Haoran Zhao

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Education

University of Washington 2024 – Present
Master of Science in Computational Linguistics | GPA 3.74

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 Interests

Computational Cognitive Science, Social Cognition, Language, Artificial Intelligence

Academic Experience

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

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

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

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

Publications

* Equal Contribution

Preprints & In submission

[1] **Zhao, H.**, Hawkins, R.D. (*submitted to CogSci 2025*). Polite Speech Generation in Humans and Language Models.

[2] Tsvilodub, P.*, Gandhi, K.*, **Zhao, H.***, Fränken, J.-P., Franke, M., Goodman, N.D. (*submitted to CogSci 2025*). Non-literal Understanding of Number Words by Language Models. *arXiv preprint arXiv:22502.06204.*

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

[4] **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.*

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

[6] 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.

Workshop Papers

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

Other Publications

[7] 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).*

[8] 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.*

Honors and Awards

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
Drexel University Department of Information Science

Professional Services

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

Skills

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

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