

# Link prediction techniques

Node

Topology

Social theory

Neighbor

Path

Random walk

Community

Triad

Structural hole

Tie strength

Homophily

**Node-based**  
-Node similarity  
-Text similarity  
...

**Neighbor-based**  
-CN  
-JC  
-AA  
-LHN  
-PA  
-RA  
...

**Path-based**  
-Katz  
-LP  
-RSS  
-Friend Link  
-VCP  
...

**Random Walk-based**  
-SimRank  
-PropFlow  
-RPR  
-HT  
-CT  
-CST  
...

**Social Theory-based**  
-Structural hole  
-Triad  
-Tie strength  
-Homophily  
...

External information: weights, attributes, statistics, knowledge repository, ...

## Learning-based techniques

Feature-based classification

Kernel-based

Matrix factorization

Probabilistic model

Link prediction  
in  
heterogeneous  
network

Link prediction  
in  
location  
network

Link prediction  
in  
temporal  
network

Link prediction  
in  
bipartite  
network

Link prediction  
for  
multi-relation  
links

Link prediction  
for  
active/unactive  
links

Link prediction  
for  
disappearing  
links

Network

Link

Link prediction problems