# CS554 Project Ideas

## ZHT:Graph - Design and implement a graph database on ZHT

### Overview

A graph database is a database that uses graph structures with nodes, edges, and properties to represent and store data. By definition, a graph database is any storage system that provides index-free adjacency. This means that every element contains a direct pointer to its adjacent element and no index lookups are necessary. General graph databases that can store any graph are distinct from specialized graph databases such as triplestores and network databases. ZHT is a zero-hop distributed hash table based Datasys Lab, which has been tuned for the requirements of high-end computing systems. ZHT aims to be a building block for future distributed systems, such as parallel and distributed file systems, distributed job management systems, and parallel programming systems. In this project you will be work on building a graph database on top of ZHT.

### Relevant Systems and Reading Material

ZHT paper: http://datasys.cs.iit.edu/projects/ZHT/ZHT-CRC-PID2666213-Final.pdf

Project URL: http://datasys.cs.iit.edu/projects/ZHT/index.html

Graph database on Wikipedia: http://en.wikipedia.org/wiki/Graph_database

### Preferred/Required Skills

Required: Linux, C/C++ (no OOP skill needed)

Preferred: Shell scripting (for experiments).

### Evaluation and Metrics

Functionality, latency, throughput, scalability

### Project Mentor

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