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*

- Teaching Assistant, CS2109S Introduction to Machine Learning: AY23/24 Sem 1
- Teaching Assistant, CS3211 Parallel and Concurrent Programming: AY23/24 Sem 2, AY24/25 Sem 2
- Teaching Assistant, CS3210 Parallel Computing: AY24/25 Sem 1
- Founder, Team Kent Ridge (High-Performance Cluster Computing Interest Group): AY24/25
- GPA: 4.31 - 2nd Class Upper

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 eBFP 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.

ACHIEVEMENTS

SuperComputing 24 IndySCC - Highest HPLinpack Score (22.6 TFLOPS, 1st of 20) — *July - Nov. 2024*

- Implemented code patches for HPLinpack and runtime optimizations for Nanoscale Molecular Dynamics on Indiana University's Jetstream2 HPC cluster.

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 built with Yew.

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

TECHNICAL SKILLS

Languages: C\C++, Java, Kotlin, Go, Python, Typescript, Rust, PostgreSQL, SQLite, HTML\CSS, WebAssembly
Frameworks: React, OpenMP, OpenACC, React Native, Node.js, Next.js, gRPC, Flask, Ansible, Spack, Django, JUnit, NumPy, Pandas, PyTorch, Cilium
Technologies: Git, OpenMPI, eBPF, etcd, Kubernetes, ROCm, CUDA, Slurm, PBS, Singularity, GlusterFS, GraphQL, Jenkins, Firebase, OpenStack, JIRA

MISCELLANEOUS

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