Masterthesis on

Churn-resistant self-stabilizing distributed storage systems

In latest years topological self-stabilization has gained increased interest in the distributed systems area. It is desirable to design data redundant self-stabilizing storage systems, where the nodes maintain the data stored in the system, even if some nodes leave violently the distributed system. Moreover, the data must be able to be retrieved efficiently, and the cost of recreating lost data must not be too high.

In this thesis the student should study different self-stabilizing overlay protocols. He/she should choose an appropriate protocol in order to embed known strategies for redundant distributed data storage, with a goal to design (a) new self-stabilizing overlay(s) with these properties. The correctness of the new designed overlay protocols should be proved, and if possible, the efficiency in terms of message overhead and data recreation time.

The applicant is expected to be good qualified in theoretical computer science, and in particular in the field of theory of distributed systems.

Contact Information:

Andreas Koutsopoulos,

- F2.406, Telefon: (+49) 5251 - 60-67 24, koutsopo[at]mail.upb.de

Thim Strothmann

- F2.411, Telefon: (+49) 5251 - 60-67 30, thim[at]mail.upb.de