

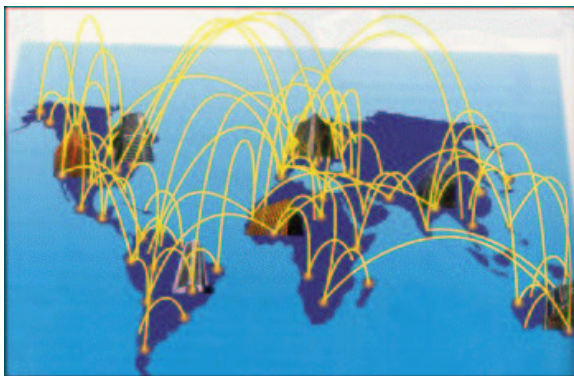
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Semester/Diploma/Master's Thesis "Mapping the Internet"



With the growing popularity of the Internet, quite some work has been done to map all/some of its hosts so that it can be visualized in some meaningful way. However, physical distance is not always the determining factor when it comes to the connection between two hosts. For example, New York and London can be connected by a fiber optic cable, while some village in the alps can only be reached by a (slow) satellite. Therefore, what matters to most applications is the *latency* and not the distance. Consequently, there

has been some fairly recent research exploring the idea of mapping the Internet using the latency measurements between hosts.

Another aspect to consider is the feasibility of performing measurements. One has to take into account that we often cannot precisely measure the latency between two arbitrary hosts on the Internet. Part of this work might look into the different techniques for obtaining real-world data.

The majority of this thesis will be to understand current work and evaluate existing algorithms, as well as designing your own approach. The idea is to get a picture of how well the Internet can be mapped in terms of latencies as well as coming up with simple algorithms that perform well in most cases. Of course, a theoretical analysis is welcome as well, but is perhaps a bit of a difficult undertaking.

Skills

- Strong programming skills and interest in simulation of algorithms.
- Alternatively, very strong theoretical background and interest.

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