**Performance – Optimierung von Datenbanken**

**Auswahl Techniken Bachelorarbeit:**

* Datenbank – Caching / Query – Caching
* Query – Optimization
* Index – Techniken
* Sharding und Partitionierung
* NoSQL – Datenbanken und sinnvolle Einbindung in relationale Datenbanken

**Aktueller geplanter Ablauf:**

* Database aufbauen / repräsentative Test-Database nutzen => Analyse der Testdaten
* Technik erklären, umsetzen, Wirkung analysieren, Kontext einordnen
  + Query Processing: Different Joins und Analyse von Operationen
    - Relational Query Optimizer
  + Indexing und Views?
    - Welche genau`
  + Probleme der RDBMS => einzelne Performance Vorteile von NoSQL

**Literatur 1: Database System Concepts**

* Cpt.4: Joins, Views
* Cpt.11: Different indexing and hashing methods
* Cpt.12: Query Processing: measures of query cost, evaluations of expressions
* Cpt.13: Query Optimization
* (Cpt. 24, 25, 26)

**Literatur 2: The Complete Book**

* Cpt. 1.2: Overview of Query Processing
* Cpt. 8: Views and Indexes
* Cpt. 14: Index Structures
* Cpt. 15: Query Execution
* Cpt. 20: Parallel and Distrubuted Databases => Problems of RDBs

**Literatur 3: SQL Performance Explained**

* Cpt. 1: Anatomy of an Index
* Cpt. 2: Specific Operations?
* Cpt. 3: Performance and Scalability
* Cpt. 4: Join Operations
* Cpt. 5, 6, 7: Index, Partitioning

**Literatur 4: Database Management System**

* Cpt. 8: Overview of Storage and Indexing
* Cpt. 10: Tree – Structured Indexing
* Cpt. 11: Hash – Based Indexing
* Cpt. 12: Query Evaluation
* Cpt. 22: Parallel and Distributed Databases

**Literatur 5: Designing Data-Intensive Applications**

* Cpt. 2: The Birth of NoSQL
* Cpt. 5: Replication
* Cpt. 6: Partitioning

**Literatur 6: The Data Warehouse Toolkit**

* Only DWS stuff not related to my topics

**Literatur 7: High Performance MySQL**

* Cpt. 4: Optimizing Datatypes
* Cpt. 5: Indexing for High Performance
* Cpt. 6: Query Performance Optimization
* Cpt. 7: Partitioning
* Cpt. 10: Replication
* Cpt. 11: Scalability
* Cpt. 12: High Availability

**Literatur 8: Redis Essentials**

* Not that important