Boming Zhang

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EDUCATION

Shanghai Jiao Tong University (UM-SJTU Joint Institute) Sept. 2018 - Aug. 2022
BEng in Electrical and Computer Engineering (minor in Computer Science, GPA 4.0/4.0) *Shanghai, China*
- Relevant Coursework: Intro to OS (A+), Methods and Tools for Big Data (A+), Data Structures and Algo. (A)
- **2020-2021 Undergraduate Excellent Scholarship**
- **Honors Research Program in the Undergraduate Research Course**
- Outstanding Member of Technology Department (as deputy director) UM-SJTU Joint Institute Student Union

EXPERIENCE

Software Engineer (Intern to Full-Time) Feb. 2022 - Jul. 2022, Nov. 2022 - Present
Naive Systems, advisor Xiao Jia, Kevin Sun *Shanghai, China*
- Take part in a static code analysis product. Implement checkers and test cases for many programming specifications, based on **Clang Static Analyzer, LibASTMatchers, Infer, and Cppcheck**, using C++ and Golang.
- Check the correctness of the product on open source projects. Write scripts to run unit tests during CI.
- Participate in development of a VSCode extension to read results. Implement the i18n feature for checkers.
- File issues with detailed analysis on llvm project and infer with our own test cases.

Research & Development Engineer Intern Jun. 2021 - Feb. 2022
Shanghai Zhimian Weiye Technology *Shanghai, China*
- Build Intell. IoT Firefighting System project. Design the architecture, and work as a full-stack developer.

Research Assistant Mar. 2021 - Feb. 2022
Intelligent Design and Optimization Research Lab, advisor Prof. Mian Li *Shanghai, China*
- **Technical leader** of 2 Undergraduate Innovation Practice Programs. Build a risk control center for Shanghai Jiao Tong University School of Medicine, used by over 10 different management systems and over 100 faculties.
- Develop a cryptocurrency funding rate arbitrage system in async python to get **milli-second transaction time**.

Teaching Assistant (Intro to OS, Intro to Comp.) Sep. 2020 - Dec. 2020, Sep. 2021 - Dec. 2021
Shanghai Jiao Tong University, advisor Prof. Manuel Charlemagne *Shanghai, China*
- Host **exam review sessions** and **weekly lab sessions** for at most 100 students. Grade labs and homework
- Maintain online judge test cases and multiple servers for up to 150 students' usage.

PROJECTS

AList (file list program, 21k stars on Github) | *Golang, GORM, Solid.js* Nov. 2022 - Present
- **3rd main contributor** of the project. Contribute to multiple drivers and fix security vulnerability.
- Implement the search feature. Take active part in the open source community on Github and Telegram.

JOJ 2.0 | *Python3, Golang, PostgreSQL, Redis, LakeFS, Docker, CGroupsV1, React.js* Mar. 2021 - Present
- Develop an online judge system from scratch for various courses. Provide stable, secure, fast, well-documented online judge service with various integrations for **over 1000 students in the institute**.
- Build the judger's sandbox with **namespace and containerization** for isolation and measurement.

Intell. IoT Firefighting System | *Python3, MongoDB, Docker, React.js, React Native* Mar. 2021 - Feb. 2022
- Start from scratch, build a high perf. firefighting platform (Web + App) based on IoT data. Use an algorithm to detect potential hazards and report fire alarms with high accuracy in buildings to **save life and money**.
- Deploy the system on **the fire brigade of Shanghai Province**, connected with **over 7 million IoT devices**.

FOCS student system & related tools | *Python3, Golang, Node.js, Docker, Nginx, Certbot* Nov. 2018 - Present
- Develop new features and maintain the online service and software, including online judge, self-service Git platform, CI platform for **over 300 students from 10 courses each term** to build, test, and grade their codes.
- Build various tools to connect Canvas LMS, Online Judge, and Gitea together. Get **in total 60+ stars** on Github.

TECHNICAL SKILLS

Languages: Python3, Golang, (modern) C++, C (Linux), Typescript, Shell, LaTeX
Frameworks: FastAPI, SQLAlchemy, Gin, Fiber, GORM, Django, React.js, PyTest, NumPy
Developer Tools: Git, Docker, Podman, Github Actions, Drone.io, VSCode, Pre-commit