Cai, Yifan

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EDUCATION

University College London — London, UK

M.Sc. in Systems Engineering for the Internet of Things; **In school** — *Sep 2024 – Present*

Relevant Coursework: Modelling and Designing Embedded Systems, Designing Sensor Systems, Estimation and Control, Machine Learning for Robotics

Shanghai Lixin University of Accounting and Finance — Shanghai, China

B.Sc. in Computer Science and Technology; ***GPA: 3.83/4.00 (Rank 1st)*** — *Sep 2020 – Jul 2024*

Relevant Coursework: Advanced Mathematics, Linear Algebra, Probability and Mathematical Statistics, Discrete Mathematics, Computer Organization and System Architecture, Data Structures and Algorithms, Operating Systems, Computer Networks, Database Principles and Applications, Software Engineering, etc.

SKILLS

Languages: C/C++, Java, Python, JavaScript, TypeScript, SQL, MATLAB
Technologies: Flask, Django, Jmeter, MySQL, Git, SVN, Docker, Kubernetes, OpenCV, PyTorch, TensorFlow
Methodologies: DevOps, CI/CD

EXPERIENCE

POIZON — Shanghai, China

Software Test Engineer Intern — *May 2024 – Jul 2024, Full-time*

- Utilized TestNG to develop automated test cases specifically for the control plane of the gateway platform. Successfully wrote over 100 test cases that covered key functionalities and edge scenarios of the gateway system, leading to the identification and reporting of two critical bugs, significantly enhancing system stability and performance, and laying a solid foundation for future iterations.
- Conducted stress testing on the Pulsar system using the JMeter framework to assess concurrency and stability. During the stress tests, various high-concurrency scenarios were simulated to measure the system's performance under heavy load, particularly focusing on the upper limits of its read and write bandwidth. Through quantitative analysis, potential performance bottlenecks were identified, and optimization recommendations were provided, offering vital data support and direction for the middleware team's ongoing work, thereby advancing overall project progress.

InfiniFlow — Shanghai, China

Python Development Intern — *Jan 2024 – Apr 2024, Full-time*

- Utilize the Flask framework to design and implement the backend APIs for the file management system of *RAGFlow*. Creating RESTful endpoints for various functionalities such as uploading, downloading, deleting, and managing files. The API should ensure secure file handling and efficient data retrieval, integrating with cloud storage services as needed.
- Leverage the latest generation of the YOLO (You Only Look Once) algorithm to develop and train a detection model specifically tailored for processing PDF documents. Preparing and annotating datasets, configuring the YOLO architecture for optimal performance, and executing training sessions to improve model accuracy and detection speed.
- Design and complete 1100+ test cases and conduct thorough testing of 40+ *Infinity* interfaces using the Pytest framework. Writing and executing functional tests to identify and resolve bugs, ensuring the robustness and reliability of data transactions. Achieve a test coverage rate close to 90%, validating the functionality and performance of each interface while adhering to best practices in software testing.
- Assist in the development and deployment of a CI system using shell scripts. This involves automating the build and deployment processes, ensuring that code changes are integrated smoothly into the development pipeline. Write scripts to facilitate automated testing, code quality checks, and deployment procedures, thereby enhancing the efficiency and reliability of the software delivery process.

Awards & Achievements

Academic Excellence
- **Shanghai Scholarship for 2021-2022**, recognizing outstanding academic performance.
- **University Outstanding Student Scholarship**, First Prize - Awarded twice for exceptional academic and extracurricular contributions.

Competitive Achievements in Computer Science and Mathematics
- **First Prize**, 15th China College Student Computer Design Competition, 2022 – Exhibited excellence in computer design.
- **Second Prize**, National Mathematics Competition for College Students, 2023 (non-number A class) - Excelled in challenging mathematical concepts.
- **H Award**, American College Student Mathematical Modeling Competition, 2022 - Achieved high recognition in mathematical modeling proficiency.
- **Second Prize**, Shanghai Division, Higher Education Cup National College Students Mathematical Contest in Modeling, 2022.
- **Second Prize**, Group B, C/C++ Programming, 13th Blue Bridge Cup Shanghai Competition, 2022 - Proved superior programming skills in C/C++.
- **Third Prize**, 12th APMCM Asia-Pacific University Students Mathematical Contest in Modeling, 2022 - Showcased outstanding mathematical modeling skills.

Innovation and Creativity
- **Second Prize**, Shanghai College Students' Computer Application Ability Competition, 2022 - Highlighted exceptional computer application skills.
- **Second Prize**, "HuiChuang Youth" Shanghai College Students' Cultural Creative Works Exhibition, 2022 - Recognized for creative cultural contributions.
- **Silver Award**, China International "Internet Plus" College Student Innovation and Entrepreneurship Competition, Shanghai, 2023 - Excelled in innovation and entrepreneurship.

Recognition for Leadership and Innovation
- Named **Outstanding Students**, 2020-2021 - For leadership and academic excellence.
- Awarded as an **Advanced Individual in Innovation and Entrepreneurship**, 2021-2022 - Acknowledged for innovative contributions and entrepreneurial spirit.

Projects & Research

Sign Language Translation Project | *Frontend* | *Backend* | *YOLO* | *NanoDet*   *Project Leader*
- Led the project to develop a sign language recognition model.
- Employed YOLO and NanoDet models for sign language detection and translation.
- Implement full-stack development for both front-end and back-end.

Document Knowledge Graph Project   *Research and Development Team Member*
- Participated in the research and development team, focusing on the creation of algorithms for entity and triplet similarity calculations.
- Utilized Tornado and Flask frameworks for the development of algorithm interface services.

Intelligent Audit Project   *Curriculum Developer and Algorithm Specialist*
- Compiled teaching materials for discrete mathematics with a focus on predicate logic.
- Developed a similarity algorithm for the enhancement of the auditing process.