

# Zhang Jikun

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## EDUCATION

### National University of Singapore

August 2022 – May 2025

*Bachelor of Computing, Computer Science (with Honours)*

- First Class Honours.
- Distinction in Algorithms & Theory, Parallel Computing, Database Systems and Programming Languages focus areas.
- Integrating AI predictors in Sniper Multi-Core Simulator as Final Year Project.

## EXPERIENCE

### Optiver | Software Engineer Intern

May 2024 – August 2024

- C++ developer working on connectivity software.

### 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.
- Implemented 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 execution data in TCP protocol to London Stock Exchange Group's matching engine service.
- Developed a market data collection service with of exchanges over websockets and stores it in Apache Parquet format.
- Set up integration tests with GoogleTest framework for native gateway client and matching engine service.
- Contributed to the development of a market making strategy that quotes at 1 tick spread for high volume digital assets.

## 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

**Data Modeling & Analytics:** Python, NumPy, Pandas, Matplotlib, Scikit-Learn, PyTorch, Tensorflow

**Tools & Misc:** Git, Docker, Amazon Web Services, L<sup>A</sup>T<sub>E</sub>X

## 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

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

### Competitive Programming Competitions

2021 – 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.

## 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 nodes.
- Incorporated telegram bot front-end open for users to play against.

### 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](https://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.