Zhang Jikun

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Education

National University of Singapore August 2022 – May 2025

Bachelor of Computing, Computer Science (with Honours)

- Graduating with First Class Honours (current GPA).
- Distinction in Algorithms & Theory, Parallel Computing, Database Systems and Programming Languages focus areas.
- Final Year Project: Integrating AI predictors in Sniper Multi-Core Simulator.

Experience

Optiver | Software Engineer Intern May 2024 – August 2024

- Contributed to exchange connectivity applications as part of the core team.
- Built an application to ingest sniffed packet capture data and output it in Apache Parquet format. Used Boost.PFR's structure reflection to generate table columns, significantly improving flexibility over previous hard-coded implementations.
- Developed a real-time application to track order trade ratio for Multi Commodity Exchange and raise alarms when limits are breached, preventing penalties.
- Utilized AMD Onload's ef_vi API to publish UDP unicast packets containing session keys to a local VLAN for decryption of encrypted protocol data by sniffing applications.
- Designed the most profitable trading algorithm in a mock exchange, outperforming peers during a training program.

Open Government Products | Software Engineer Intern May 2023 – August 2023

- Optimized GitHub token selection logic, doubling API rate limit efficiency and simplifying monitoring processes.
- Enhanced the Isomer platform by implementing preview images, last updated timestamps, and placeholder files, improving user experience.

Atom Assets Exchange | Software Engineer Intern January 2022 – July 2022

- Engineered a TCP-based native gateway client with Boost.ASIO for real-time communication with the London Stock Exchange's matching engine.
- Developed a market data collection service of cryptocurrency exchanges and stores it in Apache Parquet format.

Achievements

ICPC Challenge | *Algorithm/Heuristic Design Competition by Huawei* 2023

- Second Prize in Spring Online Challenge and 26th place in the onsite Challenge Championship.
- Designed a cache replacement heuristic that reduced cache misses by 20% compared to standard policies like LRU.

Ready Trader Go | *Algorithmic Trading Competition by Optiver* March 2023

- Reached top 16 by developing an autotrader that consistently generated profits and outperformed competitors.

Terminal | *Strategic AI Programming Competition by Correlation One* August 2022

- Champions in Summer Invitational for designing an AI in tower defense simulations that won all rounds in playoffs.

Competitive Programming 2021 – 2024

- 3rd in 2021 and 2nd in 2022 of Credit Suisse Global Coding Challenge, South-East Asia region.
- 2nd in CodeIt Suisse 2022 Singapore Team Category.
- 15th in Google Farewell round C 2023, 63rd in round D and 16th in round F of Google Kickstart.
- 319th in Meta Hacker Cup 2022, 125th in Quora Programming Challenge 2022 and Finalist in Shopee Code League.

Projects

Minerva Chess Engine | *C/C++, CMake, GoogleTest* May 2023 – August 2023

- Created a chess engine with an estimated 2650 Elo rating, using chess programming techniques like bitboards, transposition tables, quiescence and negamax search. Integrated StockFish NNUE for evaluating leaf nodes in search tree.
- Developed a Telegram bot interface, allowing users to play against the engine in real-time.

SGExams Website | *Javascript, ExpressJS, ReactJS, PostgreSQL, AWS* January 2020 – August 2023

- Led a team of volunteer developers to build www.exams.sg, a platform with over 20,000 users sharing educational resources.

Technical Skills

High Performance Computing: C, C++, Make, CMake, Boost, ASIO, GoogleTest
Web Development: TypeScript, JavaScript, HTML, CSS, NodeJS, ExpressJS, ReactJS, JestJS, Axios, ChakraUI, Flask
Databases: SQL, MySQL, PostgreSQL, SQLite, Sequelize
Data Analytics & Machine Learning: Python, NumPy, Pandas, Matplotlib, Scikit-Learn, PyTorch, TensorFlow
Tools & Misc: Git, Docker, Amazon Web Services, LaTeX