Dissertation topics

Based on Storage Engines

1. Adaptive Indexing: Switching Between B+Tree and LSM Based on Workload
   1. Propose a hybrid index that dynamically chooses the backend structure based on workload stats.
   2. Explore caching, workload monitoring, and adaptive rebalancing.
2. Design and Evaluation of a Lightweight Embedded LSM-Tree Database Storage Engine in Go
   1. Build a minimal key-value store using LSM principles.
   2. Include WAL, compaction, SSTables, memtables, and benchmark vs BadgerDB.