informatics.	0.000154
Creating advanced health informatics certification.	0.000150
Commercial off-the-shelf consumer health informatics interventions: recommendations for their design, evaluation and redesign.	0.000143
Cognitive informatics in biomedicine and healthcare.	0.000123
Understanding public health informatics competencies for mid-tier public health practitioners - a Web-based survey.	0.000123
Competencies for graduate curricula in health, medical and biomedical informatics: a framework.	0.000116
Survey of clinical informatics fellows graduating 2016-2024: experiences before and during fellowship.	0.000113
Informatics-enabled citizen science to advance health equity.	0.000113
What it means to be a woman in the field of biomedical informatics: exploring the lived experiences of women managers in the kingdom of Saudi Arabia.	0.000106
Special issue on cognitive informatics methods for interactive clinical systems.	0.000102
A domain analysis model for eIRB systems: Addressing the weak link in clinical research informatics.	0.000102

PAPERS CITATION GRAPH



GENERAL NOTES

Informatics was the best single search network created for the report, hosting 498 citations.

ENGINEERING

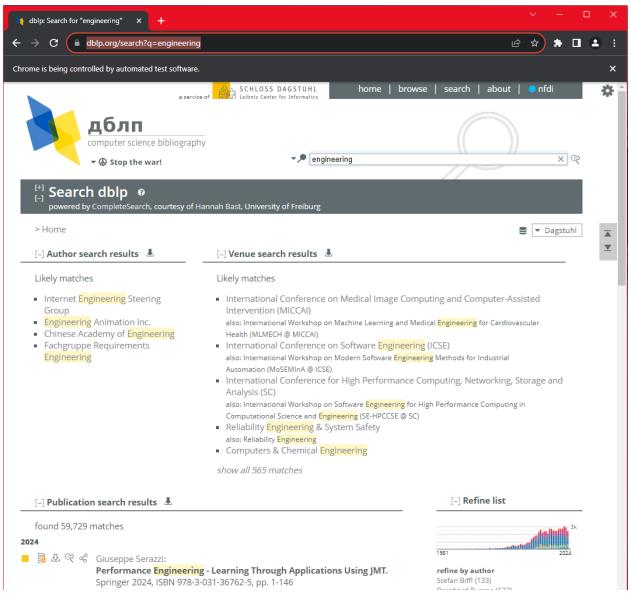
For the last database we will look into the topic of engineering.

CODE

```
CREATE DATABASE engineering;
```

DBLP QUERIES

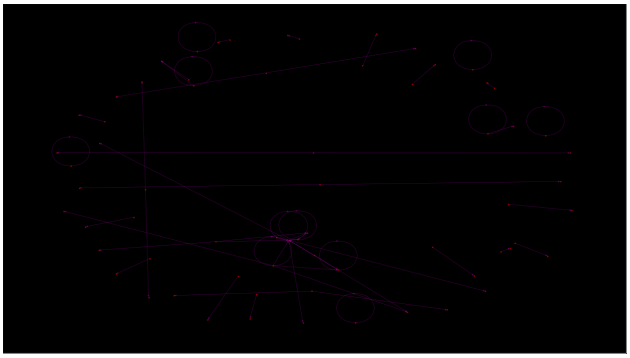
`engineering`: 59,729 results, top 1,000 imported.



TOP AUTHORS BY DEGREE CENTRALITY

author	degree_centralities
Stefan Biffl	0.008858
Dietmar Winkler 0001	0.001399
Arndt Lüder	0.001399
Marta Sabou	0.001399
Boutheina Gherib	0.000000
Rogério de Lemos	0.000000
Danny Weyns	0.000000
Michael E. Auer	0.000000
Brit-Maren Block	0.000000
Youcef Baghdadi	0.000000
Bobbi Young	0.000000
Len Wozniak	0.000000
Diana Adela Martin	0.000000
Lukas Kathrein	0.000000
Iván A. García	0.000000
Kendra M. L. Cooper	0.000000
Yen-Lin Han	0.000000
Tomás Bures	0.000000
Balamuralithara Balakrishnan	0.000000

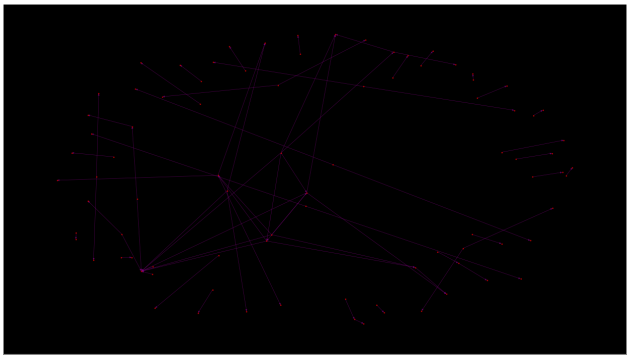
AUTHORS CITATION GRAPH



TOP PAPERS BY DEGREE CENTRALITY

paper	degree_centralities
Efficient Engineering Data Exchange in Multi-disciplinary Systems Engineering.	0.001642
Engineering Data Logistics for Agile Automation Systems Engineering.	0.001368
Paving Pathways for Digitalization in Engineering: Common Concepts in Engineering Chains.	0.000479
Support for engineering chain migration towards multi-diciplinary engineering chains.	0.000205
Risk and Engineering Knowledge Integration in Cyber-physical Production Systems Engineering.	0.000137
Efficient and Flexible Test Automation in Production Systems Engineering.	0.000137
Which Security Requirements Engineering Methodology Should I Choose?: Towards a Requirements Engineering-based Evaluation Approach.	0.000137
Multi-Disciplinary Engineering for Industrie 4.0: Semantic Challenges and Needs.	0.000137
A Multi-level Review of Engineering Ethics Education: Towards a Socio-technical Orientation of Engineering Education for Ethics.	0.000000
Information Flow Through Stages of Complex Engineering Design Projects: A Dynamic Network Analysis Approach.	0.000000
Dynamism in Complex Engineering: Explaining Uncertainty Growth Through Uncertainty Masking.	0.000000
Engineering the smarts: An illustration of the disconnect between control engineering and AI.	0.000000
Data-driven Aspects of Engineering The Use of Operational Data in SoS Engineering: Chances and Challenges.	0.000000
Perspectives on data science for software engineering.	0.000000
The Human Side of Engineering	0.000000
Data Science and Empirical Software Engineering.	0.000000
Conclusion and Outlook on Security and Quality of Complex Cyber-Physical Systems Engineering.	0.000000

PAPERS CITATION GRAPH



GENERAL NOTES

The network for engineering was additionally rather small with only 68 citations.

ECHO CHAMBERS

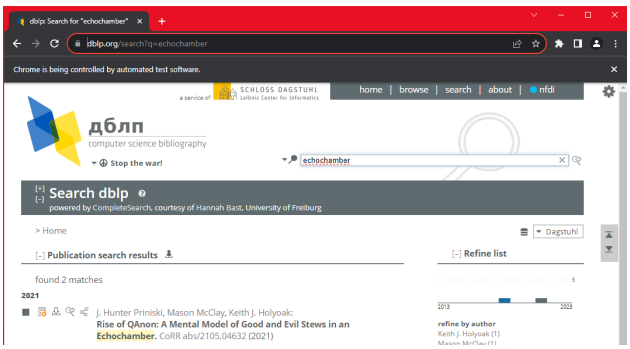
My initial development took place on the study of echo chambers.

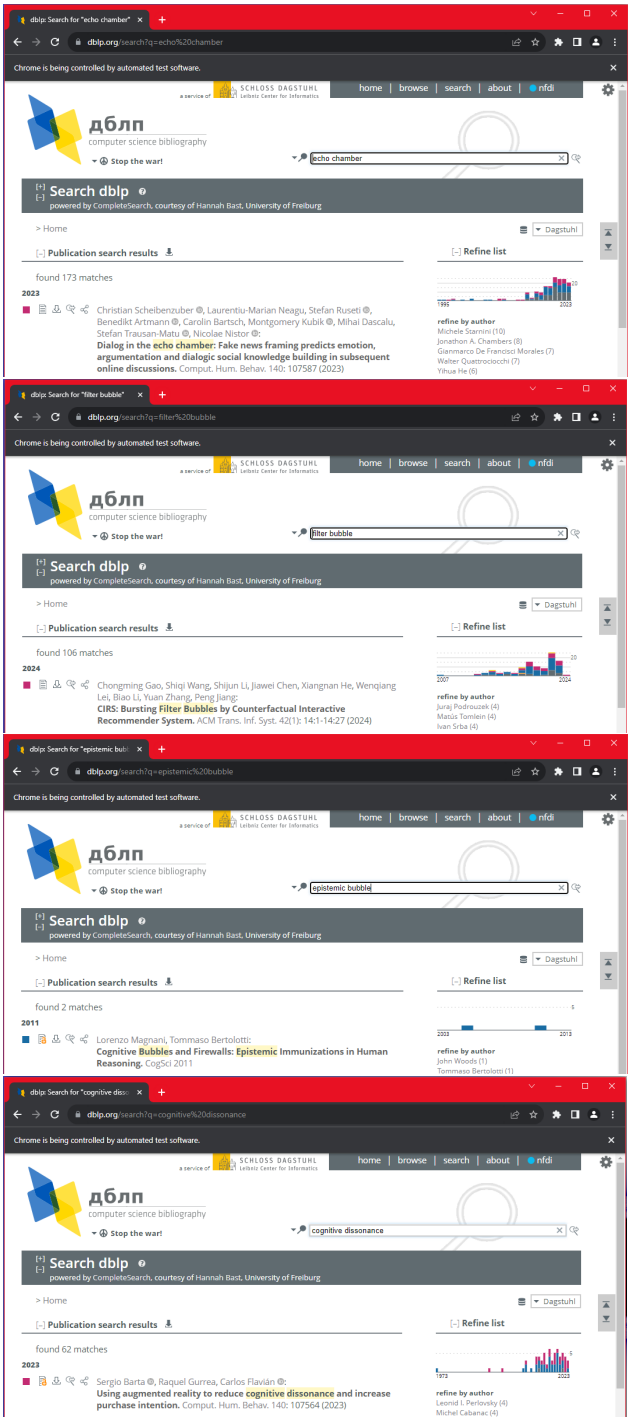
CODE

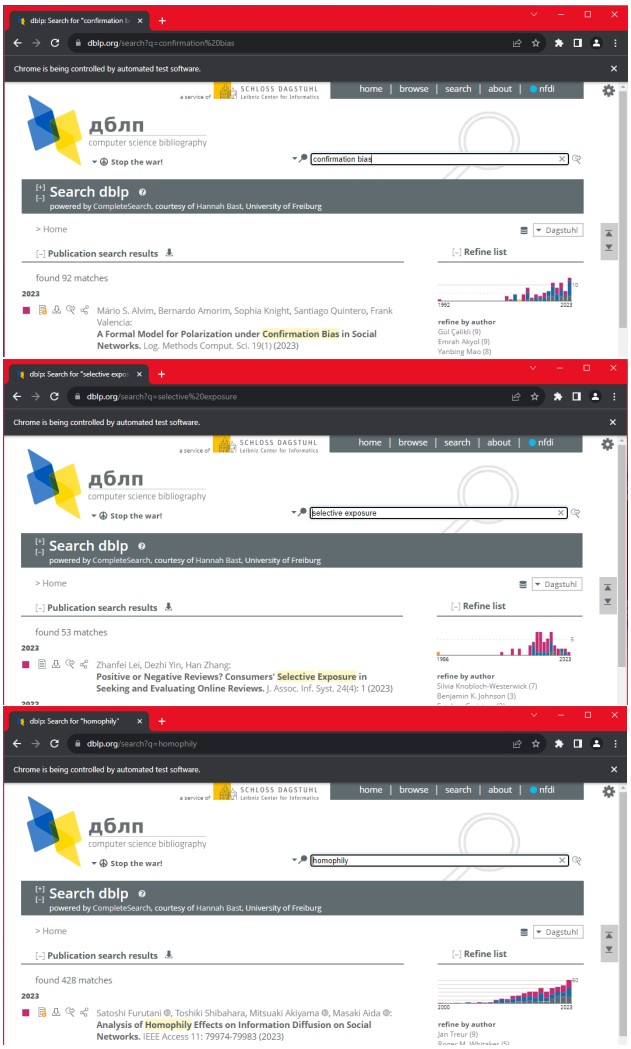
```
CREATE DATABASE CiteGres;
```

DBLP QUERIES

`echochamber`: 2 results, all imported. `echo chamber`: 173 results, all imported. `filter bubble`: 106 results, all imported. `epistemic bubble`: 2 results, all imported. `cognitive dissonance`: 62 results, all imported. `confirmation bias`: 92 results, all imported. `selective exposure`: 53 results, all imported. `homophily`: 428 results, all imported.




dblp: Search for "echo chamber"
dblp.org/search?q=echo%20chamber
Chrome is being controlled by automated test software.
home | browse | search | about | nfdi
дблп
computer science bibliography
Stop the war!
echo chamber
Search dblp
powered by CompleteSearch, courtesy of Hannah Bast, University of Freiburg
> Home
Dagstuhl
Publication search results
found 173 matches
2023
Christian Scheibenzuber, Laurentiu-Marian Neagu, Stefan Ruseti, Benedikt Artmann, Carolin Bartsch, Montgomery Kubik, Mihai Dascalu, Stefan Trausan-Matu, Nicolae Nistor:
Dialog in the echo chamber: Fake news framing predicts emotion, argumentation and dialogic social knowledge building in subsequent online discussions. Comput. Hum. Behav. 140: 107587 (2023)
Refine list
refine by author
Michele Starnini (10)
Jonathon A. Chambers (8)
Gianmarco De Francisci Morales (7)
Walter Quattrociocchi (7)
Yinua He (6)
dblp: Search for "filter bubble"
dblp.org/search?q=filter%20bubble
found 106 matches
2024
Chongming Gao, Shiqi Wang, Shijun Li, Jiawei Chen, Xiangnan He, Wenqiang Lei, Biao Li, Yuan Zhang, Peng Jiang:
CIRS: Bursting Filter Bubbles by Counterfactual Interactive Recommender System. ACM Trans. Inf. Syst. 42(1): 14:1-14:27 (2024)
refine by author
Juraj Podroužek (4)
Matúš Tomlein (4)
Ivan Srba (4)
dblp: Search for "epistemic bubble"
dblp.org/search?q=epistemic%20bubble
epistemic bubble
found 2 matches
2011
Lorenzo Magnani, Tommaso Bertolotti:
Cognitive Bubbles and Firewalls: Epistemic Immunizations in Human Reasoning. CogSci 2011
refine by author
John Woods (1)
Tommaso Bertolotti (1)
dblp: Search for "cognitive dissonance"
dblp.org/search?q=cognitive%20dissonance
cognitive dissonance
found 62 matches
2023
Sergio Barta, Raquel Gurrea, Carlos Flavián:
Using augmented reality to reduce cognitive dissonance and increase purchase intention. Comput. Hum. Behav. 140: 107564 (2023)
refine by author
Leonid I. Perlovsky (4)
Michel Cabanac (4)


dblp Search for "confirmation bias"
dblp.org/search?q=confirmation%20bias
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confirmation bias
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powered by CompleteSearch, courtesy of Hannah Bast, University of Freiburg
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Publication search results
Refine list
found 92 matches
2023
Mário S. Alvim, Bernardo Amorim, Sophia Knight, Santiago Quintero, Frank Valencia:
A Formal Model for Polarization under Confirmation Bias in Social Networks. Log. Methods Comput. Sci. 19(1) (2023)
refine by author
Gül Çalikli (9)
Emrah Akyol (9)
Yanbing Mao (8)
dblp Search for "selective exposure"
dblp.org/search?q=selective%20exposure
Chrome is being controlled by automated test software.
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selective exposure
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powered by CompleteSearch, courtesy of Hannah Bast, University of Freiburg
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Publication search results
Refine list
found 53 matches
2023
Zhanfei Lei, Dezhi Yin, Han Zhang:
Positive or Negative Reviews? Consumers' Selective Exposure in Seeking and Evaluating Online Reviews. J. Assoc. Inf. Syst. 24(4): 1 (2023)
refine by author
Silvia Knobloch-Westerwick (7)
Benjamin K. Johnson (3)
dblp Search for "homophily"
dblp.org/search?q=homophily
Chrome is being controlled by automated test software.
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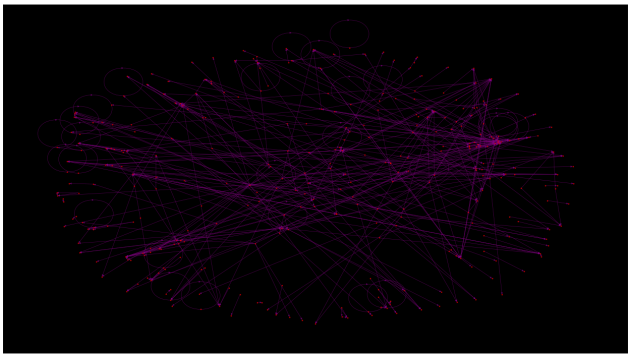
Stop the war!
homophily
Search dblp
powered by CompleteSearch, courtesy of Hannah Bast, University of Freiburg
> Home
Dagstuhl
Publication search results
Refine list
found 428 matches
2023
Satoshi Furutani, Toshiki Shibahara, Mitsuaki Akiyama, Masaki Aida:
Analysis of Homophily Effects on Information Diffusion on Social Networks. IEEE Access 11: 79974-79983 (2023)
refine by author
Jan Treur (9)

TOP AUTHORS BY DEGREE CENTRALITY

author	degree_centralities
Mike Thelwall	0.000687
Silvia Knobloch-Westerwick	0.000458
Halil Bisgin	0.000371
Matteo Cinelli	0.000367
Engin Bozdag	0.000357
Simpson Zhang	0.000334
Sanja Scepanovic	0.000311
Y. Connie Yuan	0.000293
Qingzi Vera Liao	0.000252
Munmun De Choudhury	0.000252
Kiran Garimella	0.000240
Pranav Dandekar	0.000229
R. Kelly Garrett	0.000209
Giacomo Villa	0.000192
Andrea De Salve	0.000188
David Laniado	0.000179
Gabriel Machado Lunardi	0.000151
Sofia Dokuka	0.000146
Uthsav Chitra	0.000146
Kuntal Dey	0.000137
Alireza Amrollahi	0.000133
Tim Donkers	0.000127
Sayooran Nagulendra	0.000119
Per Block	0.000110
Quentin Grossetti	0.000106
Kibae Kim	0.000101
Yingqiang Ge	0.000101
R. Sudhesh Solomon	0.000096

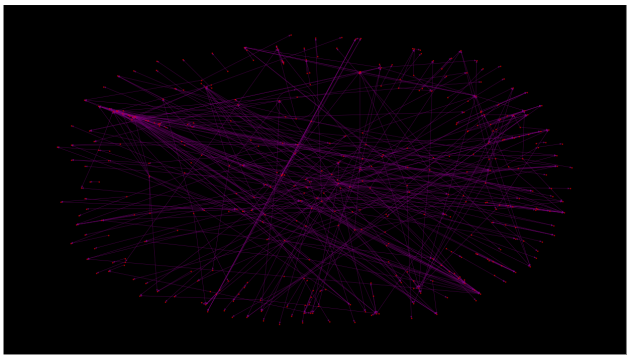
AUTHORS CITATION GRAPH



TOP PAPERS BY DEGREE CENTRALITY

paper	degree_centralities
Homophily in MySpace.	0.000488
The echo chamber effect on social media.	0.000270
Breaking the filter bubble: democracy and design.	0.000265
From Acquaintances to Friends: Homophily and Learning in Networks.	0.000254
Tie Formation on Twitter: Homophily and Structure of Egocentric Networks.	0.000250
A study of homophily on social media.	0.000231
Semantic homophily in online communication: Evidence from Twitter.	0.000224
Homophily of Network Ties and Bonding and Bridging Social Capital in Computer-Mediated Distributed Teams.	0.000204
Political Discourse on Social Media: Echo Chambers, Gatekeepers, and the Price of Bipartisanship.	0.000195
Echo chambers online?: Politically motivated selective exposure among Internet news users.	0.000155
Discovering Homophily in Online Social Networks.	0.000142
A Conceptual Tool to Eliminate Filter Bubbles in Social Networks.	0.000135
Confirmation Bias in Online Searches: Impacts of Selective Exposure Before an Election on Political Attitude Strength and Shifts.	0.000132
Gender homophily in online dyadic and triadic relationships.	0.000129
Preelection Selective Exposure.	0.000118
Can you hear me now?: mitigating the echo chamber effect by source position indicators.	0.000111
Beyond the filter bubble: interactive effects of perceived threat and topic involvement on selective exposure to information.	0.000108
Analyzing the Impact of Filter Bubbles on Social Network Polarization.	0.000105
Assessing Topical Homophily on Twitter.	0.000099
What Are Filter Bubbles Really? A Review of the Conceptual and Empirical Work.	0.000099
Effect of homophily on network formation.	0.000092
Echo chamber detection and analysis.	0.000086
The Dual Echo Chamber: Modeling Social Media Polarization for Interventional Recommending.	0.000077
The dark side of the boon? Credibility, selective exposure and the proliferation of online sources of political information.	0.000075
Serendipity by Design? How to Turn from Diversity Exposure to Diversity Experience to Face Filter Bubbles in Social Media.	0.000073
Understanding the Psycho-Sociological Facets of Homophily in Social Network Communities.	0.000069
Hashtag homophily in twitter network: Examining a controversial cause-related marketing campaign.	0.000066
Expert voices in echo chambers: effects of source expertise indicators on exposure to diverse opinions.	0.000063
Distance matters: Exploring proximity and homophily in virtual world networks.	0.000059
I Want to Break Free! Recommending friends from Outside the Echo Chamber.	0.000057
Echo Chambers vs Opinion Crossroads in News Consumption on Social Media.	0.000053
Multidimensional homophily in friendship networks.	0.000053

PAPERS CITATION GRAPH



GENERAL NOTES

This was by far the most fruitful citation network with 593 unique citations.

CONCLUSION

As we can see for the project results, it is not always the case that we are able to build adequate citation networks. To truly use this tool to effectively identify the most prominent articles and researchers for a topic, a few expansions are needed. First, queries need to be processed deeper than the most recent 1000 papers. This is surely the case in prominent fields or when searching general topics that publish over 1000 papers yearly. Enabling such a feature would not be too far of a stretch from the current work. It is my assumption that this is part of the reason for observable poor results. Second, after building a database it would make sense to expand it by conducting author and concept based searches. Already the information is available and would enable an incremental update based approach. In the end, the target of the application is to identify core publishers and papers in specific fields, so such an approach would be expected to add noise. The current networking metrics are limited, and adding additional ones may be of interest. In a similar manner, it may make sense to query across other databases such as Google Scholar. Concluding, I am quite happy with this work and in the implementation learned a lot about applied database applications and built extensive skills in the creation of graphical user interfaces.

REFERENCES

listed below is a set of web sites which were relevant to the development of this application project and may be useful to the reader:

- `https://www.psycopg.org/docs/#`
- `https://www.postgresql.org/docs/`
- `https://docs.python.org/3/library/tkinter.html`
- `https://tkdocs.com/pyref/index.html`
- `https://networkx.org/`
- `https://matplotlib.org/`
- `https://www.crummy.com/software/BeautifulSoup/bs4/doc/`
- `https://requests.readthedocs.io/en/latest/`
- `https://www.selenium.dev/documentation/`
- `https://openalex.org/`
- `https://dblp.org/`
- `https://opencitations.net/index/api/v1/`
- `https://www.semanticscholar.org/product/api`
- `https://github.com/CrossRef/rest-api-doc`