NetworkX News

NetworkX-0.36

Release date: 13 January 2008
See: https://networkx.lanl.gov/timeline

New features

- *GML format graph reader, tests, and example (football.py)*
- *edge_betweenness() and load_betweenness()*

Bug fixes

- *remove obsolete parts of pygraphviz interface*
- *improve handling of Matplotlib version strings*
- *write_dot() now writes parallel edges and self loops*
- *is_bipartite() and bipartite_color() fixes*
- *configuration model speedup using random.shuffle()*
- *convert with specified nodelist now works correctly*
- *vf2 isomorphism checker updates*

NetworkX-0.35.1

Release date: 27 July 2007
See: https://networkx.lanl.gov/timeline
Small update to fix import readwrite problem and maintain Python2.3 compatibility.

NetworkX-0.35

Release date: 22 July 2007
See: https://networkx.lanl.gov/timeline

New features

- *algorithms for strongly connected components.*
- *Brandes betweenness centrality algorithm (weighted and unweighted versions)*

- *closeness centrality for weighted graphs*
- *dfs_preorder, dfs_postorder, dfs_tree, dfs_successor, dfs_predecessor*
- *readers for GraphML, LEDA, sparse6, and graph6 formats.*
- *allow arguments in graphviz_layout to be passed directly to graphviz*

Bug fixes

- *more detailed installation instructions*
- *replaced dfs_preorder,dfs_postorder (see search.py)*
- *allow initial node positions in spectral_layout*
- *report no error on attempting to draw empty graph*
- *report errors correctly when using tuples as nodes #114*
- *handle conversions from incomplete dict-of-dict data*

NetworkX-0.34

Release date: 12 April 2007
See: https://networkx.lanl.gov/timeline

New features

- *benchmarks for graph classes*
- *Brandes betweenness centrality algorithm*
- *Dijkstra predecessor and distance algorithm*
- *xslt to convert DIA graphs to NetworkX*
- *number_of_edges(u,v) counts edges between nodes u and v*
- *run tests with python setup_egg.py test (needs setuptools) else use python -c "import networkx; networkx.test()"*
- *is_isomorphic() that uses vf2 algorithm*

Bug fixes

- *speedups of neighbors()*
- *simplified Dijkstra's algorithm code*
- *better exception handling for shortest paths*
- *get_edge(u,v) returns None (instead of exception) if no edge u-v*
- *floyd_warshall_array fixes for negative weights*
- *bad G467, docs, and unittest fixes for graph atlas*
- *don't put nans in numpy or scipy sparse adjacency matrix*
- *handle get_edge() exception (return None if no edge)*
- *remove extra kwds arguments in many places*

- *no multi counting edges in conversion to dict of lists for multigraphs*
- *allow passing tuple to get_edge()*
- *bad parameter order in node/edge betweenness*
- *edge betweenness doesn't fail with XGraph*
- *don't throw exceptions for nodes not in graph (silently ignore instead) in edges_* and degree_**

What's new in NX-0.33?

Release date: 27 November 2006
See: https://networkx.lanl.gov/timeline

New features

- *draw edges with specified colormap*
- *more efficient version of Floyd's algorithm for all pairs shortest path*
- *use numpy only, Numeric is deprecated*
- *include tests in source package (networkx/tests)*
- *include documentation in source package (doc)*
- *tests can now be run with*

```
>>> import networkx
>>> networkx.test()
```

Bug fixes

- *read_gpickle now works correctly with Windows*
- *refactored large modules into smaller code files*
- *degree(nbunch) now returns degrees in same order as nbunch*
- *degree() now works for multiedges=True*
- *update node_boundary and edge_boundary for efficiency*
- *edited documentation for graph classes, now mostly in info.py*

Examples

- *Draw edges with colormap https://networkx.lanl.gov/file/networkx/trunk/doc/examples/draw_edg*

What's new in NX-0.32?

Release date: 29 September 2006
See: https://networkx.lanl.gov/timeline

New features

- *Update to work with numpy-1.0x*
- *Make egg usage optional: use python setup_egg.py bdist_egg to build egg*
- *Generators and functions for bipartite graphs*
- *Experimental classes for trees and forests*
- *Support for new pygraphviz update (in nx_agraph.py) , see https://networkx.lanl.gov/pygraphviz/ for pygraphviz details*

Bug fixes

- *Handle special cases correctly in triangles function*
- *Typos in documentation*
- *Handle special cases in shortest_path and shortest_path_length, allow cutoff parameter for maximum depth to search*
- *Update examples: erdos_renyi.py, miles.py, roget,py, eigenvalues.py*

Examples

- *Expected degree sequence https://networkx.lanl.gov/file/networkx/trunk/doc/examples/expected*
- *New pygraphviz interface https://networkx.lanl.gov/file/networkx/trunk/doc/examples/.py https://networkx.lanl.gov/browser/networkx/trunk/doc/examples/pygraphviz_simple.py https://networkx.lanl.gov/browser/networkx/trunk/doc/examples/pygraphviz_miles.py https://networkx.lanl.gov/browser/networkx/trunk/doc/examples/pygraphviz_attributes.py*

What's new in NX-0.31?

Release date: 20 July 2006
See: https://networkx.lanl.gov/timeline

New features

- *arbitrary node relabeling (use relabel_nodes)*
- *conversion of NetworkX graphs to/from Python dict/list types, numpy matrix or array types, and scipy_sparse_matrix types*
- *generator for random graphs with given expected degree sequence*

Bug fixes

- *Allow drawing graphs with no edges using pylab*
- *Use faster heapq in dijkstra*
- *Don't complain if X windows is not available*

Examples

- *update drawing examples*

What's new in NX-0.30?

Release date: 23 June 2006
See: https://networkx.lanl.gov/timeline

New features

- *update to work with Python 2.5*
- *bidirectional version of shortest_path and Dijkstra*
- *single_source_shortest_path and all_pairs_shortest_path*
- *s-metric and experimental code to generate maximal s-metric graph*
- *double_edge_swap and connected_double_edge_swap*
- *Floyd's algorithm for all pairs shortest path*
- *read and write unicode graph data to text files*
- *read and write YAML format text files, http://yaml.org*

Bug fixes

- *speed improvements (faster version of subgraph, is_connected)*
- *added cumulative distribution and modified discrete distribution utilities*
- *report error if DiGraphs are sent to connected_components routines*
- *removed with_labels keywords for many functions where it was causing confusion*
- *function name changes in shortest_path routines*
- *saner internal handling of nbunch (node bunches), raise an exception if an nbunch isn't a node or iterable*
- *better keyword handling in io.py allows reading multiple graphs*
- *don't mix Numeric and numpy arrays in graph layouts and drawing*
- *avoid automatically rescaling matplotlib axes when redrawing graph layout*

Examples

- *unicode node labels https://networkx.lanl.gov/file/networkx/trunk/doc/examples/unicode.py*

What's new in NX-0.29?

Release date: 28 April 2006
See: https://networkx.lanl.gov/timeline

New features

- *Algorithms for betweeenness, eigenvalues, eigenvectors, and spectral projection for threshold graphs*
- *Use numpy when available*
- *dense_gnm_random_graph generator*
- *Generators for some directed graphs: GN, GNR, and GNC by Krapivsky and Redner*
- *Grid graph generators now label by index tuples. Helper functions for manipulating labels.*
- *relabel_nodes_with_function*

Bug fixes

- *Betweenness centrality now correctly uses Brandes definition and has normalization option outside main loop*
- *Empty graph now labled as empty_graph(n)*
- *shortest_path_length used python2.4 generator feature*
- *degree_sequence_tree off by one error caused nonconsecutive labeling*
- *periodic_grid_2d_graph removed in favor of grid_2d_graph with periodic=True*

What's new in NX-0.28?

Release date: 13 March 2006
See: https://networkx.lanl.gov/timeline

New features

- *Option to construct Laplacian with rows and columns in specified order*
- *Option in convert_node_labels_to_integers to use sorted order*
- *predecessor(G,n) function that returns dictionary of nodes with predecessors from breadth-first search of G starting at node n. https://networkx.lanl.gov/ticket/26*

Examples

- *Formation of giant component in binomial_graph: https://networkx.lanl.gov/file/networkx/trunk/d*
- *Chess masters matches: https://networkx.lanl.gov/file/networkx/trunk/doc/examples/chess_maste*
- *Gallery https://networkx.lanl.gov/wiki/gallery*

Bug fixes

- *Adjusted names for random graphs.*
  - *erdos_renyi_graph=binomial_graph=gnp_graph: n nodes with edge probability p*
  - *gnm_graph: n nodes and m edges*
  - *fast_gnp_random_graph: gnp for sparse graphs (small p)*
- *Documentation contains correct spelling of Barabási, Bollobás, Erdős, and Rényi in UTF-8 encoding*
- *Increased speed of connected_components and related functions by using faster BFS algorithm in networkx.paths https://networkx.lanl.gov/ticket/27*
- *XGraph and XDiGraph with multiedges=True produced error on delete_edge*
- *Cleaned up docstring errors*
- *Normalize names of some graphs to produce strings that represent calling sequence*

What's new in NX-0.27?

Release date: 5 February 2006
See: https://networkx.lanl.gov/timeline

New features

- *sparse_binomial_graph: faster graph generator for sparse random graphs*
- *read/write routines in io.py now handle XGraph() type and gzip and bzip2 files*
- *optional mapping of type for read/write routine to allow on-the-fly conversion of node and edge datatype on read*
- *Substantial changes related to digraphs and definitions of neighbors() and edges(). For digraphs edges=out_edges. Neighbors now returns a list of neighboring nodes with possible duplicates for graphs with parallel edges See https://networkx.lanl.gov/ticket/24*
- *Addition of out_edges, in_edges and corresponding out_neighbors and in_neighbors for digraphs. For digraphs edges=out_edges.*

Examples

- *Minard's data for Napoleon's Russian campaign https://networkx.lanl.gov/file/networkx/trunk/do*

Bug fixes

- *XGraph(multiedges=True) returns a copy of the list of edges for get_edge()*

What's new in NX-0.26

Release date: 6 January 2006

New features

- *Simpler interface to drawing with pylab*
- *G.info(node=None) function returns short information about graph or node*
- *adj_matrix now takes optional nodelist to force ordering of rows/columns in matrix*
- *optional pygraphviz and pydot interface to graphviz is now callable as "graphviz" with pygraphviz preferred. Use draw_graphviz(G).*

Examples

- *Several new examples showing how draw to graphs with various properties of nodes, edges, and labels* https://networkx.lanl.gov/file/networkx/trunk/examples/

Bug fixes

- *Default data type for all graphs is now None (was the integer 1)*
- *add_nodes_from now won't delete edges if nodes added already exist*
- *Added missing names to generated graphs*
- *Indexes for nodes in graphs start at zero by default (was 1)*

What's new in NX-0.25?

Release date: 5 December 2005

New features

- *Uses setuptools for installation* http://peak.telecommunity.com/DevCenter/setuptools
- *Improved testing infrastructure, can now run python setup.py test*
- *Added interface to draw graphs with pygraphviz* https://networkx.lanl.gov/pygraphviz/
- *is_directed() function call*

Examples

- *Email example shows how to use XDiGraph with Python objects as edge data* https://networkx.lanl.gov/file/networkx/trunk/examples/unixemail.py

Documentation

- *Reformat menu, minor changes to Readme, better stylesheet*

Bug fixes

- *use create_using= instead of result= keywords for graph types in all cases*
- *missing weights for degree 0 and 1 nodes in clustering*
- *configuration model now uses XGraph, returns graph with identical degree sequence as input sequence*
- *fixed dijstra priority queue*
- *fixed non-recursive toposort and is_directed_acyclic graph*

What's new in NX-0.24?

Release date: 20 August 2005

Bug fixes

- *Update of dijstra algorithm code*
- *dfs_successor now calls proper search method*
- *Changed to list compehension in DiGraph.reverse() for python2.3 compatibility*
- *Barabasi-Albert graph generator fixed*
- *Attempt to add self loop should add node even if parallel edges not allowed*

What's new in NX-0.23?

Release date: 14 July 2005

The NetworkX web locations have changed:
https://networkx.lanl.gov/ - main documentation site https://networkx.lanl.gov/svn - subversion source code repository https://networkx.lanl.gov/wiki - bug tracking and info

Important Change

The naming conventions in NetworkX have changed. The package name "NX" is now "networkx".

The suggested ways to import the NetworkX package are

- *import networkx*
- *import networkx as NX*
- *from networkx import **

New features

- *DiGraph reverse*
- *Graph generators*
  - *watts_strogatz_graph now does rewiring method*
  - *old watts_strogatz_graph->newman_watts_strogatz_graph*

Examples

Documentation

- *Changed to reflect NX-networkx change*
- *main site is now https://networkx.lanl.gov/*

Bug fixes

- *Fixed logic in io.py for reading DiGraphs.*
- *Path based centrality measures (betweenness, closeness) modified so they work on graphs that are not connected and produce the same result as if each connected component were considered separately.*

What's new in NX-0.22?

Release date: 17 June 2005

New features

- *Topological sort, testing for directed acyclic graphs (DAGs)*
- *Dikjstra's algorithm for shortest paths in weighted graphs*
- *Multidimensional layout with dim=n for drawing*
- *3d rendering demonstration with vtk*
- *Graph generators*
  - *random_powerlaw_tree*
  - *dorogovtsev_goltsev_mendes_graph*

Examples

- *Kevin Bacon movie actor graph: Examples/kevin_bacon.py*
- *Compute eigenvalues of graph Laplacian: Examples/eigenvalues.py*
- *Atlas of small graphs: Examples/atlas.py*

Documentation

- *Rewrite of setup scripts to install documentation and tests in documentation directory specified*

Bug fixes

- *Handle calls to edges() with non-node, non-iterable items.*
- *truncated_tetrahedral_graph was just plain wrong*
- *Speedup of betweenness_centrality code*
- *bfs_path_length now returns correct lengths*
- *Catch error if target of search not in connected component of source*
- *Code cleanup to label internal functions with _name*
- *Changed import statement lines to always use "import NX" to protect name-spaces*
- *Other minor bug-fixes and testing added*