```
f0007:


W_Fdic:
the              : 82      and              : 55      of               : 39      to               : 34
in               : 28      social           : 26      faceted          : 23      is               : 21
for              : 20      search           : 16      navigation       : 14      on               : 14
semantic         : 13      classifications  : 13      information      : 13      -lsb-            : 12
space            : 12      semantics        : 12      are              : 12      -rsb-            : 12
networking       : 12      -lrb-            : 12      -rrb-            : 12      web              : 11
can              : 10      that             : 10      interaction      : 9       interactive      : 9
networks         : 9       different        : 9       with             : 9       network          : 8
model            : 8       interactions     : 8       resources        : 7       from             : 7
it               : 7       facets           : 7       this             : 6       research         : 6
humans           : 6       various          : 6       basic            : 6       an               : 6
link             : 6       process          : 5       help             : 5       paper            : 5
through          : 5       multi-dimensional: 5       articles         : 5       theory           : 5
sentences        : 5       evolution        : 5       between          : 5       range            : 5
titled           : 4       use              : 4       principles       : 4       society          : 4
issue            : 4       efficient        : 4       set              : 4       key              : 4
or               : 4       metric           : 4       cyberspace       : 4       lens             : 4
understanding    : 3       classification   : 3       intelligent      : 3       reflect          : 3
applications     : 3       fundamental      : 3       top-k            : 3       by               : 3
adaptive         : 3       language         : 3       relations        : 3       11               : 3
effective        : 3       multiple         : 3       services         : 3       based            : 3
knowledge        : 3       reading          : 3       been             : 3       generating       : 3
understand       : 3       will             : 3       development      : 3       has              : 3
world            : 3       people           : 3       be               : 3       automatically    : 3
appropriate      : 3       devices          : 3       as               : 3       node             : 3
users            : 3       models           : 3       important        : 3       query            : 2
nodes            : 2       new              : 2       method           : 2       evolving         : 2
explore          : 2       making           : 2       manage           : 2       browse           : 2
high             : 2       how              : 2       such             : 2       efficiently      : 2
natural          : 2       words            : 2       its              : 2       not              : 2
realize          : 2       each             : 2       related          : 2       extract          : 2
special          : 2       organize         : 2       linking          : 2       size             : 2
interact         : 2       indicate         : 2       10               : 2       future           : 2
contents         : 2       most             : 2       pages            : 2       mobile           : 2
text             : 2       spaces           : 2       experiments      : 2       including        : 2
individual       : 2       approach         : 2       we               : 2       interfaces       : 2
efficiency       : 2       article          : 2       topology         : 2       influential      : 2
many             : 2       scale-free       : 2       called           : 2       basis            : 2
extraction       : 2       improve          : 2       these            : 2       property         : 2
evolve           : 2       effect           : 2       sentence         : 2       obtain           : 2
underlying       : 2       human            : 2       using            : 2       aspects          : 2
read             : 2       papers           : 2       know             : 2       intersection     : 2
methods          : 2       searching        : 2       way              : 2       also             : 2
exploration      : 2       similar          : 2       distance         : 2       links            : 2
required         : 2       monte            : 1       similarity       : 1       indicating       : 1
all              : 1       issues           : 1       depend           : 1       technique        : 1
```

presents	: 1	topic	: 1	critical	: 1	helps	: 1
straightforward	: 1	evaluation	: 1	large	: 1	measuring	: 1
discover	: 1	carlo	: 1	index	: 1	find	: 1
access	: 1	explosion	: 1	degree	: 1	objects	: 1
directions	: 1	implicit	: 1	studied	: 1	diameter	: 1
addresses	: 1	psychological	: 1	texts	: 1	establish	: 1
unit	: 1	languages	: 1	figure	: 1	two	: 1
search/navigation/browsing: 1		assessment	: 1	granularities	: 1	sharing	: 1
becomes	: 1	capturing	: 1	extracting	: 1	evolves	: 1
integrating	: 1	challenge	: 1	following	: 1	strategies	: 1
e.g.	: 1	neglected	: 1	sense	: 1	sought	: 1
provide	: 1	inputs	: 1	may	: 1	collection	: 1
tries	: 1	improving	: 1	short	: 1	third	: 1
explicit	: 1	algorithms	: 1	operations	: 1	structuring	: 1
facilitates	: 1	still	: 1	comprehend	: 1	systems	: 1
defining	: 1	views	: 1	propose	: 1	one	: 1
classifying	: 1	generation	: 1	measure	: 1	our	: 1
operation	: 1	out	: 1	living	: 1	since	: 1
content	: 1	shows	: 1	mechanisms	: 1	formation	: 1
put	: 1	generate	: 1	refinements	: 1	sack	: 1
philosophical	: 1	another	: 1	open	: 1	given	: 1
system	: 1	adopted	: 1	interests	: 1	accurately	: 1
authors	: 1	12	: 1	17	: 1	aims	: 1
enables	: 1	topics	: 1	have	: 1	built	: 1
able	: 1	13-16	: 1	which	: 1	online	: 1
techniques	: 1	towards	: 1	allow	: 1	intrinsic	: 1
implications	: 1	graphs	: 1	show	: 1	entities	: 1
hope	: 1	handle	: 1	means	: 1	dependent	: 1
closely	: 1	during	: 1	resource	: 1	covering	: 1
consisting	: 1	queries	: 1	where	: 1	constructing	: 1
achieved	: 1	10,17	: 1	radius	: 1	awaits	: 1
exponent	: 1	managing	: 1	identification	: 1	propagated	: 1
discovery	: 1	available	: 1	terms	: 1	creating	: 1
handful	: 1	however	: 1	distinguish	: 1	e-learning	: 1
adapting	: 1	both	: 1	according	: 1	context	: 1
estimation	: 1	whole	: 1	experimental	: 1	relevant	: 1
large-scale	: 1	simple	: 1	community	: 1	sampling	: 1
maximize	: 1	power-law	: 1	considering	: 1	i.e.	: 1
engines	: 1	create	: 1	linguistic	: 1	senses	: 1
deepen	: 1	those	: 1	uncertain	: 1	behavior	: 1
emphasizing	: 1	manually	: 1	cluster	: 1	multi-step	: 1
id	: 1	things	: 1	make	: 1	same	: 1
complex	: 1	viewed	: 1	units	: 1	used	: 1
user	: 1	normalization	: 1	weave	: 1	studies	: 1
modeled	: 1	proposed	: 1	rest	: 1	proposes	: 1
previous	: 1	depicts	: 1	helping	: 1	readers	: 1
similarities	: 1	spread	: 1	transformed	: 1	five	: 1
emergence	: 1	individuals	: 1	steps	: 1	either	: 1
popular	: 1	deal	: 1	library	: 1	accelerate	: 1

organizing	: 1	dimensions	: 1	does	: 1	locate	: 1
accessing	: 1	scientific	: 1	real-world	: 1	processing	: 1
verifications	: 1	properties	: 1	carried	: 1	meaning	: 1
simulation	: 1	supervised	: 1	neighbor	: 1	introduced	: 1
navigability	: 1	e-business	: 1	into	: 1	within	: 1
topologies	: 1	textual	: 1	was	: 1	assumes	: 1
form	: 1	idea	: 1	volume	: 1	compute	: 1
display	: 1	associated	: 1	certain	: 1	contribute	: 1
influence	: 1	general	: 1	at	: 1	distributions	: 1
constructed	: 1	functions	: 1	us	: 1	when	: 1
small-world	: 1	other	: 1	outputs	: 1	kinds	: 1
problems	: 1	includes	: 1	generated	: 1	reorganization	: 1
lead	: 1	depth	: 1	original	: 1		

WP_Fdic:

['the', 'DT']	: 82	['and', 'CC']	: 55	['of', 'IN']	: 39
['to', 'TO']	: 34	['in', 'IN']	: 28	['social', 'JJ']	: 24
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['this', 'DT']	: 6	['multi-dimensional', 'JJ']	: 5	['between', 'IN']	: 5
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['similar', 'NNP']	: 1	['integrating', 'VBG']	: 1	['read', 'VBP']	: 1

Column 1		Column 2		Column 3	
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['mobile', 'JJ']	: 1	['accelerate', 'VB']	: 1	['languages', 'NNS']	: 1
['capturing', 'VBG']	: 1	['becomes', 'VBZ']	: 1	['indicate', 'VBP']	: 1
['living', 'VBG']	: 1	['implicit', 'JJ']	: 1	['since', 'IN']	: 1
['readers', 'NNS']	: 1	['one', 'CD']	: 1	['searching', 'JJ']	: 1
['browse', 'JJ']	: 1	['underlying', 'VBG']	: 1	['indicate', 'VB']	: 1
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['sentences', 'NNP']	: 1	['sack', 'NN']	: 1	['exploration', 'NN']	: 1
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['discovery', 'NN']	: 1	['top-k', 'NNP']	: 1	['presents', 'VBZ']	: 1
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['read', 'VB']	: 1	['towards', 'IN']	: 1	['aims', 'VBZ']	: 1
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['networking', 'NNP']	: 1	['processing', 'NN']	: 1	['interact', 'VB']	: 1
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['proposes', 'VBZ']	: 1	['underlying', 'JJ']	: 1	['during', 'IN']	: 1
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['query', 'NN']	: 1	['within', 'IN']	: 1	['handle', 'VB']	: 1
['studies', 'VBZ']	: 1	['individual', 'NN']	: 1	['sense', 'VB']	: 1
['discover', 'VB']	: 1	['used', 'VBN']	: 1	['systems', 'NNS']	: 1

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['assessment', 'NNP']       : 1    ['philosophical', 'JJ']    : 1    ['radius', 'NNS']        : 1
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['out', 'RP']               : 1    ['indicating', 'VBG']      : 1    ['managing', 'VBG']      : 1
['still', 'RB']             : 1    ['interests', 'NNS']       : 1    ['which', 'WDT']         : 1
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['sharing', 'NN']           : 1    ['shows', 'VBZ']           : 1    ['large-scale', 'JJ']    : 1
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W_Pdic:
monte           : ['NNP']           semantic        : ['JJ']
similarity      : ['NN']            indicating      : ['VBG']
all             : ['DT']            query           : ['JJ', 'NN']
issues          : ['NNS']           depend          : ['VB']
technique       : ['NN']            presents        : ['VBZ']
to              : ['TO']            topic           : ['NN']
critical        : ['JJ']            helps           : ['VBZ']
nodes           : ['NNS']           resources       : ['NNS']
straightforward : ['JJ']            classifications : ['NNS']
evaluation      : ['NN']            large           : ['JJ']
measuring       : ['VBG']           titled          : ['NNP', 'VBN']
discover        : ['VB']            carlo           : ['NNP']
index           : ['NN']            find            : ['VB']
```

```
access                  : ['VB']                        new                    : ['NNP', 'JJ']
method                  : ['NN']                        evolving               : ['VBG']
explosion               : ['NN']                        degree                 : ['NN']
understanding           : ['VBG', 'NN']                 explore                : ['VB']
objects                 : ['NNS']                       making                 : ['VBG']
directions              : ['NNS']                       implicit               : ['JJ']
search                  : ['NN']                        studied                : ['VBN']
social                  : ['JJ', 'NNP']                 navigation             : ['NN', 'VBN', 'NNP']
diameter                : ['NN']                        addresses              : ['VBZ']
classification          : ['NN']                        manage                 : ['VB']
psychological           : ['JJ']                        texts                  : ['NNS']
establish               : ['VB']                        unit                   : ['NN']
languages               : ['NNS']                       use                    : ['NN', 'VBP']
from                    : ['IN']                        figure                 : ['NN']
browse                  : ['NN', 'JJ']                  two                    : ['CD']
search/navigation/browsing: ['NN']                          assessment             : ['NNP']
granularities           : ['NNS']                       sharing                : ['NN']
becomes                 : ['VBZ']                        faceted                : ['JJ', 'VBD', 'NNP']
capturing               : ['VBG']                       extracting             : ['VBG']
evolves                 : ['VBZ']                        integrating            : ['VBG']
this                    : ['DT']                        challenge              : ['NN']
can                     : ['MD']                        following              : ['VBG']
strategies              : ['NNS']                       e.g.                   : ['VBD']
process                 : ['NN']                        neglected              : ['VBN']
high                    : ['JJ']                        sense                  : ['VB']
sought                  : ['NN']                        information            : ['NN', 'NNP']
provide                 : ['VB']                        how                    : ['WRB']
intelligent             : ['JJ']                        inputs                 : ['VBZ']
may                     : ['MD']                        collection             : ['NN']
reflect                 : ['VBP', 'VB']                 applications           : ['NNS', 'NNP']
tries                   : ['VBZ']                       improving              : ['VBG']
such                    : ['JJ']                        efficiently            : ['RB']
short                   : ['JJ']                        natural                : ['JJ']
third                   : ['JJ']                        explicit               : ['JJ']
algorithms              : ['NNS']                       fundamental            : ['JJ']
words                   : ['NNS']                       operations             : ['NNS']
help                    : ['VB']                        structuring            : ['VBG']
paper                   : ['NN']                        through                : ['IN']
facilitates             : ['VBZ']                       still                  : ['RB']
its                     : ['PRP$']                      multi-dimensional      : ['JJ']
top-k                   : ['JJ', 'NNP']                 comprehend             : ['VBN']
systems                 : ['NNS']                       defining               : ['VBG']
views                   : ['NNS']                       propose                : ['VBP']
not                     : ['RB']                        one                    : ['CD']
realize                 : ['VB']                        articles               : ['NNS']
-lsb-                   : ['NNP', 'VBG', 'NNS', 'CD']   each                   : ['DT']
classifying             : ['JJ']                        generation             : ['NN']
principles              : ['NNS']                       related                : ['VBN']
society                 : ['NN']                        measure                : ['NN']
```

our	: ['PRP$']	operation	: ['NN']
extract	: ['VB']	special	: ['JJ']
out	: ['RP']	living	: ['VBG']
by	: ['IN']	network	: ['NN']
space	: ['NN', 'NNP']	since	: ['IN']
research	: ['NN', 'NNP']	content	: ['NN']
adaptive	: ['JJ']	issue	: ['NN']
shows	: ['VBZ']	model	: ['NN', 'NNP']
theory	: ['NN']	interactions	: ['NNS']
mechanisms	: ['NNS']	formation	: ['NN']
put	: ['VBD']	generate	: ['VB']
interaction	: ['NN', 'NNP', 'JJ']	language	: ['NN']
refinements	: ['NNS']	organize	: ['VB']
sack	: ['NN']	linking	: ['VBG']
philosophical	: ['JJ']	relations	: ['NNS']
another	: ['DT']	open	: ['JJ']
size	: ['NN']	given	: ['VBN']
interact	: ['VB', 'VBP']	system	: ['NN']
adopted	: ['VBN']	indicate	: ['VB', 'VBP']
interests	: ['NNS']	that	: ['WDT', 'DT', 'IN']
accurately	: ['RB']	authors	: ['NNS']
semantics	: ['NNS']	11	: ['NNP', 'CD']
10	: ['CD']	12	: ['CD']
effective	: ['JJ']	17	: ['CD']
aims	: ['VBZ']	future	: ['JJ']
enables	: ['VBZ']	interactive	: ['JJ', 'NNP']
and	: ['CC']	topics	: ['NNS']
have	: ['VBP']	sentences	: ['NNS', 'NNP']
contents	: ['NNS']	built	: ['VBN']
efficient	: ['JJ', 'NNP']	able	: ['JJ']
13-16	: ['CD']	which	: ['WDT']
online	: ['JJ']	techniques	: ['NNS']
towards	: ['IN']	multiple	: ['JJ']
allow	: ['VBP']	most	: ['RBS', 'JJS']
services	: ['NNS']	intrinsic	: ['JJ']
pages	: ['NNS']	mobile	: ['JJ', 'NNP']
implications	: ['NNS']	graphs	: ['NNS']
show	: ['VBP']	text	: ['NN']
spaces	: ['NNPS', 'NNS']	networks	: ['NNS', 'NNPS']
based	: ['VBN']	knowledge	: ['NN', 'VBP']
entities	: ['NNS']	hope	: ['VBP']
handle	: ['VB']	means	: ['NN']
dependent	: ['JJ']	closely	: ['RB']
during	: ['IN']	evolution	: ['NN']
resource	: ['NNP']	covering	: ['VBG']
consisting	: ['VBG']	experiments	: ['NNS']
queries	: ['NNS']	including	: ['VBG']
where	: ['WRB']	set	: ['NN']
constructing	: ['VBG']	achieved	: ['VBN']

```
10,17           : ['CD']                humans          : ['NNS']
individual      : ['NN', 'JJ']          radius          : ['NNS']
are             : ['VBP']               -rsb-           : ['NNS', 'JJ', 'NNP', 'CD']
awaits          : ['VBZ']               exponent        : ['NN']
managing        : ['VBG']               identification  : ['NNP']
between         : ['IN']                propagated      : ['VBN']
reading         : ['NN']                approach        : ['NN']
discovery       : ['NN']                available       : ['JJ']
we              : ['PRP']               various         : ['JJ']
terms           : ['NNS']               creating        : ['VBG']
interfaces      : ['NNS']               handful         : ['NN']
however         : ['RB']                efficiency      : ['NN']
key             : ['JJ', 'NN']          distinguish     : ['VB']
article         : ['NN']                e-learning      : ['NN']
topology        : ['JJ', 'NN']          adapting        : ['VBG']
both            : ['DT']                influential     : ['NNP', 'JJ']
many            : ['JJ']                scale-free      : ['JJ']
according       : ['VBG']               called          : ['VBN']
context         : ['NN']                estimation      : ['NN']
whole           : ['JJ']                experimental    : ['JJ']
relevant        : ['JJ']                large-scale     : ['JJ']
simple          : ['JJ']                community       : ['NN']
sampling        : ['NNP']               maximize        : ['VB']
power-law       : ['JJ']                considering     : ['VBG']
i.e.            : ['NNP']               engines         : ['NNS']
basis           : ['NN']                create          : ['VB']
been            : ['VBN']               extraction      : ['NN', 'NNP']
basic           : ['JJ']                linguistic      : ['JJ']
improve         : ['VB']                generating      : ['VBG']
senses          : ['NNS']               understand      : ['VB', 'VBP']
deepen          : ['VB']                an              : ['DT']
those           : ['DT']                uncertain       : ['JJ']
these           : ['DT']                will            : ['MD']
behavior        : ['NN']                property        : ['NN']
emphasizing     : ['VBG']               manually        : ['RB']
is              : ['VBZ']               it              : ['PRP']
cluster         : ['NN']                in              : ['IN']
multi-step      : ['JJ']                id              : ['NNP']
different       : ['JJ', 'VBG']         things          : ['NNS']
make            : ['VBP']               same            : ['JJ']
complex         : ['JJ']                viewed          : ['VBN']
units           : ['NNS']               development     : ['NN']
evolve          : ['VB']                used            : ['VBN']
effect          : ['NN', 'VBZ']         user            : ['NNP']
normalization   : ['JJ']                weave           : ['VB']
studies         : ['VBZ']               modeled         : ['VBN']
the             : ['DT']                proposed        : ['VBN']
sentence        : ['NN']                obtain          : ['VB']
rest            : ['NN']                proposes        : ['VBZ']
```

underlying	: ['VBG', 'JJ']		human	: ['JJ']	
using	: ['VBG']		previous	: ['JJ']	
web	: ['NN', 'NNP']		depicts	: ['VBZ']	
helping	: ['VBG']		readers	: ['NNS']	
similarities	: ['NNS']		spread	: ['NN']	
transformed	: ['VBN']		has	: ['VBZ']	
aspects	: ['NNS']		read	: ['VBP', 'VB']	
papers	: ['NNS']		five	: ['CD']	
know	: ['VB', 'NN']		world	: ['NN']	
emergence	: ['NNP']		intersection	: ['NN']	
facets	: ['NNS']		individuals	: ['NNS']	
steps	: ['NNS']		either	: ['RB']	
popular	: ['JJ']		methods	: ['NNS', 'NNP']	
deal	: ['VB']		people	: ['NNS']	
searching	: ['JJ', 'VBG']		library	: ['NN']	
accelerate	: ['VB']		organizing	: ['VBG']	
dimensions	: ['NNS']		for	: ['IN']	
does	: ['VBZ']		locate	: ['VB']	
be	: ['VB']		accessing	: ['VBG']	
scientific	: ['JJ']		real-world	: ['JJ']	
processing	: ['NN']		verifications	: ['NNS']	
properties	: ['NNS']		on	: ['IN']	
carried	: ['VBN']		of	: ['IN']	
meaning	: ['NN']		simulation	: ['NN']	
range	: ['NN']		supervised	: ['VBD']	
neighbor	: ['NN']		introduced	: ['VBN']	
or	: ['CC']		automatically	: ['RB', 'VB']	
navigability	: ['NN']		e-business	: ['NNS']	
into	: ['IN']		within	: ['IN']	
appropriate	: ['JJ']		networking	: ['NNP', 'NN']	
topologies	: ['NNS']		textual	: ['JJ']	
way	: ['NN']		was	: ['VBD']	
assumes	: ['VBZ']		form	: ['VB']	
idea	: ['NN']		volume	: ['NN']	
link	: ['NN']		-lrb-	: ['-LRB-']	
with	: ['IN']		also	: ['RB']	
compute	: ['VB']		devices	: ['NNS']	
exploration	: ['NNP', 'NN']		similar	: ['NNP', 'JJ']	
display	: ['VB']		distance	: ['NN']	
associated	: ['VBN']		links	: ['NNP', 'NNS']	
-rrb-	: ['-RRB-']		certain	: ['JJ']	
contribute	: ['VB']		influence	: ['NN']	
general	: ['JJ']		as	: ['IN']	
at	: ['IN']		distributions	: ['NNS']	
metric	: ['NNP', 'JJ']		constructed	: ['VBN']	
functions	: ['NNS']		us	: ['PRP']	
when	: ['WRB']		small-world	: ['JJ']	
cyberspace	: ['NN', 'JJ']		other	: ['JJ']	
outputs	: ['VBZ']		node	: ['NN', 'JJ']	

```
kinds            : ['NNS']              users        : ['NNS']
models           : ['NNS', 'VBD']       problems     : ['NNS']
includes         : ['VBZ']              lens         : ['NN']
generated        : ['VBN']              important    : ['JJ']
reorganization   : ['NNP']              lead         : ['VB']
required         : ['VBN', 'JJ']        depth        : ['NN']
original         : ['JJ']
```