

3.1 NWB Algorithms and Tools

Preprocessing

- Extract Top Nodes
- Extract Nodes Above or Below Value
- Remove Node Attributes
- Delete High Degree Nodes
- Delete Random Nodes
- Delete Isolates
- Extract Top Edges
- Extract Edges Above or Below Value
- Remove Edge Attributes
- Remove Self Loops
- Trim by Degree
- MST-Pathfinder Network Scaling
- Fast Pathfinder Network Scaling
- Pathfinder Network Scaling
- Snowball Sampling (N nodes)
- Node Sampling
- Edge Sampling
- Symmetrize
- Dichotomize
- Multipartite Joining
- Normalize Text
- Slice Table by Time

Modeling

- Random Graph
- Watts-Strogatz Small World
- Barabási-Albert Scale-Free
- CAN
- Chord
- Hypergrid
- PRU
- TARL
- Discrete Network Dynamics
- Evolving Network (Weighted)

Analysis Edit

- Network Analysis Toolkit

Unweighted & Undirected

- Node Degree
- Node Distribution
- Watts Strogatz Clustering Coefficient
- Watts Strogatz Clustering Coefficient Over k
- Diameter
- Average Shortest Path
- Shortest Path Distribution
- Node Betweenness Centrality
- Global Connected Components
- HITS
- Weak Component Clustering
- Blondel Community Detection
- MST-Pathfinder Network Scaling
- Extract K-Core
- Annotate K-Coreness

Weighted & Undirected

- [Weight Distribution](#)
- [Weight versus End-point Degree](#)
- [Degree & Strength](#)
- [Strength versus Degree](#)
- [Strength Distribution](#)
- [Nearest Neighbor Degree](#)
- [Clustering Coefficient](#)
- [Randomization](#)
- [Can](#)
- [Chord](#)
- [k-Random Walk](#)
- [Random Breadth-First](#)
- [Burst Detection](#)

Unweighted & Directed

- [Node Indegree](#)
- [Node Outdegree](#)
- [Outdegree Distribution](#)
- [k-Nearest Neighbor](#)
- [Single Node In-Out Degree Correlations](#)
- [PageRank](#)
- [HITS](#)
- [Dyad Reciprocity](#)
- [Arc Reciprocity](#)
- [Adjacency Transitivity](#)
- [Weak Component Clustering](#)
- [Blondel Community Detection](#)
- [Extract and Annotate Attractors](#)
- [Extract K-Core](#)
- [Annotate K-Coreness](#)

Weighted and Directed

- [HITS](#)
- [Weighted PageRank](#)
- [Fast Pathfinder Network Scaling](#)
- [Blondel Community Detection](#)

Visualization Edit

- [GUESS](#)
- [GnuPlot](#)
- [DrL \(VxOrd\)](#)
- [Specified \(prefuse beta\)](#)
- [Circular \(JUNG\)](#)
- [Radial Tree \(prefuse alpha\)](#)
- [Radial Tree with Annotations \(prefuse beta\)](#)
- [Tree Map \(prefuse beta\)](#)
- [Tree View \(prefuse beta\)](#)
- [Balloon Graph \(prefuse alpha\)](#)
- [Force Directed with Annotation \(prefuse beta\)](#)
- [Force Directed with Annotation \(prefuse beta\)](#)
- [Kamada-Kawai \(JUNG\)](#)
- [Fruchterman-Reingold \(JUNG\)](#)
- [Fruchterman-Reingold with Annotation \(prefuse beta\)](#)
- [Spring \(JUNG\)](#)
- [Small World \(prefuse alpha\)](#)
- [Parallel Coordinates \(demo\)](#)
- [LaNet](#)
- [Circular Hierarchy](#)

Scientometrics

- Remove ISI Duplicate Records
- Remove Rows With Multitudinous Fields
- Detect Duplicate Nodes
- Update Network by Merging Nodes
- Extract Directed Network
- Extract Paper Citation Network
- Extract Author Paper Network
- Extract Co-Occurrence Network
- Extract Word Co-Occurrence Network
- Extract Co-Author Network
- Extract Reference Co-Occurrence (Bibliographic Coupling) Network
- Extract Co-Citation Similarity Network