# NetOpt and NetAttack

I the Purpose of NetOpt and NetAttack

NetOpt

NetOpt helps you to determine the network structure as robust as possible against both random failure of nodes and targeted attacks from the outside when the fundamental parameters such as the total number of nodes, the average number of links of each node, and the number of "modes" in the degree distribution are given.
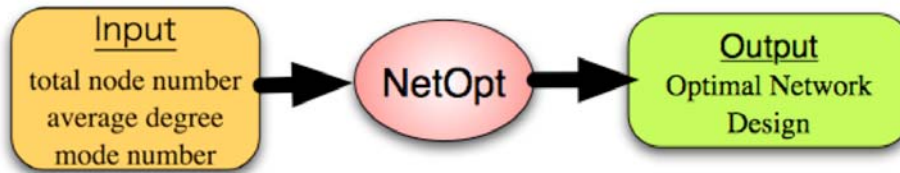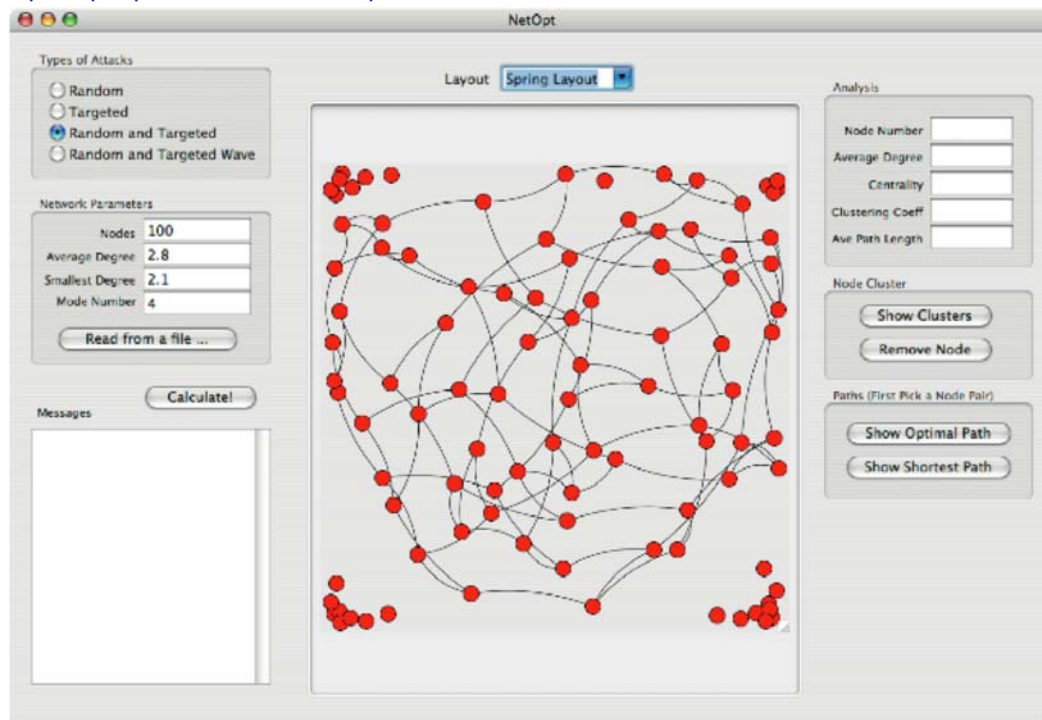

NetAttack

NetAttack helps you to choose the best strategy for the disintegration of a given network even if the global structure of the network is not known. From the local information of the network structure, NetAttack guess the possible network structure and choose the best strategy for the attack.

II Features

Simple input parameters with Graphic User Interface

Real-time visualization of the network structure

When you change the network parameters, you can see the new structure of the network almost instantaneously.

Various types of network layout

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You can choose the most suitable layout for network visualization from various types of network layout, such as "Spring layout", "Tree layout", "Circular layout" and so on.

Portability

NetOpt/NetAttack is written in JAVA and you can run it equally on various types of platform such as Windows, Mac OS, and UNIX/Linux.

Including the latest results of network research

Since NetOpt/NetAttack is made by one of the most active network research groups in the world, NetOpt/NetAttack is always updated including the latest results in this field.

III What do we have now?

Theory for network robustness against various types of attacks developed in our group

We also have other important results such as the theory for the crossover behavior of the optimal path in strongly disordered networks.

Prototype of the application

See the GUI example above.

IV What are we going to do?

Include our latest studies for the robustness of multi-modal networks

Include our latest studies for the behavior of optimal paths in weakly and strongly disordered networks

Refine the appearance of the network visualization