Brandon Wang

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EDUCATION

University of California, Berkeley   Aug 2020 - May 2024
B.A. Computer Science, B.A. Statistics, GPA: 3.83/4.00   *Berkeley, CA*

Relevant Coursework: Computer Architecture, Operating Systems and Systems Programming, Data Structures and Algorithms, Discrete Mathematics and Probability Theory, Efficient Algorithms and Intractable Problems, Circuits and Differential Equations, Signal Processing, Linear Algebra, Multivariable Calculus

EXPERIENCE

Citadel LLC   Sept 2022 - Dec 2022
Software Engineering Intern   *New York, NY*

- Partnered with COO, Head of Equities, and portfolio managers to design a portfolio optimization project.
- Optimized Citadel's systematic equities strategy by cutting ingestion latency of trading desk signals by 85%.
- Built a desk override feature for consensus data with C++, Apache Kafka, and distributed storage systems.

Apple Inc.   May 2022 - Aug 2022
Software Engineering Intern   *Cupertino, CA*

- Developed a high-frequency parallel processing system in Kubernetes to deliver loads of up to 100k+ RPS.
- Synchronized hardware metrics collection across pods and services via cluster networking with TCP/UDP.
- Architected a distributed cloud services cost optimization engine for resource provisioning in GKE to reduce annual cloud-related costs in Apple FM Studio by up to 45% amortized at scale.

NVIDIA Corp.   Jan 2022 - Apr 2022
Software Engineering Intern   *Seattle, WA*

- Implemented POSIX inode metadata within a prototype file system mount of OpenStack Swift's object store.
- Reduced latency of lock acquisition by 10% on average through establishing an executive lock release algorithm which recalculates thread priority to avoid priority inversion in the underlying OS scheduler.
- Increased test coverage by 70% by porting unit tests from LXD to Docker and developed logging tool.

Segmed Inc.   May 2021 - Aug 2021
Software Engineering Intern   *Palo Alto, CA*

- Built core REST API and caching systems of RESTful microservices in Go using mux, Redis, and unit tests.
- Delivered production features for datasets valued at $200k+ in React and automated PostgreSQL queries.
- Improved pipeline efficiency by 35% by introducing an OCR model based on OpenCV scene detection.

PROJECTS

PintOS | *Lightweight OS with kernel threads, user programs, and a file system*   Stack: C, C++, x86 Assembly
- Implements creating process control syscalls, context switching, priority scheduler, file system buffers, etc.

NumC | *Fast library for logical matrix operations*   Stack: C, SSE, SIMD
- Accelerated by instruction and data level parallelism to achieve >700x optimization for matrix powering.

Multithreaded HTTP Server | *Parallelized HTTP server written in Rust*   Stack: Rust, Tokio Sockets
- Uses sockets which spawn off an asynchronous thread to obtain a new socket address per HTTP request.

Voice-controlled Rover | *Self-stabilizing mobile robot guided by speech input signals* Stack: C++, Python, Circuitry
- Driven by an Arduino, mic-board, regulator circuits, feedback control, classifies speech signals (SVD/PCA).

Securities Trading Bot | *Bot using ETF arbitrage and ADR pairs-trading strategies*   Stack: Python, socket.py
- Implements a high-frequency trading model that trades across a live trading floor.

TECHNICAL SKILLS

Languages: C, C++, Python, Golang, RISC-V, x86 Assembly, Rust, Java, JavaScript, TypeScript, SQL, Bash
Technologies: React.js, Node.js, Docker, Kubernetes, PostgreSQL, MongoDB, AWS, GKE, Git, CI/CD