

Master's Thesis

Algebraic Coding for Distributed Storage

Distributed storage systems with a large number of storage commonly rely on MDS codes, such as Reed-Solomon codes, to protect the system from data loss in the event of node failures while keeping the storage overhead low. In the event of such a failure, the reconstruction of failed nodes induces a large amount of network traffic. In recent years several solutions to this problem have been proposed, most notably locally repairable codes and regenerating codes. We investigate the properties of specific subclasses of these codes, as well as the combination of the two properties. Further, with the increased demand for data privacy, we develop methods for protecting users' data from the eyes of curious servers in distributed storage systems.

Advisors

Lukas Holzbaur