CV

General Information

Full Name	Hao Luan
Date of Birth	11th July 1997
Languages	Chinese, English
e-mail	somekernel@gmail.com

Education

2021 - 2024

Master of Science in Software Engieering

East China Normal University, Shanghai, China

- core courses
    - CMU-15721: Advanced Database Systems - Explored advanced concepts in database systems, focusing on topics like indexing, query optimization, and transaction management.
    - CMU-15445: Introduction to Database Systems - Explored basic knowledge in database system, focusing on concurrency control technology such as MVCC and storage layout in disk based database systems.
    - MIT-6.824: Distributed Systems - Explored the design and implementation of distributed systems, including consistency models, replication, and fault tolerance.
- research work
    - PT-BM: OS page table co-designe with buffer manager in RDBMS
    - TreeKV: Efficient Garbage Collection and Range Query for Key-Value Separated LSM-Stores
- project work
    - Implement a main-memory database named fulgurdb, which is a plugable storage engine under mysql supporting MVCC, log and recovery.

2015 - 2019

Bachelor of Science in Computer Science

Beijing University of Chemical Technology, Beijing, China

- core courses
    - MIT-6.828(Operating System Engineering) - Developed a solid understanding of operating systems, covering process management, memory management, file systems, device drivers, and networking
- core books
    - Computer Systems: A Programmer's Perspective
    - Operating Systems: Three Easy Pieces
    - Linux Device Driver
    - Understanding the Linux Kernel
    - Advanced Programming in the Unix Environment
    - UNIX Network Programming
    - Engineering a Compiler
    - C++ Primer

Experience

2022.07

Summer School Member - ByteDance

ByteDance, Shanghai, China

- Implemented Hot Ring, a hotness-aware key-value store, by developing a core lock-free linked list data structure.

2022.05 - 2022.06

Intern - Distributed Database System Engineer

ByteDance, Shanghai, China

- Gained in-depth knowledge of distributed database systems.
- Studied Kubernetes (k8s) and its role in managing distributed systems.

2021.01 - 2021.08

OS Kernel Developer

TrustKernel, Shanghai, China

- Developed and implemented a secure storage service in a RISC-V TEE environment.
- Developed and implemented secure encryption/decryption services within the RISC-V TEE environment.
- Optimized OS interruption handler performance under the RISC-V secure OS kernel.

2019.7 - 2020.9

Linux Device Driver Developer

Shannon System, Shanghai, China

- Implemented asynchronous I/O in a key-value store.
- Utilized zero-copy techniques to optimize I/O performance in scenarios involving large values.
- Fragmented large values into manageable pieces, enabling on-demand read/write of partial segments and enhancing I/O performance in such circumstances.

Academic Interests

Database System

- Explored the design and optimization of database systems, with a focus on enhancing performance in main-memory workloads.
- Investigated the interplay between operating systems and database systems, particularly in the area of OS and database system co-design.

Operating System

- Explored techniques for IO optimization in operating systems, including strategies for improving disk IO performance.