Calvin Pham

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My Website

EDUCATION

University of California, Berkeley **May 2022**
Bachelor of Arts in Computer Science
GPA: 3.51

TECHNICAL SKILLS

Programming Languages: Python, Java, C, C++, Golang, HTML/CSS, JavaScript, SQL, NoSQL, RISC-V
Systems Knowledge: x86, Linux, RISC, MIPS, OpenMP
Tools & Frameworks: Git, GDB, Gurobi, Mockito, JUnit, Google Cloud Platform
Dev Ops & CICD: make, Docker
Applications: SQLite, MongoDB

PROJECTS

Cryptographic File Sharing System | Golang

- Designed and developed a multi-user, concurrency supported, secure file sharing system.
- Supports confidentiality, integrity, and authenticity of user account data and files through public key encryption, HMAC, AES-CTR block chaining, SHA-512 hashing, and symmetric encryption.

Pintos Operating System | C

- Co-designed and co-implemented enhancements to an operating system, for user program execution, syscalls, thread management, and file systems.
- Created a concurrency supported LRU buffer cache for an Inode based file system, and a priority donation algorithm for thread synchronization functionality.

Gitlet | Java

- Designed and developed a fully functioning file version control system that mimics the features of Git.
- Supports most git features including branches, commits, checkouts, logs, resets, and merges.

RookieDB | Java

- Designed and developed various functions for a bare bones database implementation.
- Implemented B+ tree indices, efficient join algorithms, query optimization, multi-granularity locking to allow concurrent execution of transactions, and database recovery through logging.

Realistic Water Physics Simulator | C++, Blender

- Co-designed and co-developed a realistic 3D water simulator, with water physics derived from fluid dynamics research papers.
- Utilized multi-threading and hashing for particle physics calculations and polygon mesh graphics generations.

EXPERIENCE

Pioneers in Engineering Club **September 2019 - December 2019**

- Maintained C API code responsible for RC car functionality and communication.
- Supervised in competitions where high school students operate code controlled RC cars to achieve objectives.

RELEVANT COURSEWORK

- Artificial Intelligence
- Computer Programs
- Computer Graphics & Imaging (IP)
- Computer Security
- Data Structures
- Database Systems
- Discrete Mathematics & Probability Theory
- Designing Information Devices & Systems I & II
- Efficient Algorithms & Intractable Problems
- The Foundations of Data Science
- Operating Systems & Systems Programming
- Machine Structures
- Principles & Techniques of Data Science
- User Interface Design & Development