

DBScale: Synthetically Scaling an Enterprise's Database (PI: Dr. Lo Chi Lik Eric; 2011/12)

This project aims to research and develop, DBScale, a software that can synthetically scale up or down the database of an enterprise's database application. DBScale ensures the synthetic databases generated preserve the data characteristics of the original database and also preserve the query characteristics in the database applications. A company can use DBScale to create an up-scaled version of its production database, for predicting the scalability of its production environment; or create a down-scaled version of its database, for its developers to debug the programs more easily and effectively. Furthermore, since the generated databases are synthetic but close to the original data, the company can use them as the test databases in out-sourced projects, or use them to test the performance of different cloud services (when choosing a cloud service provider), without worrying any privacy problems. Related database tools in the market do not have the capacity of scaling up or down an input database yet. In this project, advanced data generation techniques developed in a recent research project will be applied to the new setting here. A prototype will be developed, tested, and shared with the pilot users in the industry.