



# Qingshan Hou

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## Education

Tongji University

Sep.2022 – Jun.2026

Computer Science and Technology Undergraduate

Shanghai, China

- GPA: 4.44/5.0 | 89.42/100 | 3.88/4.0( Evaluated by World Education Services WES )
  - Coursework: Linear Algebra · Assembly Language Programming · Software Engineering · Artificial Intelligence · Data Structures · Algorithms · Object-Oriented Programming · Operating Systems · Principles of Computer Organization · Computer Networks
  - Class Monitor: Class of 2022, Computer Science and Technology 2nd Cohort

National University of Singapore

Aug.2025 – Dec.2025

Dept of Computer Science Exchange Student

## Singapore

Doing course work(CS4218 Software Testing) and AI for Science research in Blue Whale Lab

## Internship

Carl Zeiss (Shanghai) Co., Ltd.

Dec 2025 – Present

Deep Learning Intern

Shanghai, China

- Contributing to a battery defect detection project using advanced deep learning and computer vision techniques.
  - Assisting in data acquisition and annotation, including processing and cleaning large-scale industrial datasets.
  - Training, optimizing, and evaluating deep learning models for automated defect detection.
  - Analyzing experiment results and proposing improvements for model robustness and deployment readiness.

Heywhale Technology Co., Ltd.

Jul. 2025 – Sep. 2025

## Research Intern

Shanghai, China

- Participated in the “Large Model + X” Summer Camp focused on artificial intelligence and large-scale model development.
  - Completed a structured curriculum covering Python, Numpy, Pandas, machine learning, deep learning, and NLP fundamentals.

- Conducted applied research and hands-on experiments in LoRA fine-tuning, RAG, and model deployment on real datasets.
- Gained practical experience in end-to-end AI model optimization, evaluation, and deployment under industry supervision.

### Hundsun Technologies Inc.

Jul.2024 – Aug.2024

FinTech Intern

Hangzhou, China

- Led a team of 6 members as product manager to design and develop [a conceptual fund trading system](#).
- Gained hands-on experience in financial technology, including subscription, redemption, and clearing processes, as well as full-stack development using Vue.js for the front-end, Spring Boot for the back-end, and MySQL for database management.
- Certified Junior FinTech Engineer, Hundsun Technologies Inc.
- Recognized with the "Best Quality Award" for leading the development of the fund trading system.

## Research Experience

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### Cross-View Visual Place Recognition with AlphaEarth

Oct.2025 – Present

Computer Vision    Cross-View Geo-Localization

Tongji University

- Developing a cross-view visual place recognition framework that leverages DeepMind's AlphaEarth, a global 10m-resolution multimodal satellite embedding model.
- Designing a decoder network to perform place recognition directly in the AlphaEarth feature space, enabling robust location retrieval under large viewpoint and appearance changes.
- Building an alignment encoder that maps ground-level optical images into the AlphaEarth latent space, supporting cross-view matching between ground imagery and satellite representations.
- Evaluating model robustness across diverse regions and viewpoints, providing insights for global-scale geo-localization and multi-view mapping applications.

### Research Assistant: Multi-Agent Spatio-temporal Coordination

Feb.2025 – Jul.2025

Embodied AI    Multi-Agent Systems

Tongji University

- Conducting research on multi-agent spatiotemporal coordination problems in the context of embodied intelligence, focusing on collaborative perception, task planning, and motion synchronization.
- Exploring strategies for communication and policy learning among agents to enable robust cooperation for perception and prediction.
- The project also aims to enhance the generalization capability of embodied agents across diverse domestic scenarios(such as autonomous driving).

## ✍ Project Experience

### BiLSTM-CRF Chinese Word Segmentation System [🔗](#)

Deep Learning Word Segmentation

Feb.2025 – Dec.2025

Tongji University

- Implemented a Chinese word segmentation system based on a BiLSTM-CRF architecture with multi-source embeddings (pretrained character embeddings, character-type embeddings, and bigram embeddings).
- Trained and evaluated on MSRA, PKU and Souhu corpora, achieving an F1 score of 0.91+ on the MSRA test set.
- Implemented a custom CRF layer with BMES illegal-transition constraints, training utilities including early stopping, LR scheduler, gradient clipping, and evaluation pipeline (span-based matching, visualization of training loss).

### ExCourt - Badminton Court Exchange System [🔗](#)

Software Engineering Mini App

Aug.2024 – Jun.2025

Tongji University

- Designed and developed a WeChat Mini Program to facilitate court exchange and team formation for badminton players.
- Implemented key features such as team formation requests, court exchanging, and a chat module for user interaction.
- Improved convenience for school badminton players and enhanced their overall experience

### Intelligent Car Based Online Calibration System

Apr.2024 – Jun.2024

Computer Vision Internet of Vehicles

Tongji University

- Developed an online calibration system using an intelligent car, replacing traditional static object-based calibration. This improved efficiency and reduced labor requirements.
- Utilized YOLO v9 for computer vision-based calibration and built a basic model of the intelligent car for autonomous movement and calibration.
- Enhanced calibration efficiency by automating the process with a self-moving car and reduced manual intervention and improved system accuracy.
- Won the Silver Medal at the 2024 China International College Students Innovation Competition (Tongji University Internal Competition).

## 🏆 Honors and Awards

- Tongji University Undergraduate Excellence Scholarship [🔗](#) Nov.2023
- Certified Junior FinTech Engineer, Hunsun Technologies Inc. [🔗](#) Aug.2024
- Excellence Award: 2025 Corpus & Data Intelligence Creative Competition (Embodied Intelligence Track) [🔗](#) Jul.2025
- First Prize: 35th Shanghai Youth Science&Technology Innovation Competition [🔗](#) Apr.2020

- « Large Model + X General Education Summer Camp » Artificial Intelligence and Large Model Development  Sep.2021
- Silver Award: 2024 China International College Students Innovation Competition (Tongji University Internal Competition)  Jun.2024
- President,Jiading Campus Basketball Association Jun.2024 - Jun.2025

## Skills

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- Programming Language: C++ Python JavaScript
- English Proficiency
  - IELTS: Overall band 7.5 ( all sections are equal or above 7.0 )
  - GRE: Verbal 157 Quantitative 170 Writing 4.0
  - CET4: 634
  - CET6: 584

## Others

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- Activities:
  - UFI Filters Group/Sofima Automotive Filter Asia-Pacific Headquarters Plant Tour 
  - Performing a cappella at the Earth Hour event. 
  - Mercedes-Benz 2025 Shanghai International Auto Show Youth Talent Day 
- Interests:
  - Certified National Level-3 Basketball Referee
  - Music band lead singer 
  - A cappella Tenor