Calvin Pham

408-836-3482 | pqcalvin@gmail.com | LinkedIn | Portfolio

Education

University of California, Berkeley May 2022
Bachelor of Arts in Computer Science

Work Experience

Systems Test Engineer II, *Quanta Computer – Fremont, CA* Jan 2024 – Present

- Directed cross-functional and cross-company collaboration with **Microsoft** and **NVIDIA** to reproduce failures, isolate root causes, and validate solutions in hardware and firmware systems.
- Led multi-month, model-specific post-production stress-test initiatives across multiple server platforms, designing long-duration workloads to uncover potential reliability, performance, and stability issues.
- Executed weekly validation of **400+** servers across L10–L11 production stages, using automated test procedures, ensuring full hardware functionality and performance readiness for shipment.
- Deployed PXE infrastructure supporting multiple GPU racks and **100+** concurrent server bring-ups, eliminating bottlenecks and doubling production throughput within 4 months, ahead of schedule.
- Implemented and monitored **30+** iperf servers with multi-VLAN NIC-testing environments across 10G/25G/100G networks, cutting network validation time by **50%**.
- Developed custom Bash/Python automation scripts leveraging ipmitool and BMC interfaces for remote server control, FRU and SEL log collection, and hardware diagnostics.
- Diagnosed and resolved server HW/FW issues by optimizing test environments, performing BIOS and FPGA/CP firmware reflashes, and verifying fixes through regression testing.

Software Engineer, *Pioneers in Engineering Club – Berkeley, CA* Sept 2019 – March 2020

- Optimized C/C++ APIs for RC robot control systems in high school robotics competitions, cutting communication latency by **80%** and improving responsiveness by **40%** under high-load conditions.
- Designed and implemented new firmware modules enabling real-time sensor processing and autonomous movement, significantly improving stability, precision, and overall robot performance.

Projects

Cryptographic File Sharing System | *Golang*

- Engineered a secure, multi-user file-sharing system for **100+** users and **5,000+** files, using cryptographic primitives, including public/private keys, to ensure confidentiality, integrity, and authenticity.
- Developed a robust file-sharing and revocation module after redesigning the initial architecture, resolving concurrency challenges, improving throughput by **60%**, and reducing errors by **95%**.
- Ran **300+** cryptographic and concurrency tests under multi-user scenarios, validating system robustness and gaining hands-on expertise in encryption, thread safety, and resilient system design.

Pintos Operating System | *C*

- Co-designed and implemented core enhancements to a bare-bones OS, including syscalls, user program execution, thread scheduling, and file system support, improving kernel concurrency and multi-threading.
- Developed a concurrency-safe LRU buffer cache for Inode-based file system operations, handling race conditions with per-block locks and pre-eviction strategies, reducing disk access latency by **40%**.
- Implemented a recursive priority donation algorithm for locks, semaphores, and condition variables to prevent deadlocks and enforce thread priorities under high contention.

Technical Skills

Languages: C, C++, Python, Golang

Systems & Networking: Linux, PXE, BMC/IPMI, BIOS, Firmware Flashing & Validation, iperf

Tools: Git, GDB, Bash, Docker, SSH, Amazon Web Services