

# Boming Zhang

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## EDUCATION

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**Shanghai Jiao Tong University (UM-SJTU Joint Institute)** Sept. 2018 - Present  
*Bachelor of Science in Electrical and Computer Engineering* Shanghai, China

- Relevant Coursework: Intro to OS (A+), Methods and Tools for Big Data (A+), Capstone Project (A), Data Structures and Algo. (A), Prog. and Elem. Data Structures (A+), Intro to Comp. (A+), Intro to Engr. (A)
- **2020-2021 Undergraduate Excellent Scholarship**
- Outstanding Member of Technology Department UM-SJTU Joint Institute Student Union

## EXPERIENCE

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**Research & Development Engineer Intern** June 2021 - Present  
*Shanghai Zhimian Weiye Technology Co., Ltd.* Shanghai, China

- Full-stack development engineer, technical leader. Build an intelligent firefighting system based on IoT. Responsible for the system architecture, Web frontend, App frontend, backend, and development. Over 7 million IoT devices are connected to the system from Shanghai Fire Brigade, and the algorithm detect hundreds of potential fire risks.

**Research Assistant** Mar. 2021 - Present  
*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.
- Construct and build the cryptocurrency funding rate arbitrage system for market research, using Python3.

**Teaching Assistant (Intro to OS, Intro to Comp.)** Sept. 2020 - Dec. 2020, Sept. 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. Response to students' questions.
- Develop automatic cast-to-cast grading script. Save 1 hour per week per 50 students.
- Prepare and maintain the server for up to 150 students' usage.

**Deputy Director** Sept. 2018 - July 2019  
*Technology Department UM-SJTU Joint Institute Student Union* Shanghai, China

- Build Danmu multimedia system using PyQt5 for welcoming party, used by over 300 students every year.
- Hold workshops and write posts every month to teach and discuss about technology and development.

## PROJECTS

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**JOJ 2.0** | *Python3, PostgreSQL, Redis, Celery, LakeFS, Docker, CGroupsV1, React.js* Mar. 2021 - Present

- Develop an online judge system from scratch for various courses in the Joint Institute. Provide stable, secure, fast, well-documented online judge service with various integrations for over 1000 students in the institute.
- Act as one of the main contributors for the backend and sandbox side. Develop a set of useful open source tools and frameworks during development. Solve lots of pain points of the old system by careful design and construction.

**Intell. IoT Firefighting System** | *Python3, Go, MongoDB, Docker, React.js, React Native* Mar. 2021 - Present

- Starting from scratch, build a firefighting platform based on data from IoT devices. Using an algorithm to detect potential hazard, and report real fire alarms in buildings to save people's life and money.
- Deploy the platform on the fire brigade of Shanghai province, connected with over 7 million IoT devices.

**FOCS student system & related tools** | *Python3, Cython, Go, Node.js, Docker, Nginx* Nov. 2018 - Present

- Develop new features and maintain the web service and relevant software, including online judge system, self-service Git platform, Continuous Integration platform for in total over 300 students from 10 technical courses each term to build, test, and grade their codes.
- Build many tools to connect Canvas LMS, Online Judge, Gitea together, which are wildly used by students and teaching assistants in Joint Institute to save their time. Get in total 60+ stars on Github.

## TECHNICAL SKILLS

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**Languages:** Python3, (modern) C++, C (Linux), Go, Typescript, MATLAB, C#, Java, HTML, Shell,  $\LaTeX$   
**Frameworks:** FastAPI, Django, Flask, React.js, Selenium, PyTest, Pandas, NumPy, MXNet, Hadoop  
**Developer Tools:** Git, Docker, Jenkins, Github, Gitlab, Drone.io, VSCode, Vim, Pre-commit, Linux Perf  
**Data Management Tools:** PostgreSQL, MySQL, MongoDB, Redis, Drill, SQLite, RabbitMQ