Haoran Zhao

hjzhao@uw.edu

hrjzhao.github.io

Education

University of Washington   2024 – Present
Master of Science in Computational Linguistics | GPA 3.89

Drexel University   2021 – 2024
Bachelor of Science in Data Science, Minor in Linguistics | GPA 3.85

Lanzhou University   2019 – 2023
Bachelor of Science in Computer Science | GPA 3.97

Research Keywords

Pragmatics, Communication, Social Cognition, AI

Research Experience

Computational Summer school on Modeling Social and Collective Behavior (COSMOS)   Sep, 2025 -
Riken Center for Brain Sciences, Tokyo, Japan

Brains, Minds, & Machines Summer School , MIT   August 2025
- *Working with Dr. Colin Conwell*
- Compare communication patterns in humans and machines through a Tangram game using representation learning methods (**NeurIPS 2025 workshop**)

Social Interaction Lab, Stanford University   May 2024 - Present
- *Research Assistant, advised by Prof. Robert Hawkins*
- Study the polite language production capabilities of humans and LLMs in social contexts (**CogSci 2025, EMNLP 2025**)

Computational Minds and Machines Lab, University of Washington   October 2024 - Present
- *Research Assistant, advised by Prof. Max Kleiman-Weiner*
- Model language use in different social relationships, collaborating with Prof. Robert Hawkins

Computation and Cognition Lab, Stanford University   September 2023 - March 2024
- *Research Assistant, advised by Prof. Noah Goodman*
- Examine LLM's non-literal number understanding (hyperbole & pragmatic halo) abilities (**CogSci 2025**)

CODED Lab, Drexel University   September 2022 - June 2024
- *Research Assistant, advised by Prof. Jake Williams*
- Improve training efficiency in terms of compute and time for neural networks and LMs

Publications

* Equal Contribution

Proceedings Papers

[1] **Zhao, H.**, Hawkins, R.D. (2025). Comparing human and LLM politeness strategies in free production. *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP).*

[2] **Zhao, H.**, Hawkins, R.D. (2025). Polite Speech Generation in Humans and Language Models. *Proceedings of the 47th Annual Conference of the Cognitive Science Society (CogSci).*

[3] Tsvilodub, P.*, Gandhi, K.*, **Zhao, H.***, Fränken, J.-P., Franke, M., Goodman, N.D. (2025). Non-literal Understanding of Number Words by Language Models. *Proceedings of the 47th Annual Conference of the Cognitive Science Society (CogSci).*

Workshop Papers

[4] **Zhao, H.**, Conwell, C. (2025). Comparing Human & Machine Communication Patterns through a Tangram Game. *NeurIPS workshop on Data on the Brain & Mind.*

[5] **Zhao, H.** (2024). Large Language Models are Not Inverse Thinkers Quite yet. *ICML Workshop on LLMs and Cognition.*

Other Publications

[6] Perko, A., **Zhao, H.**, Wotawa, F. (2023). Optimizing Named Entity Recognition for Improving Logical Formulae Abstraction from Technical Requirements Documents. *The 10th International Conference on Dependable Systems and Their Applications (DSA-2023).*

[7] Fang, X., Kalinowski, A., **Zhao, H.**, You, Z., Zhang, Z., An, Y. (2022). Prompt Design and Answer Processing for Knowledge Base Construction from Pre-trained Language Models (KBC-LM). *Challenge @ 21st International Semantic Web Conference (ISWC 2022) CEUR Workshop Proceedings.*

Preprints

[8] Long, P., Alice, G.,... **Zhao, H.**, ... et al. (2025). Humanity's last exam, arXiv preprint arXiv: 2501.14249.

[9] **Zhao, H.**, & Williams, J.R. (2023). Bit Cipher–A Simple yet Powerful Word Representation System that Integrates Efficiently with Language Models. *arXiv preprint arXiv:2311.11012.*

[10] Williams, J.R., & **Zhao, H.** (2023). Explicit Foundation Model Optimization with Self-Attentive Feed-Forward Neural Units. *arXiv preprint arXiv:2311.07510.* 2023.

[11] Williams, J.R., & **Zhao, H.** (2023). Reducing the Need for Backpropagation and Discovering Better Optima With Explicit Optimizations of Neural Networks. *arXiv preprint arXiv:2311.07498.* 2023.

Honors and Awards

Center for Brain, Minds, and Machines Summer School Fellow, MIT	2025
CRA Outstanding Undergraduate Researcher Award – Honorable Mention	2024
Steinbright Partners Program Award, Drexel University ($6,000)	2023
Undergraduate Research Mini-Grant, Drexel University ($2,000)	2023
A. J. Drexel Scholarship, Drexel University	2021–2024
Second-class scholarship for outstanding students, Lanzhou University	Sep 2021
Innovation And Entrepreneurship Scholarship, Lanzhou University	2020–2021

Teaching Experience

Teaching Assistant, Deep learning for Natural Language Processing (DSCI 691)   Spring 2024
Department of Information Science, Drexel University

Professional Services

Conference and Workshop reviewing

NeurIPS – Efficient Natural Language and Speech Processing (ENLSP) workshop 2023, 2024
NAACL ARR 2024
ICML – LLMs and Cognition Workshop 2024
NeurIPS – Behavioral Machine Learning Workshop 2024
Annual Conference of the Cognitive Science Society 2025
ICLR – Re-Align Workshop 2025
NeurIPS – Data on the Brain & Mind workshop 2025

Skills

Coding: Python, R, memo, HTML, CSS, JavaScript, SQL, Git, PyTorch, HuggingFace Transformers, Scikit-Learn, spaCy, NLTK, Numpy, Pandas

Languages: Mandarin (native), English (proficient), Spanish & Japanese (elementary)