Zhang Jikun

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EDUCATION

National University of Singapore
August 2022 – May 2025

Bachelor of Computing, Computer Science (with Honours)
- GPA: 4.75, First Class Honours.
- Distinction in Competitive Programming, Database Systems, Computer Organisation, Data Structures and Algorithms.

EXPERIENCE

Open Government Products | Software Engineer Intern
May 2023 – August 2023
- Improved selection logic of GitHub tokens for API calls to double efficiency of rate limits and improve ease to monitor.
- Contributed features to Isomer such as preview images, last updated time and placeholder files.
- Drafted a plan to migrate Isomer's git service provider and over 800 hosted site repositories from GitHub to GitLab.

Atom Assets Exchange | Software Engineer Intern
January 2022 – July 2022
- Developed a native gateway client with Boost.ASIO that communicates order book instructions in TCP protocol to London Stock Exchange Group's matching engine service.
- Developed a market data collection service with Boost.Beast that collects market data of other exchanges over websockets and stores it in Apache Parquet format.
- Set up integration tests in GoogleTest framework for native gateway client and matching engine service.
- Contributed to the development of a market maker that quotes at 1 tick spread for digital assets with highest trade volume.

TECHNICAL SKILLS

High Performance: C, C++, Make, CMake, Boost, ASIO, Beast, GoogleTest
Web: Typescript, Javascript, HTML, CSS, NodeJS, ExpressJS, ReactJS, JestJS, Axios, ChakraUI, Flask
Database: SQL, MySQL, PostgreSQL, SQLite, Sequelize
Modeling & Analytics: Python, NumPy, Pandas, Matplotlib, sklearn, Jupyter Notebooks
Tools & Misc: Git, GitHub, Docker, Amazon Web Services, LaTeX

ACHIEVEMENTS

ICPC Challenge | *Algorithm/Heuristic Design Competition by Huawei*
2023
- Won Second Prize in Spring Online Challenge and achieved 26th place in onsite Challenge Championship with the problem Buffer Sharing(and Preallocation) for Multi-tenant Database Environment.
- Designed a caching algorithm that greatly outperforms common cache replacement policies such as Least Recently Used.

Ready Trader Go | *Algorithmic Trading Competition by Optiver*
March 2023
- Reached top 16 by building an autotrader that reliably achieved profits and outperformed other autotraders.

Terminal | *Strategic AI Programming Competition by Correlation One*
August 2022
- Declared champions in Summer Invitational for designing an AI in tower defense simulations that won all rounds in playoffs.

Competitive Programming Competitions
2019 – 2023
- 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.
- Silver Medal in National Olympiad in Informatics 2019.

PROJECTS

Minerva Chess Engine | *C/C++, CMake, GoogleTest*
May 2023 – August 2023
- Developed a chess engine that achieved approximately 2650 elo rating according to STS-rating test suites.
- Implemented chess programming techniques such as bitboards representation, bitwise move generation, quiescence and negamax search, transposition table with Zobrist hashing. Integrated StockFish NNUE for evaluating leaf positions.
- Incorporated telegram bot front-end open for users to play against.
- Submitted under NUS Independent Software Development Project(Orbital) with level of achievement Apollo 11 (advanced).

SGExams Website | *Javascript, ExpressJS, ReactJS, PostgreSQL, AWS*
January 2020 – August 2023
- Served as team lead of a group of volunteering student developers in building the www.exams.sg website.
- Notes repository with more than 20,000 registered users sharing and uploading their notes.
- Platform for the organisation to publicise their programmes and initiatives.

Exam Timetable Generator | *Python, NumPy, Pandas, Matplotlib, Flask*
May 2019 – September 2019
- Utilised genetic algorithm to assign examination invigilation duties for teachers, reducing manual administrative work.
- Deployed the functionalities on a web application with Python Flask.