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.)*
- Current GPA: 4.26

NUS High School of Math. and Science   Singapore
Diploma w/ High Distinction   *Jan. 2013 – Oct. 2018*
- Honours in Physics and Computer Science, Majors in Chemistry and Mathematics
- Debate and Oratorical Society Executive Council Vice President

EXPERIENCE

Backend Platform Developer Intern   Singapore
Shopee Pte. Ltd.   *May - Aug. 2024*
- Developed Virtual Private Cloud (VPC) Gateway feature for internal deployment platform, to streamline management of subnet pools for automatic allocation to VPC Groups across accessibility zones.
- Implemented dynamic Differentiated Services Code Point architecture for internal Network Policy Management system, to enable user configuration of traffic priorities and Quality of service based on network classifier cgroups.

Teaching Assistant   Singapore
National University of Singapore   *Aug. 2023 - May. 2024*
- CS2109 Introduction to Machine Learning, CS3211 Parallel and Concurrent Programming.
- Created assignments, administrated marking of submissions, conducted weekly tutorial sessions and provided consultation to students.
- Implemented automatic cloud-based solution for batched compilation of LaTeX homework papers.

Software Engineer Intern   Singapore
Pinvest Pte. Ltd.   *May - July 2023*
- Proposed and integrated 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 WebGL bindings.
- Incudes `Conq-er`, a Monaco-based IDE.

Order-Matching System | *C++*   *Sep. 2023 – 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 around 18ms.

Scrolly | *PyTorch, Typescript*   *Mar. 2023 – May. 2023*
- AI-driven single-command karaoke video synthesizer.
- Uses Whisper ASR for transcription, Facebook's Demucs for vocal isolation, and Remotion + AWS Lambda for cloud-based video rendering.

PySlidingWindow | *Python*   *Aug. 2022 – Nov. 2022*
- Custom hybrid lossless file transfer over UDP. 15kbps (19% slowdown) at 40% packet corruption and 40% packet loss.

Video Game Modding | *Unity, Blender, GIMP, ActionScript, JSON*   *July 2018 – Present*
- I reverse-engineer, modify and bug-fix old video games in my spare time. Conducted static analysis and decompilation of game engines.
- The Banner Saga (2018 – Present) - 11,000 unique users.
- Journey (2020 – Jan. 2023) - 12,000 unique users.

ACHIEVEMENTS

National Infocomm Competition - *Distinction*	*2016*
Canadian Computing Competition (Senior) - *Distinction*	*2018*
SuperComputing 24 IndySCC - *Team Participation (Ongoing)*	*2024*

TECHNICAL SKILLS

Languages: Java, Python, C\C++, Go, Rust, PostgresSQL, MongoDB, MIPS, Typescript, WebAssembly
Frameworks, Libraries & Tools: React, React Native, Node.js, Git, OpenMP, OpenMPI, eBFP, Kubernetes, ROCm, CUDA, Firebase, GraphQL, NumPy, PyTorch, pwnTools, Matplotlib, Selenium WebDriver

MISCELLANEOUS

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