Kitaek Lee

Database Operating Systems Laboratory

Hanyang University

Seoul, Republic of Korea

(+82) 01-2970-4311

ktlee4311@gmail.com

linkedin.com/in/kitaek-lee-131178234/

EDUCATION & BACKGROUND

Hanyang University, DBOS Laboratory *Seoul, Republic of Korea*
Ph.D. Program in Computer Science (Did not complete due to health reasons) 2023 - 2024
M.S in Computer Science (GPA: 3.89 / 4.5) 2020 - 2023
Undergraduate Intern 2019 - 2020
Advisor: Prof. Hyungsoo Jung

Hanyang University (Transferred from Sahmyook University) *Seoul, Republic of Korea*
B.S in Computer Science (GPA: 3.6 / 4.5) 2018 - 2020

Coursework in Computer Science, Sahmyook University (Transferred to *Seoul, Republic of Korea*
Hanyang University) 2012 - 2017

INTERESTS

Database systems, Distributed systems, Transaction processing, Storage engine

TECHNICAL SKILLS

Programming Languages: C, C++, Python
Operating Systems: Linux (System Administration, Kernel Development)
Database Systems: Database Management Systems (Development)
Software Development: System Software, Concurrent programming
Specialized Tools: Linux Kernel Debugging, Performance Optimization

PUBLICATIONS

Deploying Computational Storage for HTAP DBMSs Takes More Than Just Computation Offloading
Kitaek Lee, Jaechan Ahn, Insoon Jo, Hyuk Lee, Hwang Lee, Woong Sul, Hyungsoo Jung
VLDB Endowment Inc. International Conference on Very Large Data Bases (VLDB'23)

Hybrid Transactional/Analytical Processing Amplifies IO in LSM-trees
Jongbin Kim, Jaechan Ahn, Kitaek Lee, Hyungsoo Jung
Institute of Electrical and Electronics Engineers Access (IEEE ACCESS'22)

PROJECTS

Analysis of hidden cost of write amplification in LSM-tree based key-value database
- Investigated the impact of write amplification in LSM-tree structures within RocksDB.
- Explored potential optimizations in compaction strategies to reduce storage overhead.
- Presented at the Korean Database Conference (KDBC'21).

Effect of File I/O on a coupled FEM & FVM solver
- Oral presentation at Annual Spring Conference of KIPS (ASK' 21)
- Awarded Grand Prize at the HY-BK Research Festival in Hanyang University

An Implementation of an Optimal Logging Algorithm using MySQL
- Poster presentation at Korea Software Congress of KISSE (KSC'19)

Improving GPU Performance with an Advanced CTA Allocation Policy Considering the Performance Impact when Changing the Number of Concurrently Executing CTAs

- Poster presentation at Korea Software Congress of KISSE (KSC'19)

C– compiler

- Developed a compiler front end.
- Not support C pointer.
- Developed as part of the Compiler course.

My OS project

- In process
- Developing a simple toy operating system.
- Developed a boot loader, a simple keyboard driver.
- In process implementing ISR.
- Developed as part of the course Database management system coures.

Simple transactional DB

- Developed a simple toy database management system.
- Not support logging.
- Developed as part of the course Database management system coures.

Enhancing the Performance of MariaDB Buffer Pool Initialization

- Designed optimizations for buffer pool initialization in MariaDB, reducing startup latency.
- Implemented and benchmarked improvements in concurrent memory allocation strategies.
- Developed as part of the Concurrent Programming course (ITE4065).

Enhancing the Performance of a UNIX-style OS with a scheduler, light-weight process, and file system

- Developed a custom scheduler, lightweight process mechanism, and optimized file system for a UNIX-based OS.
- Improved task scheduling efficiency and resource utilization.
- Developed as part of the Operating Systems course (ITE3021)

TEACHING

Teaching Assistant, Database Systems (Samsung)	Summer 2023 / 2022
Teaching Assistant, Concurrent Programming (ITE4065)	Fall 2022
Teaching Assistant, Database Systems (ITE2038)	Fall 2022 / 2021
Teaching Assistant, Operating System (ITE3021)	Spring 2022 / 2021