

TIANLEI SHI

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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

- Deployed and managed Milvus clusters on AWS; Developed a Python package to integrate Milvus with various databases, streamlining project development and reducing the learning curve for colleagues.
- Crafted a pivotal memory module for AI agents, featuring integrated long-term & short-term memory, image recall, and tree-structured memory, enhancing the company's agents capabilities by **33%**.
- Developed problem search features for an AI tutoring app by constructing problem and image data pipelines, and achieved solution generation and step-by-step instruction.

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

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)