

# CALVIN PHAM

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Portfolio Website

## EDUCATION

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**University of California, Berkeley**

May 2022

*Bachelor of Arts in Computer Science*

GPA: 3.51

## TECHNICAL SKILLS

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**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, Mockito, JUnit, Google Cloud Platform, Amazon Web Services

**Dev Ops & CICD:** Docker, make

**Applications:** MongoDB, MySQL, SQLite

## PROJECTS

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### 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

- Devised and built a fully functioning file version control system that mimics the key features of Git.
- Utilized object oriented programming and serialization in order to support the functionality of these features.

### 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.

## EXPERIENCE

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### Private Computer Science Tutor | Freelance

August 2022 - Present

- Planned individualized lessons that address students' needs, increasing aptitude and understanding.
- Mentored students on problem solving strategies, and assisted in analyzing and debugging student code.

### Software Developer | Pioneers in Engineering Club

September 2019 - December 2019

- Maintained C API code responsible for RC robot functionality and communication.
- Attended meetings where optimizations and additional features for the RC robot were brainstormed.

## RELEVANT COURSEWORK

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