Haoran Wang

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Education

Western University — London, Canada
Master of Science in Computer Science; **Grade: 91/100** — *Sep 2024 – Aug 2025 (Expected)*

Soochow University — Suzhou, China
Bachelor in Network and New Media; **GPA: 3.9/4.0** (**Ranking: 1/92**) — *Sep 2020 – Jun 2024*
Minor in Software Engineering; — *Sep 2022 – Jun 2024*
Micro-Major Project in Intelligent Computing and Frontier Applications; **GPA: 3.8/4.0** — *Sep 2022 – Jun 2023*

Academic Distinction:
Mitacs Globalink Research Internship Award (Top **200** Students in China) — *May 2023*
Visiting Undergraduate Student funded by China Scholarship Council (Top **200** Students in China) — *May 2023*
First-class Scholarship for Academic Excellence (Top **9**%) — *2022, 2021*

Research Experience

LoRA-Tuned Socratic LLM for Automated Code Review — NUS, Suzhou Research Institute
Research Assistant — *March 2024 – Aug 2024*

- Designed and implemented a Socratic-style AI system to support student code learning, enabling large language models to generate guided question-answer dialogues.
- Applied LoRA (Low-Rank Adaptation) to fine-tune mainstream open-source LLMs (e.g., LLaMA, Qwen) for educational dialogue generation.
- Created 200+ high-quality question-answer pairs by leveraging Python-based web scraping and AI-enhanced data augmentation techniques.
- Developed a web-based platform integrating the fine-tuned LLMs, significantly improving code evaluation efficiency and reducing assessment time by 50%.

Fake News Detection through Multi-modal Similarity — Suzhou, China
Undergraduate Research Assistant — *Sep 2023 – June 2024*

- Worked in close partnership with Assis.Prof. Guobiao Zhang on developing a novel multimodal fake news detection framework using fine-grained text-image semantic consistency analysis
- Designed and implemented a detection model integrating BERT for text representation, Faster R-CNN with an attention mechanism for extracting fine-grained visual features, and CLIP for global image feature extraction
- Performed case-based analysis to validate the model's interpretability, particularly in identifying inconsistencies between news text and accompanying images.

Improved Simulated Viewing of Holographic Imagery — St. John, Canada
Summer Research Internship — *May 2023 – Aug 2023*

- Collaborated with Assis.Prof. Matthew Hamilton on the Light Field project, supported by the Mitacs Globalink Research Internship scholarship.
- Employed CUDA parallel computing to integrate a Gaussian Blur-based model into a light field display simulation, enhancing its ability to accurately replicate the light leakage phenomenon in physical 3D display.
- Developed and implemented a standardized testing procedure to enhance the efficiency and repeatability of assessments for light field images and compression designs.
- Demonstrated expertise in enhancing the graphical user interface (GUI) by skillfully implementing Dear ImGui in C++, thereby significantly improving system functionality and user interactivity.

Study of COVID-19 Scientific Research Under the Parallel Model — Suzhou, China
Undergraduate Research Assistant — *March 2021 – Feb 2022*

- Worked with Assoc.Prof. Xi Cheng on the National Key project "Exploring Evidence-Based Decision-Making Mechanisms through the Confluence of Policy and Scientific Processes", sponsored by The National Social Science Fund of China.
- Took an active role in the acquisition, curation, and meticulous pre-processing of research datasets from Web of Science and PubMed, ensuring data accuracy and comprehensiveness.
- Utilized advanced analytical tools like VosViewer to conduct in-depth knowledge graph analysis, demonstrating the existence of a parallel model of COVID-19 scientific research.

Awards & Achievements

2023 International Mathematical Contest in Modeling: Finalist **(Top *1%*)** in Interdisciplinary Contest in Modeling;

2023 "Huashu Cup" International University Student Mathematical Modeling Competition: Grand Prize **(Top *5%*)** in the National level;

Publications

Research Article

- Cheng, X., Wang, H., Tang, L., Jiang, W., Zhou, M., Wang, G. (2024). Open peer review correlates with altmetrics but not with citations: Evidence from Nature Communications and PLoS One. Journal of Informetrics, 18(3), 101540. https://doi.org/10.1016/j.joi.2024.101540
- Cheng, X., Chen, Q., Tang, L., Wu, Y., Wang, H., Wang, G. (2022). Rapid Response in an Uncertain Environment: Study of COVID-19 Scientific Research Under the Parallel Model. Risk Management and Healthcare Policy, 15, 339–349. https://doi.org/10.2147/RMHP.S351261

Academic Conference

- "Improved Simulated Viewing of Holographic Imagery", The 32nd Annual Newfoundland Electrical and Computer Engineering Conference, Canada, Nov 2023
- "Research on the Impact of Scientific Publications under Open Science", The International Association for Media and Communication Research (Suzhou Pre-conference), Soochow University, Suzhou, China, July 2022
- "Research on the Impact of Open Peer-reviewed Research Articles: a Case Study of Nature Communications", 2022 Chinese Sociological Association Conference, China, July 2022

Work Experience

Teaching Assistant in CS1027 — Western University
Teaching Assistant — *Jan 2025 – Apr 2025*

- Led weekly labs and office hours for over 100 students, guiding them through advanced Java concepts including object-oriented programming (OOP), recursion, algorithm analysis, and core data structures such as linked lists, stacks, and queues.
- Provided individual debugging support and project feedback, helping students improve modular design, exception handling, and memory-efficient implementations.
- Collaborated with the lecturer to develop rubrics and streamline grading workflows, contributing to improved feedback clarity and accuracy.

BOSCH, Suzhou Branch — Suzhou, China
Data Security Officer — *Sep 2023 – Feb 2024*

- Designed and developed custom Selenium tools to streamline the report generation process, enhancing the efficiency of regular data management and ensuring adherence to software criteria, resulting in a time savings of 8 hours per week department-wide.
- Built a full-stack game web platform to promote data security awareness, using React (JS) for the frontend and Flask (Python) for the backend. Integrated PostgreSQL for data persistence, and deployed the application on AWS using EC2 and S3 to ensure scalability and accessibility.

Bank of Communications, Yangzhou Branch — Yangzhou, China
Data Analyst — *July 2022 – Aug 2022*

- Performed in-depth quantitative and qualitative research to assess customer preferences, producing weekly reports delivering actionable insights for optimizing the strategic positioning of financial product promotions.
- Leveraged BERT model in Python to enhance predictive accuracy for user demand in the financial sector, achieving a notable 10% improvement compared to previous prediction methods.
- Partnered closely with the Marketing team to integrate data-driven suggestions into the targeting strategy for financial product advertisements, yielding tangible gains in customer engagement and conversion rates.

Skills

Programming Languages: Python, C++, Java, JavaScript, SQL

Frameworks & Libraries: Flask, React, PyTorch, CUDA, LoRA, LLM fine-tuning

Tools & Platforms: Unity, Unreal Engine 4/5, Git, Docker, AWS

Languages: English (IELTS 7.5), Mandarine (Native)

Sports: Core member of Soochow University Badminton team; Ranked 16th of 18th Jiangsu Province Swimming Game