Wang Jiefan

nafeij.me | wng.jiefan@gmail.com | linkedin.com/in/wang-jiefan | github.com/Nafeij | @wjiefan

EDUCATION

Bachelor of Computing National University of Singapore
Honours w. Distinction (CGPA: 4.33) - Focus in Parallel Computing and Database Systems *Aug. 2021 – July 2025*

EXTRA-CURRICULAR

Team Kent Ridge (High-Performance Cluster Computing Interest Group) *June 2024 - July 2025*
- Co-founder, captain of competition group of 20+ students.
- Designed and built private multi-node research cluster, administered with Ansible, running on Rocky Linux, serving a Gluster-distributed XFS filesystem and integrated with the Spack package manager.
- Conducted tutorial workshops on HPC technologies such as CUDA GPGPU programming, advanced C++ features and memory-aware software optimization.

ACHIEVEMENTS

SC24 Indy-Student Cluster Competition *July - Nov. 2024*
- **Highest HPLinpack Score** (22.6 TFLOPS across 30 AMD EPYC-Milan CPU Nodes).
- Implemented MPI topology optimizations, kernel patches and runtime optimizations for the HPL Linear algebra benchmark and Nanoscale Molecular Dynamics simulation.

ISC25 HPC-AI Student Cluster Competition *Aug. 2024 - June 2025*
- **3rd Place** (Online Category).
- Wrote patches for the µphys module of ICON (Icosahedral Nonhydrostatic Weather and Climate Model) using C++26 std::par compiler assisted offloading ($\times 257$ runtime improvement, >4hrs $\to$ 56.1s).

PROFESSIONAL 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.

Teaching Assistant Singapore
National University of Singapore *Aug. 2023 - May. 2025*
- CS2109S Introduction to Machine Learning (AY23/24 Sem 1), CS3211 Parallel and Concurrent Programming (AY23/24, AY24/25 Sem 2), CS3210 Parallel Computing (AY24/25 Sem 1/2)
- Created coding assignments, conducted weekly tutorial sessions and provided consultation to students.
- Administered 30-node Slurm-based student compute cluster, backed by a Gluster replicated filesystem and Prometheus+Grafana monitoring.

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*
- Experimental 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, Nvidia HPC SDK, Slurm, PBS, Singularity, Gluster, GraphQL, Jenkins, Firebase, OpenStack, JIRA

MISCELLANEOUS

I am a **Singaporean citizen**.