See Toh Jin Wei

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Work Experience

Software Engineer at *Squarepoint* May 2026 – Present
Software Engineer (Platforms) at *Undisclosed Hedge Fund* Dec 2024 – May 2026

- Engineered a fault-tolerant distributed task system using Redis Queue to orchestrate long-running, idempotent processes across unstable worker nodes, utilizing checkpointing to minimize redundant work.
- Implemented custom heartbeat and "reaper" mechanisms with distributed locking and atomic DB transactions to handle abrupt process failures and ensure system consistency in a high-concurrency environment.
- Architected a firm-wide developer platform to standardize environments and automate codebase maintenance via fleet-wide scans and auto-fixing merge requests.
- Optimized a microservice gateway by implementing latency-minimizing improvements for granular cost control and real-time usage tracking metrics for stakeholder analysis.
- Redesigned and implemented the core key synchronization system managing SSH access for all machines in the firm, eliminating previous flakiness and significantly improving observability.

Software Engineer Intern (Platforms) at *Undisclosed Hedge Fund* May 2024 – Dec 2024

- Enhanced the reliability, throughput and user experience of a distributed job runner crucial to the company's trading and research teams.
  - Designed and built a new highly parallel persistent MPMC queue tailored to the storage engine's use case.
  - Profiled and optimized SQL queries to identify and fix performance bottlenecks, reducing page load times by up to 50%.
  - Worked on several features including automated job rescheduling, improved dashboard pagination and UI.
- Revamped a hackathon service's frontend and code evaluation system, ensuring that it ran smoothly for a competition used concurrently by over 500 participants.

Backend Engineer Intern (Cloud Infrastructure) at *TikTok* Jan 2024 – May 2024

- Contributed to an API gateway that unifies and abstracts different cloud provider interfaces.
  - Added 30+ endpoints and a cronjob for periodically updating a Redis cache, lowering latency.
  - Automated web scraping process enhanced with code generation; eliminating human error, and reducing time taken from days to minutes.
  - Developed a JSON type conversion utility package to support easier translation between various types.
- Built a set of 5 tools to automate workflows for detecting and upgrading outdated cloud instances.

Full-stack Engineer Intern (Risk) at *Cinch* Feb 2023 – Aug 2023

- Developed and maintained 4 backend microservices, integrating them with Samsung Knox Guard and other third-party services (Stripe, Slack, DataCultr) for automated risk management workflows.
- Built and upgraded multiple dashboards that provided the operations and finance teams with real-time visibility into key metrics, replacing a time-consuming manual data analytics process.
- Implemented serverless architecture using AWS Lambda, API Gateway, and EventBridge to orchestrate workflows and handle asynchronous tasks. Configured and managed CI/CD pipelines using GitHub Actions for faster and more reliable deployments.

Undergraduate Tutor at *National University of Singapore*

- Tutored 25 students in Software Engineering (CS2103T) and Data Structures and Algorithms (CS2040S).

Education

National University of Singapore Aug 2021 – Dec 2024

Bachelor of Computing in Computer Science

- Focus Areas in Database Systems, Parallel Computing, and Computer Networking
- Grade Point Average: 4.74 / 5.00

Notable Academic Projects

- CS4224 — Designed schemas and set-up CitusDB and Cassandra clusters to support a highly concurrent transaction workload. One of two projects selected as outstanding examples that were shared to the class.
- CS4221 — Researched and built a SQL check constraints compiler to evaluate performance differences between check constraints and triggers.
- CS3103 — Developed a highly parallel web crawler to identify trends in eSports news articles.

Technical Skills

Languages: Python, Go, TypeScript / JavaScript, SQL (PostgreSQL), Redis, Linux Shells (Bash)
Frameworks: Django, FastAPI, Next.js, Gin
Tools: Git / GitHub / GitLab, Docker, CI/CD tools (GitHub Actions, GitLab CI), general Linux proficiency, Amazon AWS