

Wang Jiefan

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EDUCATION

National University of Singapore

Singapore

Bachelor of Computing, Focus in Parallel Computing and Database Systems

Aug. 2021 – July 2025 (Est.)

- Teaching Assistant (CS2109S Introduction to Machine Learning): AY23/24 Sem 1
- Teaching Assistant (CS3211 Parallel and Concurrent Programming): AY23/24 Sem 2
- Teaching Assistant (CS3210 Parallel Computing): AY24/25 Sem 1
- Current GPA: 4.26

EXPERIENCE

Backend Platform Developer Intern

Singapore

Shopee Pte. Ltd.

May - Aug. 2024

- Developed Virtual Gateway feature for internal container networking platform in Go using gRPC and etcd, to automate and segregate the allocation of subnets to hundreds of in-production Virtual Private Clouds (VPCs) across global business units.
- Implemented Quality of Service (QoS) policies for internal container networking platform, by dynamically setting Differentiated Services Code Point values in IP headers using cgroup-attached eBPF programs, to enable client-side configuration of TCP traffic priorities for hundreds of baremetal VPC servers.

Software Engineer Intern

Singapore

Pinvest Pte. Ltd.

May - July 2023

- Designed and implemented parallelization and optimization constructs, such as streaming, pipelining and caching, into LLM service infrastructure. End-to-end latency for API endpoints improved by as much as 35%.
- Triaged and fixed several request-spoofing security vulnerabilities to mobile financial trading platform.

PROJECTS

The Conq Programming Language | *Rust, WebAssembly*

Jan. – April 2024

- General-purpose programming language for web pages, supporting vector graphics.
- Current implementation uses LLVM-MLIR toolchain and compiles to WASM with HTML Canvas bindings.
- Includes Conq-er, a Monaco-based IDE.

Order-Matching System | *C++*

Sep. – Nov. 2023

- Socket-based HFT-inspired multi-threading [order-matching engine](#).
- Utilizes custom extension of `std::priority_queue` that is thread-safe, supports arbitrary removal and iteration.
- Intel Core i7-9700 (8 cores, 8 threads): Processes 2000 buy-sell orders in ~18ms.

PySlidingWindow | *Python*

Aug. – Nov. 2022

- Custom lost-tolerant automatic repeat request (ARQ) protocol.
- Demo supports reliable file transfer over UDP. ~15kbps (19% slowdown) at 40% packet corruption and 40% packet loss.

... and many more, at nafeij.me and github.com/Nafeij

ACHIEVEMENTS

SuperComputing 24 IndySCC - *Team Captain (Ongoing)*

July - Nov. 2024

- Researched optimizations for HPLinpack, NANOScale Molecular Dynamics and other benchmarks on Indiana University's Jetstream2 cluster.
- Assessed feasibility of Transparent HugePage Support in minimizing effect of TLB misses.

TECHNICAL SKILLS

Languages: C/C++, Java, Kotlin, Go, Python, Typescript, Rust, PostgreSQL, SQLite, HTML/CSS, WebAssembly

Frameworks: React, React Native, Node.js, Next.js, gRPC, Flask, Django, JUnit

Technologies: Git, OpenMP, MPI, eBPF, Cilium, etcd, Kubernetes, ROCm, CUDA, Slurm, PBS, Singularity, GraphQL, Jenkins, Firebase, NumPy, PyTorch, OpenStack, JIRA

MISCELLANEOUS

As a Singapore Citizen, I'm eligible for the **USSFTA H1B1 Visa**.