Alvin Tan C++ Software Engineer/Quant Developer

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Profile

C++ Software Engineer with 5 years of professional work experience in trading platforms and game engines. Driven by passion for continuous learning and mastery in the realm of low latency systems and optimization techniques.

Professional Experience

Undisclosed HFT, *Engineer*   present
- Engineered low-latency connectivity solutions for global exchanges using REST/WebSocket/FIX protocols, eliminating unnecessary message processing in critical trading paths
- Setup multi-region trading infrastructure on AWS/AliCloud with direct exchange connectivity
- Optimized C++ build pipeline through CMake modularization, reducing full rebuild times by 50%, accelerating incremental builds, simplifying package management, and integrating sanitizers for debug builds
- Implemented kernel bypass techniques with precise CPU, cache, and NUMA node affinity configurations to eliminate OS scheduler interference, reducing system jitter and achieving more deterministic performance
- Designed real-time system health monitoring dashboard tracking critical latency metrics across the trading pipeline, enabling proactive intervention before potential issues affected trading performance
- Eliminated unnecessary memory allocation and object lifetime issues, enhancing system stability

Blocktech, *Software Engineer*   Jul 2023 – Aug 2024
- Developed a pricing engine for derivatives and spot products in collaboration with Traders and Quants
- Led the development of spot trading and built market connectivity with exchanges like Bybit, Binance, and OKX
- Enforced static analysis tools to improve consistency in the codebase, reducing bugs in the system
- Engineered scripts that simplifies setup and deployment process, reducing time required by over 80%
- Solely managed support for Singapore's infrastructure in collaboration with the Amsterdam team
- Collaborated on the global trading system's redesign, cutting network load by over 50%

Crypto.com, *Quant Developer (C++)*   May 2022 – Jun 2023
- Developed and maintained trading platform specifically in the Delta1 team
- Independently engineered a critical risk management system to safeguard trading operations during anomalies
- Assisted in the migration of algorithmic trading strategies from Python to C++ with Quant Researchers

Zilliqa, *Core Engineer (C++)*   Jun 2021 – May 2022
- Contributed to Zilliqa's core protocol development, optimizing code and collaborating on mainnet maintenance and upgrades
- Resolved critical multithreading issues in Zilliqa's blockchain, enhancing transaction throughput
- Improved internal scripts for setting up local environment

ST Engineering

C++ Software Engineer   Apr 2021 – Jun 2021
- Developed and tested C++ software component for cryptographic hardware, ensuring compliance with relevant security standards and protocols

Cybersecurity Engineer   Mar 2020 – Apr 2021
- Maintained and administered cyber defense lab systems, including hardware and software components, to ensure high availability and system reliability
- Self studied and attained *Offensive Security Certified Professional Certification* 🔗

Axinan, *Software Engineer (Intern)*   May 2019 – Feb 2020
- Built and maintained internal tools that enhanced development productivity, and data processing
- Developed and integrated backend business logic and APIs, including payment processing using Stripe
- Contributed to a secure C++ based multi-party computation project

Education

(BSc) Computer Science in Real-Time Interactive Simulation,   Sep 2016 – Dec 2019
DigiPen Institute of Technology Singapore
- Minor in Mathematics, 2018 Fall/2019 Spring Dean's Honor List, Teaching Assistant
- Developed C# scripting integration/multiple tools into our C++ game engine, winning Game of the Year (2nd)