Wu Xiaoyun

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Professional Experience

Backend Software Engineer Intern - Global LIVE Wallet *TikTok* **Singapore** *12/2024 - 08/2025*

- Optimized core RPC services by rewriting high-QPS handlers (4.4 million peak QPS) from Golang to Rust, achieving 50% compute resource savings and 30% latency reduction; collaborated extensively with the Rust service framework team, conducted thorough staging/production testing and traffic diversion, projecting $300K in annual server cost savings and freeing resources for critical adjacent projects.

- Enhanced on-call efficiency for Wallet services by developing AI-driven analyzers and auto-conclusion features in the Oncall Agent; utilized Golang, LLMs, and vector databases to rank relevant events, correlate error logs with code locations, and suggest root causes, significantly reducing engineers' on-call burden and improving overall development efficiency.

Frontend Software Engineer Intern - Global LIVE Money Platform *TikTok* **Singapore** *05/2024 - 08/2024*

- Boosted developer productivity by doubling asset bundling speed (JS, HTML, CSS) and cutting CI pipeline and production deployment times from 15 to 10 minutes for the Money Platform, achieved through migration from Webpack to Rspack. Drove cross-functional collaboration with Rspack, Rsbuild, and TikTok LIVE Solutions teams.

- Improved Money Platform quality by creating a white-screen test summary page and upgrading the white-screen alarm Lark bot, enhancing debugging with detailed reports including console logs and network requests viewable in Chrome DevTools—eliminating local bug reproduction and accelerating alarm resolution.

- Developed an alarm Lark bot to streamline workflows by aggregating, filtering, and analysing alarms; designed a standardised API for seamless third-party integration and incorporated white-screen alarms into this framework.

Software Engineer Intern *Computing for Voluntary Welfare Organisations* **Singapore** *05/2023 - 08/2023*

- Reduced backend response time by 5 times by porting a Case Management System backend from Ruby on Rails to Golang. Notable features ported include RBAC, Auth, 2FA and Masquerading.

Projects

RustScript

- Developed a statically typed, compiled programming language combining Rust's syntax with the simplicity of TypeScript and Go with core features including primitive data types, higher-order functions, type checking, and concurrency support. The language to compile code into bytecode, akin to Java, followed by execution on a virtual machine.

Expense Tracker

- Developed a cross-platform personal finance management application using Tauri, SolidJS, and SQLite. Implemented comprehensive transaction tracking with recurring payment automation, interactive financial analytics, and data visualization. Built with offline-first architecture featuring local SQLite storage, automated backups, and CSV import/export capabilities. Integrated clipboard-based automation for streamlined transaction entry. Leveraged modern web technologies while maintaining native performance through Rust-powered backend, resulting in a responsive and efficient mobile application.

Education

BSc Computer Science, second major in Statistics *National University of Singapore* **Singapore** *2022 - 2026*

- Focus areas: Programming Language, Parallel Computing

- Interests: compilers

Co-Curricular Activities

President *Computing for Voluntary Welfare Organisations* *09/2023 - 08/2024*

Oversee the recruitment and application process for CVWO's 2024 Summer Internship program. Manage marketing, outreach, and operations for CVWO.

Backend Tech Lead *NUS Students' NUS College Club* *12/2023 - 04/2024*

Designed and implemented Role Based Access Control for the for backend of the NUSC Club website

Skills

- **Programming Languages:** Rust, Go, TypeScript, Python