

# Haojin Wang

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## Education

University of Illinois Urbana-Champaign, Master of Computer Science (Expected)	Sept 2025 – Dec 2026
Tongji University, B.Eng in Computer Science and Technology	Sept 2021 – July 2025
National University of Singapore, Exchange Student	Jan 2024 – May 2024

## Research Interest

My primary research interest generally lies in learning for **Natural Language Processing (NLP)**, encompassing both applied and fundamental research. Recently, I have been focusing on model interpretability through inference-time algorithms for Large Language Models (LLMs) and the design of self-evolving agent frameworks. I aim to contribute to the development of **safer** and **more transparent** AI systems.

## Experience

**Research Assistant**, University of Waterloo – Waterloo, ON (*Onsite*) Sept 2024 – Feb 2025

Advisor: Prof. Freda Shi, David R. Cheriton School of Computer Science, University of Waterloo  
Prof. Zining Zhu, Stevens Institute of Technology

- Conducted research on next token distribution, prefix tuning and gradient-based adversarial attacks in NLP
- First Author in the project of Distribution Prompting, which provides insights into the expressiveness of Language Models and the challenges in using them as probability distribution proposers

## Publications

[1] **Distribution Prompting: Understanding the Expressivity of Language Models Through the Next-Token Distributions They Can Produce** [arXiv]

Haojin Wang, Zining Zhu, Freda Shi

*Preprint.*

[2] **MedFrameQA: A Multi-Image Medical VQA Benchmark for Clinical Reasoning** [arXiv] [project] [data]

Suhao Yu\*, Haojin Wang\*, Juncheng Wu\*, Cihang Xie, Yuyin Zhou

*Preprint.*

## Projects

**A Simple Object Code Generator** Feb 2024 - May 2024

- Course project for Compiler Principles, developed a simple compiler that can compile C-like programs to object codes
- Tools Used: Python

**Tiny-OS: A UNIX-like File System** Feb 2024 - May 2024

- A simulation of a UNIX-like file system, which includes components for managing files, directories and caching
- Tools Used: C, C++

**Sarcasm Detection in Headlines based on BERT** Aug 2023 - Sept 2023

- Led the team to migrate the training process from PyTorch to MindSpore, and obtained the second prize in innovation.
- Tools Used: Python 3, PyTorch, MindSpore

**License Plate Detection and Recognition at Large Angles** Jan 2023 - Dec 2023

- Main Code Writer in the project, which is a National Training Program of Innovation and Entrepreneurship for Undergraduates
- Tools Used: Python 3, PyTorch, TensorFlow

## Extracurricular Activities

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**Team Leader** in China Collegiate Computing Contest: 2023 Mobile Application Innovation Contest Mar 2023 - June 2023

- Served as the HCI designer and Idea Provider for the team work
- Obtained the second prize in East China

**Team Member** in 9th China Undergraduate Statistical Modeling Competition Mar 2023 - Aug 2023

- Served as the main code writer of the contest
- Obtained second prize

## Skills

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**Natural Languages:** Mandarin (native), English (Proficient); TOEFL 109 (R:30/L:28/S:23/W:28); GRE 328 (Verbal: 158/Quantitative: 170/Analytical Writing: 3.5)

**Programming Languages:**

- Proficient: C, C++, Python (2/3), MATLAB
- Capable: JavaScript, HTML/CSS, Bash, SQL

**Tools/Framework:** Slurm, PyTorch, Git,  $\text{\LaTeX}$ , Visual Studio, ssh, React, Vue 3

**Hobbies:** Fitness, Music, Movie

## Awards

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- **Excellent Student Scholarship Second Prize:** 3000rmb (about 413.45 USD) Dec 2023
- **National Scholarship** (as the top 5 student in the department): 8000rmb (about 1102.54 USD) July 2022