

Amit Rahman

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WORK AUTHORIZATION

Singapore Citizen; eligible for H-1B1 US visa, no lottery/petition required

EDUCATION

National University of Singapore (NUS)

May 2025

Bachelor of Engineering (Honours) in Computer Engineering

- **NUS Engineering Scholar** - Awarded to 50 engineering students in faculty cohort of 1500

EXPERIENCE

Qube Research & Technologies

Aug 2025 – Present

Software Engineer - Core trading systems

Hong Kong SAR

- Development owner of firm-wide C++ margin service computing real-time initial and variation margin across futures and options portfolios on a global event-driven pub/sub infrastructure
- Designed what-if margining API enabling CRO and trading desks to compose hypothetical portfolios against live positions, supporting capital deployment decisions and broker dispute resolution
- Standardised CMake build system across a multi-service C++ monorepo with presets, modern targets, Python packaging integration; eliminated CI/local config drift and cut Linux builds from 20 to 4 minutes via mold and ccache
- Ported and extended cross-platform integration testing harness across Windows and Linux for deterministic simulation of trading system events, enabling automated regression integration testing at scale

Software Engineer Intern - Core trading systems

May 2025 - Aug 2025

Hong Kong SAR

- Profiled and optimized order router C++ microservice components, improving peak throughput from 60,000 to 140,000 trades/s used by event-based traders on Instinet clients
- Identified heap allocation bottleneck in FIX message processing hot path; designed and integrated a C++17 PMR-wrapped pool allocator with logarithmic bucket sizing, cutting p99 tail latency by 4x
- Introduced lightweight service instrumentation and microbenchmarking suite, enabling continuous telemetry collection

Grasshopper

Sep 2024 – Feb 2025

Software Engineer Intern

Singapore

- Authored framework for declaratively creating custom and performant Wireshark protocol dissectors written in Rust
- Spearheading new developments of a high-performance Rust implementation parser generator for Google's Protobuf, enhancing data serialization efficiency
- Conducting thorough performance benchmarking ensuring Protobuf parsers meets stringent high-frequency trading requirements

Kisi Inc.

Feb 2024 – Aug 2024

Software Engineer I

New York

- Led the transition of 50,000 access control IoT devices to FreeRTOS and a GCP-backed proprietary IoT platform, improving system reliability and scalability
- Developed critical firmware components including a thread-safe networking library and encryption module, resulting in an 80% reduction in networking latency and a 100x improvement in encryption/decryption speed

HydraX

May 2023 – Aug 2023

Software Engineer Intern

Singapore

- Implemented internal cost analysis tools in Kubernetes, improving granularity from cluster to container level, reducing cloud storage costs across various clusters by up to 40%
- Migrated legacy AWS resources & CI/CD to infrastructure-as-code, for private digital exchanges

SKILLS

Languages: Modern C++ 20, C, Rust, Python, Bash

Technologies: Docker, Kubernetes, AWS, GCP, FreeRTOS, CMake, Linux, Perf, Git, Grafana, Vim

Coursework focus areas: Systems Programming, Compilers, Programming Languages