TIANLEI SHI

+44 0753 692 6746 • tianlei.shi.22@ucl.ac.uk • stanley-yi.github.io • linkedin.com/in/tianlei-shi/

EDUCATION

MSc Scientific and Data Intensive Computing, University College London   2022 – 2023
Grade: Distinction
Related Modules: High-Performance Computing, Data-driven Modelling of Financial Markets, Numerical Methods
Impact: Served as Student Representative, drove curriculum improvements and boosted course satisfaction by **40.1%**

BSc Information and Computing Science, University of Liverpool   2018 – 2022
Grade: First Class
Related Modules: Advanced OO Programming, Computer Systems Security, Computer Networking, Computer Graphics
Achievements: Ranked in the **top 5%** of my major, won **3 scholarships** (including the Academic Achievement Award)

WORK EXPERIENCE

Backend Developer, NetMind.AI, *London UK*   Jan 2024 – Present
Vector Database, AWS, Data Pipelines, OpenAI APIs, Prompt Engineering, PyTest

- Responsible for algorithm development of AI tutoring app Pai, including developing problem search features, constructing data pipelines, and implementing step-by-step instructions. This product has generated over **10,000 RMB** in monthly revenue during its initial launch phase.
- Developed infrastructure for the open-source AI tools community, NetMind XYZ, boosting the company's visibility and influence. Contributed auxiliary modules to AI agents with long-term & short-term memory, image recall, and automatic prompt tuning, enhancing agent capabilities by **33%**.

Full-stack Software Engineer, Cash Converters, *London UK*   May 2023 – Dec 2023
AWS, TypeScript (React), MySQL, NoSQL, RESTful APIs, NodeJS, Tailwind CSS, Nginx

- Responsible for developing a second-hand products transaction website. Designed and implemented database structures and RESTful APIs, along with front-end development.
- Deployed the web application on AWS, utilizing EC2, RDS, and S3 for infrastructure support. Designed the website architecture and configured Nginx for load balancing.

Computer Vision Algorithm Intern, Chinese Academy of Sciences, *Suzhou China*   June 2021 – Nov 2021
Computer Vision, PyTorch, Knowledge Graph (Neo4j), Recommendation System, Web Crawler

- Provided algorithm expertise for an automatic restaurant settlement system. Processed daily images of the restaurant's dishes and trained and optimized the model to make the average detection accuracy **99.7%**.
- Constructed a knowledge graph contains more than **2000 dishes** along with their ingredients and nutritional compositions. Devised a nutrition-based food recommendation system anchored on the knowledge graph.

Research Assistant, Xi'an Jiaotong-Liverpool University, *Suzhou China*   Sept 2020 – June 2022
Python, C++, TensorFlow, Algorithm Pruning and Optimization, Leadership

- Led research in semantic segmentation and area estimation for blue-green algae detection. Proposed deep learning, binocular, and monocular camera methods for algae detection and risk assessment.
- Developed and optimized aquatic environment object detection algorithms, enhancing obstacle avoidance for unmanned surface vehicles, and securing **6 awards**.

EXTRA-CURRICULAR ACTIVITIES & PROJECTS

Project - Information Retrieval System   Feb 2023

- Developed an information retrieval system to retrieve information from **0.2 million** documents. Implemented 4 Natural Language Processing algorithms, including **TF-IDF**, **BM25**, and **query likelihood language models**.
- Leveraged **high-performance computing** methods and sparse matrix to improve the query speed by **57.14%**.

Project - VR Karaoke Game   Feb 2021

- Implemented singing features in Unity3D with C#, enhanced audio quality through noise reduction and reverberation.
- Collaborated in an Agile Scrum team, maintaining PBIs and sprints to ensure project milestones. Earned a peer review score of **4.8/5**, reflecting strong teamwork and communication skills.

SKILLS & INTERESTS

Programming Languages: Java, PHP, HTML, CSS, JavaScript, C/C++, Shell, MongoDB
Frameworks & Tools: Firebase, Docker, Django, Linux, Git, Automatic Testing, CI/CD, Sphinx Framework
Interests: studying violin for 16 years, and volunteer service for more than 50 hours (obtained a volunteer certificate)