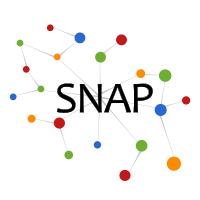
[By Jure Leskovec](http://cs.stanford.edu/~jure/)http://snap.stanford.edu/images/empty_logo.png[Stanford University](http://www.stanford.edu/)

[](http://snap.stanford.edu/index.html)

* [SNAP for C++](http://snap.stanford.edu/snap/index.html)
* [SNAP for Python](http://snap.stanford.edu/snappy/index.html)
* [SNAP Datasets](http://snap.stanford.edu/data/index.html)
* [BIOSNAP Datasets](http://snap.stanford.edu/biodata/index.html)
* [What's new](http://snap.stanford.edu/news.html)
* [People](http://snap.stanford.edu/people.html)
* [Papers](http://snap.stanford.edu/papers.html)
* [Projects](http://snap.stanford.edu/projects.html)
* [Citing SNAP](http://snap.stanford.edu/citing.html)
* [Links](http://snap.stanford.edu/links.html)
* [About](http://snap.stanford.edu/about.html)
* [Contact us](http://snap.stanford.edu/contact.html)

**Open positions**

Open research positions in **SNAP** group are available [**here**](http://snap.stanford.edu/apply/index.php).

**Stanford Large Network Dataset Collection**

* [Social networks](http://snap.stanford.edu/data/#socnets) : online social networks, edges represent interactions between people
* [Networks with ground-truth communities](http://snap.stanford.edu/data/#communities) : ground-truth network communities in social and information networks
* [Communication networks](http://snap.stanford.edu/data/#email) : email communication networks with edges representing communication
* [Citation networks](http://snap.stanford.edu/data/#citnets) : nodes represent papers, edges represent citations
* [Collaboration networks](http://snap.stanford.edu/data/#canets) : nodes represent scientists, edges represent collaborations (co-authoring a paper)
* [Web graphs](http://snap.stanford.edu/data/#web) : nodes represent webpages and edges are hyperlinks
* [Amazon networks](http://snap.stanford.edu/data/#amazon) : nodes represent products and edges link commonly co-purchased products
* [Internet networks](http://snap.stanford.edu/data/#p2p) : nodes represent computers and edges communication
* [Road networks](http://snap.stanford.edu/data/#road) : nodes represent intersections and edges roads connecting the intersections
* [Autonomous systems](http://snap.stanford.edu/data/#as) : graphs of the internet
* [Signed networks](http://snap.stanford.edu/data/#signnets) : networks with positive and negative edges (friend/foe, trust/distrust)
* [Location-based online social networks](http://snap.stanford.edu/data/#locnet) : Social networks with geographic check-ins
* [Wikipedia networks, articles, and metadata](http://snap.stanford.edu/data/#wikipedia) : Talk, editing, voting, and article data from Wikipedia
* [Temporal networks](http://snap.stanford.edu/data/#temporal) : networks where edges have timestamps
* [Twitter and Memetracker](http://snap.stanford.edu/data/#twitter) : Memetracker phrases, links and 467 million Tweets
* [Online communities](http://snap.stanford.edu/data/#onlinecoms) : Data from online communities such as Reddit and Flickr
* [Online reviews](http://snap.stanford.edu/data/#reviews) : Data from online review systems such as BeerAdvocate and Amazon

SNAP networks are also available from [SuiteSparse Matrix Collection](https://sparse.tamu.edu/SNAP) by [Tim Davis](http://faculty.cse.tamu.edu/davis/welcome.html). 

**Social networks**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | [Type](http://snap.stanford.edu/data/#netTypes) | Nodes | Edges | Description |
| [ego-Facebook](http://snap.stanford.edu/data/ego-Facebook.html) | Undirected | 4,039 | 88,234 | Social circles from Facebook (anonymized) |
| [ego-Gplus](http://snap.stanford.edu/data/ego-Gplus.html) | Directed | 107,614 | 13,673,453 | Social circles from Google+ |
| [ego-Twitter](http://snap.stanford.edu/data/ego-Twitter.html) | Directed | 81,306 | 1,768,149 | Social circles from Twitter |
| [soc-Epinions1](http://snap.stanford.edu/data/soc-Epinions1.html) | Directed | 75,879 | 508,837 | Who-trusts-whom network of Epinions.com |
| [soc-LiveJournal1](http://snap.stanford.edu/data/soc-LiveJournal1.html) | Directed | 4,847,571 | 68,993,773 | LiveJournal online social network |
| [soc-Pokec](http://snap.stanford.edu/data/soc-Pokec.html) | Directed | 1,632,803 | 30,622,564 | Pokec online social network |
| [soc-Slashdot0811](http://snap.stanford.edu/data/soc-Slashdot0811.html) | Directed | 77,360 | 905,468 | Slashdot social network from November 2008 |
| [soc-Slashdot0922](http://snap.stanford.edu/data/soc-Slashdot0902.html) | Directed | 82,168 | 948,464 | Slashdot social network from February 2009 |
| [wiki-Vote](http://snap.stanford.edu/data/wiki-Vote.html) | Directed | 7,115 | 103,689 | Wikipedia who-votes-on-whom network |
| [wiki-RfA](http://snap.stanford.edu/data/wiki-RfA.html) | Directed, Signed | 10,835 | 159,388 | Wikipedia Requests for Adminship (with text) |
| [soc-sign-bitcoin-otc](http://snap.stanford.edu/data/soc-sign-bitcoin-otc.html) | Weighted, Signed, Directed, Temporal | 5,881 | 35,592 | Bitcoin OTC web of trust network |
| [soc-sign-bitcoin-alpha](http://snap.stanford.edu/data/soc-sign-bitcoin-alpha.html) | Weighted, Signed, Directed, Temporal | 3,783 | 24,186 | Bitcoin Alpha web of trust network |
| [gemsec-Deezer](http://snap.stanford.edu/data/gemsec-Deezer.html) | Undirected | 143,884 | 846,915 | Gemsec Deezer dataset |
| [gemsec-Facebook](http://snap.stanford.edu/data/gemsec-Facebook.html) | Undirected | 134,833 | 1,380,293 | Gemsec Facebook dataset |

**Networks with ground-truth communities**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Type | Nodes | Edges | Communities | Description |
| [com-LiveJournal](http://snap.stanford.edu/data/com-LiveJournal.html) | Undirected, Communities | 3,997,962 | 34,681,189 | 287,512 | LiveJournal online social network |
| [com-Friendster](http://snap.stanford.edu/data/com-Friendster.html) | Undirected, Communities | 65,608,366 | 1,806,067,135 | 957,154 | Friendster online social network |
| [com-Orkut](http://snap.stanford.edu/data/com-Orkut.html) | Undirected, Communities | 3,072,441 | 117,185,083 | 6,288,363 | Orkut online social network |
| [com-Youtube](http://snap.stanford.edu/data/com-Youtube.html) | Undirected, Communities | 1,134,890 | 2,987,624 | 8,385 | Youtube online social network |
| [com-DBLP](http://snap.stanford.edu/data/com-DBLP.html) | Undirected, Communities | 317,080 | 1,049,866 | 13,477 | DBLP collaboration network |
| [com-Amazon](http://snap.stanford.edu/data/com-Amazon.html) | Undirected, Communities | 334,863 | 925,872 | 75,149 | Amazon product network |
| [email-Eu-core](http://snap.stanford.edu/data/email-Eu-core.html) | Directed, Communities | 1,005 | 25,571 | 42 | E-mail network |
| [wiki-topcats](http://snap.stanford.edu/data/wiki-topcats.html) | Directed, Communities | 1,791,489 | 28,511,807 | 17,364 | Wikipedia hyperlinks |

**Communication networks**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | [Type](http://snap.stanford.edu/data/#netTypes) | Nodes | Edges | Description |
| [email-EuAll](http://snap.stanford.edu/data/email-EuAll.html) | Directed | 265,214 | 420,045 | Email network from a EU research institution |
| [email-Enron](http://snap.stanford.edu/data/email-Enron.html) | Undirected | 36,692 | 183,831 | Email communication network from Enron |
| [wiki-Talk](http://snap.stanford.edu/data/wiki-Talk.html) | Directed | 2,394,385 | 5,021,410 | Wikipedia talk (communication) network |

**Citation networks**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | [Type](http://snap.stanford.edu/data/#netTypes) | Nodes | Edges | Description |
| [cit-HepPh](http://snap.stanford.edu/data/cit-HepPh.html) | Directed, Temporal, Labeled | 34,546 | 421,578 | Arxiv High Energy Physics paper citation network |
| [cit-HepTh](http://snap.stanford.edu/data/cit-HepTh.html) | Directed, Temporal, Labeled | 27,770 | 352,807 | Arxiv High Energy Physics paper citation network |
| [cit-Patents](http://snap.stanford.edu/data/cit-Patents.html) | Directed, Temporal, Labeled | 3,774,768 | 16,518,948 | Citation network among US Patents |

**Collaboration networks**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | [Type](http://snap.stanford.edu/data/#netTypes) | Nodes | Edges | Description |
| [ca-AstroPh](http://snap.stanford.edu/data/ca-AstroPh.html) | Undirected | 18,772 | 198,110 | Collaboration network of Arxiv Astro Physics |
| [ca-CondMat](http://snap.stanford.edu/data/ca-CondMat.html) | Undirected | 23,133 | 93,497 | Collaboration network of Arxiv Condensed Matter |
| [ca-GrQc](http://snap.stanford.edu/data/ca-GrQc.html) | Undirected | 5,242 | 14,496 | Collaboration network of Arxiv General Relativity |
| [ca-HepPh](http://snap.stanford.edu/data/ca-HepPh.html) | Undirected | 12,008 | 118,521 | Collaboration network of Arxiv High Energy Physics |
| [ca-HepTh](http://snap.stanford.edu/data/ca-HepTh.html) | Undirected | 9,877 | 25,998 | Collaboration network of Arxiv High Energy Physics Theory |

**Web graphs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | [Type](http://snap.stanford.edu/data/#netTypes) | Nodes | Edges | Description |
| [web-BerkStan](http://snap.stanford.edu/data/web-BerkStan.html) | Directed | 685,230 | 7,600,595 | Web graph of Berkeley and Stanford |
| [web-Google](http://snap.stanford.edu/data/web-Google.html) | Directed | 875,713 | 5,105,039 | Web graph from Google |
| [web-NotreDame](http://snap.stanford.edu/data/web-NotreDame.html) | Directed | 325,729 | 1,497,134 | Web graph of Notre Dame |
| [web-Stanford](http://snap.stanford.edu/data/web-Stanford.html) | Directed | 281,903 | 2,312,497 | Web graph of Stanford.edu |

**Product co-purchasing networks**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | [Type](http://snap.stanford.edu/data/#netTypes) | Nodes | Edges | Description |
| [amazon0302](http://snap.stanford.edu/data/amazon0302.html) | Directed | 262,111 | 1,234,877 | Amazon product co-purchasing network from March 2 2003 |
| [amazon0312](http://snap.stanford.edu/data/amazon0312.html) | Directed | 400,727 | 3,200,440 | Amazon product co-purchasing network from March 12 2003 |
| [amazon0505](http://snap.stanford.edu/data/amazon0505.html) | Directed | 410,236 | 3,356,824 | Amazon product co-purchasing network from May 5 2003 |
| [amazon0601](http://snap.stanford.edu/data/amazon0601.html) | Directed | 403,394 | 3,387,388 | Amazon product co-purchasing network from June 1 2003 |
| [amazon-meta](http://snap.stanford.edu/data/amazon-meta.html) | Metadata | 548,552 | 1,788,725 | Amazon product metadata: product info and all reviews on around 548,552 products. |

**Internet peer-to-peer networks**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | [Type](http://snap.stanford.edu/data/#netTypes) | Nodes | Edges | Description |
| [p2p-Gnutella04](http://snap.stanford.edu/data/p2p-Gnutella04.html) | Directed | 10,876 | 39,994 | Gnutella peer to peer network from August 4 2002 |
| [p2p-Gnutella05](http://snap.stanford.edu/data/p2p-Gnutella05.html) | Directed | 8,846 | 31,839 | Gnutella peer to peer network from August 5 2002 |
| [p2p-Gnutella06](http://snap.stanford.edu/data/p2p-Gnutella06.html) | Directed | 8,717 | 31,525 | Gnutella peer to peer network from August 6 2002 |
| [p2p-Gnutella08](http://snap.stanford.edu/data/p2p-Gnutella08.html) | Directed | 6,301 | 20,777 | Gnutella peer to peer network from August 8 2002 |
| [p2p-Gnutella09](http://snap.stanford.edu/data/p2p-Gnutella09.html) | Directed | 8,114 | 26,013 | Gnutella peer to peer network from August 9 2002 |
| [p2p-Gnutella24](http://snap.stanford.edu/data/p2p-Gnutella24.html) | Directed | 26,518 | 65,369 | Gnutella peer to peer network from August 24 2002 |
| [p2p-Gnutella25](http://snap.stanford.edu/data/p2p-Gnutella25.html) | Directed | 22,687 | 54,705 | Gnutella peer to peer network from August 25 2002 |
| [p2p-Gnutella30](http://snap.stanford.edu/data/p2p-Gnutella30.html) | Directed | 36,682 | 88,328 | Gnutella peer to peer network from August 30 2002 |
| [p2p-Gnutella31](http://snap.stanford.edu/data/p2p-Gnutella31.html) | Directed | 62,586 | 147,892 | Gnutella peer to peer network from August 31 2002 |

**Road networks**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | [Type](http://snap.stanford.edu/data/#netTypes) | Nodes | Edges | Description |
| [roadNet-CA](http://snap.stanford.edu/data/roadNet-CA.html) | Undirected | 1,965,206 | 2,766,607 | Road network of California |
| [roadNet-PA](http://snap.stanford.edu/data/roadNet-PA.html) | Undirected | 1,088,092 | 1,541,898 | Road network of Pennsylvania |
| [roadNet-TX](http://snap.stanford.edu/data/roadNet-TX.html) | Undirected | 1,379,917 | 1,921,660 | Road network of Texas |

**Autonomous systems graphs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | [Type](http://snap.stanford.edu/data/#netTypes) | Nodes | Edges | Description |
| [as-733](http://snap.stanford.edu/data/as-733.html) (733 graphs) | Undirected | 103-6,474 | 243-13,233 | 733 daily instances(graphs) from November 8 1997 to January 2 2000 |
| [as-Skitter](http://snap.stanford.edu/data/as-Skitter.html) | Undirected | 1,696,415 | 11,095,298 | Internet topology graph, from traceroutes run daily in 2005 |
| [as-Caida](http://snap.stanford.edu/data/as-Caida.html) (122 graphs) | Directed | 8,020-26,475 | 36,406-106,762 | The CAIDA AS Relationships Datasets, from January 2004 to November 2007 |
| [Oregon-1](http://snap.stanford.edu/data/Oregon-1.html) (9 graphs) | Undirected | 10,670-11,174 | 22,002-23,409 | AS peering information inferred from Oregon route-views between March 31 and May 26 2001 |
| [Oregon-2](http://snap.stanford.edu/data/Oregon-2.html) (9 graphs) | Undirected | 10,900-11,461 | 31,180-32,730 | AS peering information inferred from Oregon route-views between March 31 and May 26 2001 |

**Signed networks**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | [Type](http://snap.stanford.edu/data/#netTypes) | Nodes | Edges | Description |
| [soc-sign-bitcoin-otc](http://snap.stanford.edu/data/soc-sign-bitcoin-otc.html) | Weighted, Signed, Directed, Temporal | 5,881 | 35,592 | Bitcoin OTC web of trust network |
| [soc-sign-bitcoin-alpha](http://snap.stanford.edu/data/soc-sign-bitcoin-alpha.html) | Weighted, Signed, Directed, Temporal | 3,783 | 24,186 | Bitcoin Alpha web of trust network |
| [soc-sign-epinions](http://snap.stanford.edu/data/soc-sign-epinions.html) | Directed | 131,828 | 841,372 | Epinions signed social network |
| [wiki-Elec](http://snap.stanford.edu/data/wiki-Elec.html) | Directed, Bipartite | ~7,000 | ~100,000 | Wikipedia adminship election data |
| [wiki-RfA](http://snap.stanford.edu/data/wiki-RfA.html) | Directed, Signed | 10,835 | 159,388 | Wikipedia Requests for Adminship (with text) |
| [soc-sign-Slashdot081106](http://snap.stanford.edu/data/soc-sign-Slashdot081106.html) | Directed | 77,357 | 516,575 | Slashdot Zoo signed social network from November 6 2008 |
| [soc-sign-Slashdot090216](http://snap.stanford.edu/data/soc-sign-Slashdot090216.html) | Directed | 81,871 | 545,671 | Slashdot Zoo signed social network from February 16 2009 |
| [soc-sign-Slashdot090221](http://snap.stanford.edu/data/soc-sign-Slashdot090221.html) | Directed | 82,144 | 549,202 | Slashdot Zoo signed social network from February 21 2009 |

**Location-based online social networks**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | [Type](http://snap.stanford.edu/data/#netTypes) | Nodes | Edges | Description |
| [loc-Gowalla](http://snap.stanford.edu/data/loc-Gowalla.html) | Undirected, Geo-Location | 196,591 | 950,327 | Gowalla location based online social network |
| [loc-Brightkite](http://snap.stanford.edu/data/loc-Brightkite.html) | Unirected, Geo-Location | 58,228 | 214,078 | Brightkite location based online social network |

**Wikipedia networks, articles, and metadata**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | [Type](http://snap.stanford.edu/data/#netTypes) | Nodes | Edges | Description |
| [wikispeedia](http://snap.stanford.edu/data/wikispeedia.html) | Navigation paths | 4,604 | 119,882 | Navigation paths on the Wikipedia hyperlink network, collected by the human-computation game *Wikispeedia* |
| [wiki-Vote](http://snap.stanford.edu/data/wiki-Vote.html) | Directed | 7,115 | 103,689 | Wikipedia who-votes-on-whom network |
| [wiki-Talk](http://snap.stanford.edu/data/wiki-Talk.html) | Directed | 2,394,385 | 5,021,410 | Wikipedia talk (communication) network |
| [wiki-Elec](http://snap.stanford.edu/data/wiki-Elec.html) | Bipartite | ~7,000 | ~100,000 | Wikipedia adminship election data |
| [wiki-RfA](http://snap.stanford.edu/data/wiki-RfA.html) | Directed, Signed | 10,835 | 159,388 | Wikipedia Requests for Adminship (with text) |
| [wiki-meta](http://snap.stanford.edu/data/wiki-meta.html) | Edits | 2.3M users, 3.5M pages | 250M edits | Complete Wikipedia edit history (who edited what page) |
| [wiki-hoaxes](http://snap.stanford.edu/data/wiki-hoaxes.html) | Wiki markup | 64 |  | Public Wikipedia hoaxes |

**Temporal networks**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | [Type](http://snap.stanford.edu/data/#netTypes) | Nodes | Temporal Edges | Static Edges | Description |
| [sx-stackoverflow](http://snap.stanford.edu/data/sx-stackoverflow.html) | Directed, Temporal | 2,601,977 | 63,497,050 | 36,233,450 | Comments, questions, and answers on Stack Overflow |
| [sx-mathoverflow](http://snap.stanford.edu/data/sx-mathoverflow.html) | Directed, Temporal | 24,818 | 506,550 | 239,978 | Comments, questions, and answers on Math Overflow |
| [sx-superuser](http://snap.stanford.edu/data/sx-superuser.html) | Directed, Temporal | 194,085 | 1,443,339 | 924,886 | Comments, questions, and answers on Super User |
| [sx-askubuntu](http://snap.stanford.edu/data/sx-askubuntu.html) | Directed, Temporal | 159,316 | 964,437 | 596,933 | Comments, questions, and answers on Ask Ubuntu |
| [wiki-talk-temporal](http://snap.stanford.edu/data/wiki-talk-temporal.html) | Directed, Temporal | 1,140,149 | 7,833,140 | 3,309,592 | Users editing talk pages on Wikipedia |
| [email-Eu-core-temporal](http://snap.stanford.edu/data/email-Eu-core-temporal.html) | Directed, Temporal | 986 | 332,334 | 24,929 | E-mails between users at a research institution |
| [CollegeMsg](http://snap.stanford.edu/data/CollegeMsg.html) | Directed, Temporal | 1,899 | 20,296 | 59,835 | Messages on a Facebook-like platform at UC-Irvine |
| [soc-sign-bitcoin-otc](http://snap.stanford.edu/data/soc-sign-bitcoin-otc.html) | Weighted, Signed, Directed, Temporal | 5,881 | 35,592 |  | Bitcoin OTC web of trust network |
| [soc-sign-bitcoin-alpha](http://snap.stanford.edu/data/soc-sign-bitcoin-alpha.html) | Weighted, Signed, Directed, Temporal | 3,783 | 24,186 |  | Bitcoin Alpha web of trust network |

**Memetracker and Twitter**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | [Type](http://snap.stanford.edu/data/#netTypes) | Nodes | Edges | Description |
| [twitter7](http://snap.stanford.edu/data/twitter7.html) | Tweets | 17,069,982 users | 476,553,560 tweets | A collection of 476 million tweets collected between June-Dec 2009 |
| [memetracker9](http://snap.stanford.edu/data/memetracker9.html) | Memes | 96 million | 418 million links | Memetracker phrases and hyperlinks between 96 million blog posts from Aug 2008 to Apr 2009 |
| [ksc-time-series](http://snap.stanford.edu/data/ksc-time-series.html) | Time Series | 2,000 |  | Time series of volume of 1,000 most popular Memetracker phrases and 1,000 most popular Twitter hashtags |
| [higgs-twitter](http://snap.stanford.edu/data/higgs-twitter.html) | Tweets | 456,631 | 14,855,875 | Spreading processes of the announcement of the discovery of a new particle with the features of the Higgs boson on 4th July 2012. |

**Online Communities**

|  |  |  |  |
| --- | --- | --- | --- |
| Name | [Type](http://snap.stanford.edu/data/#netTypes) | Number of items | Description |
| [web-RedditPizzaRequests](http://snap.stanford.edu/data/web-RedditPizzaRequests.html) | Reddit requests | 5,671 submissions | Textual requests for pizza with outcome labels |
| [web-Reddit](http://snap.stanford.edu/data/web-Reddit.html) | Reddit submissions | 132,308 submissions | Resubmitted content on reddit.com |
| [web-flickr](http://snap.stanford.edu/data/web-flickr.html) | Images | 2,316,948 related images | Images sharing common metadata on Flickr |

**Online Reviews**

|  |  |  |  |
| --- | --- | --- | --- |
| Name | [Type](http://snap.stanford.edu/data/#netTypes) | Number of items | Description |
| [web-BeerAdvocate](http://snap.stanford.edu/data/web-BeerAdvocate.html) | Beer reviews | 1,586,259 beer reviews | Beer reviews from BeerAdvocate |
| [web-RateBeer](http://snap.stanford.edu/data/web-RateBeer.html) | Beer reviews | 2,924,127 beer reviews | Beer reviews from RateBeer |
| [web-CellarTracker](http://snap.stanford.edu/data/web-CellarTracker.html) | Wine reviews | 2,025,995 wine reviews | Wine reviews from CellarTracker |
| [web-Amazon](http://snap.stanford.edu/data/web-Amazon.html) | Amazon reviews (all categories) | 34,686,770 product reviews | Reviews from Amazon |
| [web-FineFoods](http://snap.stanford.edu/data/web-FineFoods.html) | Food reviews | 568,454 food reviews | Food reviews from Amazon |
| [web-Movies](http://snap.stanford.edu/data/web-Movies.html) | Movie reviews | 7,911,684 movie reviews | Movie reviews from Amazon |

Network types

* **Directed** : [directed](http://mathworld.wolfram.com/DirectedGraph.html) network
* **Undirected** : [undirected](http://mathworld.wolfram.com/UndirectedGraph.html) network
* **Bipartite** : [bipartite](http://en.wikipedia.org/wiki/Bipartite_graph) network
* **Multigraph** : network has [multiple edges](http://en.wikipedia.org/wiki/Multigraph) between a pair of nodes
* **Temporal** : for each node/edge we know the time when it appeared in the network
* **Labeled** : network contains [labels](http://mathworld.wolfram.com/LabeledGraph.html) (weights, attributes) on nodes and/or edges

Network statistics

|  |  |
| --- | --- |
| [Dataset statistics](http://snap.stanford.edu/data/index.html#netStat) | |
| Nodes | Number of nodes in the network |
| Edges | Number of edges in the network |
| Nodes in largest WCC | Number of nodes in the largest [weakly connected component](http://mathworld.wolfram.com/WeaklyConnectedComponent.html) |
| Edges in largest WCC | Number of edges in the largest [weakly connected component](http://mathworld.wolfram.com/WeaklyConnectedComponent.html) |
| Nodes in largest SCC | Number of nodes in the largest [strongly connected component](http://mathworld.wolfram.com/StronglyConnectedGraph.html) |
| Edges in largest SCC | Number of edges in the largest [strongly connected component](http://mathworld.wolfram.com/StronglyConnectedGraph.html) |
| Average clustering coefficient | [Average clustering coefficient](http://en.wikipedia.org/wiki/Clustering_coefficient) |
| Number of triangles | Number of triples of connected nodes (considering the network as undirected) |
| Fraction of closed triangles | Number of connected triples of nodes / number of (undirected) length 2 paths |
| Diameter (longest shortest path) | Maximum undirected shortest path length (sampled over 1,000 random nodes) |
| 90-percentile effective diameter | 90-th percentile of undirected shortest path length distribution (sampled over 1,000 random nodes) |

Citing SNAP

We encourage you to cite our datasets if you have used them in your work. You can use the following BibTeX citation:

@misc{snapnets,

author = {Jure Leskovec and Andrej Krevl},

title = {{SNAP Datasets}: {Stanford} Large Network Dataset Collection},

howpublished = {\url{http://snap.stanford.edu/data}},

month = jun,

year = 2014

}

复杂网络的研究很多都离不开数据集，下面这些是个人在做科研的过程中在互联网上搜集到的一些数据集网站，列举出来也方便同行们去使用。（2018年5月12日更）

1、[http://vladowiki.fmf.uni-lj.si/doku.php?id=pajek:data:urls:index](https://link.jianshu.com/?t=http://vladowiki.fmf.uni-lj.si/doku.php?id=pajek:data:urls:index)

数据集网站集合。这个网站中列出来很多数据集网站，非常全，其中的很多网站数据描述详细，而且数据可以直接下载，大家可以从中选出一些网站收藏起来。

2、[http://snap.stanford.edu/data/](https://link.jianshu.com/?t=http://snap.stanford.edu/data/)

这个是斯坦福大学的大型网络数据集网站，大家应该比较熟悉了。

3、[http://konect.uni-koblenz.de/](https://link.jianshu.com/?t=http://konect.uni-koblenz.de/)

这个网站是我个人最喜欢也是最常用的网站，里面数据集有上百种，数据的分类和描述真的是特别详细，而且还给出了数据集的可视化图以及一些基本统计特性，所有数据均可以直接下载。

4、[http://networkrepository.com/index.php](https://link.jianshu.com/?t=http://networkrepository.com/index.php)

这是另一个个人特别喜欢也是很常用的网站，和上面一样数据分类也是相当的详细，而且数据都可以在线可视化，大家应该能找到自己想要的数据。

5、[http://gdm.fudan.edu.cn/GDMWiki/Wiki.jsp?page=Network%20DataSet](https://link.jianshu.com/?t=http://gdm.fudan.edu.cn/GDMWiki/Wiki.jsp?page=Network%20DataSet)

这是复旦大学建立的网络数据集网站，里面有一些常用数据集以及一些相关资源网站。

6、[https://www.aminer.cn/data-sna#Twitter-Dynamic-Net](https://link.jianshu.com?t=https%3A%2F%2Fwww.aminer.cn%2Fdata-sna%23Twitter-Dynamic-Net)

搞数据挖掘应该都或多或少知道Aminer和唐杰，这是Aminer上的一些社交网络数据集。

7、[https://toreopsahl.com/datasets/](https://link.jianshu.com/?t=https://toreopsahl.com/datasets/)

这个网站里面有十几个数据集，包含社交网络、交通网络、合作网络等常用数据集。

8、[http://netwiki.amath.unc.edu/SharedData/SharedData](https://link.jianshu.com/?t=http://netwiki.amath.unc.edu/SharedData/SharedData)

这个网站列出了一些数据集以及一些复杂网络大牛的个人数据网站，大家可以去看看。

9、[http://vlado.fmf.uni-lj.si/pub/networks/data/](https://link.jianshu.com/?t=http://vlado.fmf.uni-lj.si/pub/networks/data/)

这个是Pajek网站提供的数据集，里面的数据都很经典，复杂网络早期研究中很多数据集都是源于这里。

10、[http://socialcomputing.asu.edu/pages/datasets](https://link.jianshu.com/?t=http://socialcomputing.asu.edu/pages/datasets)

社交网络数据集，里面包含国内外一些常用在线社区网站的数据集，中型到大型的数据规模，搞社会计算的同行可能用的比较多。

11、[http://www.sociopatterns.org/datasets/](https://link.jianshu.com/?t=http://www.sociopatterns.org/datasets/)

另一个社交网络数据集，这里面的数据集更多倾向于实体网络，比如联系网、高校朋友网、疾病传播网。

12、[http://www-personal.umich.edu/~mejn/netdata/](https://link.jianshu.com/?t=http://www-personal.umich.edu/~mejn/netdata/)

大牛Newman教授的个人数据网站，里面的数据集特别是科学家合作网络，用到特别多。

作者：Hdevin  
链接：https://www.jianshu.com/p/9313bc75c94b  
來源：简书  
简书著作权归作者所有，任何形式的转载都请联系作者获得授权并注明出处。