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ZHU LIU

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EDUCATION

- | | | |
|---|------------------------|-------------------------------|
| Tsinghua University | Beijing, China | Aug 2022 – Present |
| <ul style="list-style-type: none">PhD in Computational Linguistics (at School of Humanities), supervised by Ying Liu and cosupervised by Maosong SunResearch Topics: Semantic Map Models, Computational Lexical Semantics, explainable LLMsGPA: 3.93/4.0, 2023 first-level scholarship | | |
| Southern University of Science and Technology | Shenzhen, China | Aug 2019 – June 2022 |
| <ul style="list-style-type: none">Master in Computer Science and Technology, supervised by Feng ZhengResearch Topics: Video Captioning, Conditional Textual Generation, Variational-based generative modelsThesis: Towards Human-like Diverse Video Captioning via a Latent Generative ModelGPA: 3.67/4.0 | | |
| Dalian University of Technology | Dalian, China | Sept. 2015 – June 2019 |
| <ul style="list-style-type: none">Bachelor in Digital Media Technology (Software Engineering) | | |

PUBLICATIONS

- Zhu Liu**, Zhen Hu, Lei Dai, Ying Liu XISM: an eXploratory and Interactive Graph Tool to Visualize and Evaluate Semantic Map Models. arxiv:2507.04070, 2025. **Under review**.
- Zhu Liu**, Ying Liu, Kangyang Luo, Cunliang Kong, and Maosong Sun. From the New World of Word Embeddings: A Comparative Study of Small-World Lexico-Semantic Networks in LLMs[J]. arxiv:2502.11380, 2025. **Under review**.
- Kangyang Luo, Yuzhuo Bai, Cheng Gao, Shuzheng Si, Yingli Shen, **Zhu Liu**, Zhitong Wang, Cunliang Kong, Wenhao Li, Yufei Huang, Ye Tian, Xuantang Xiong, Lei Han, Maosong Sun. GLTW: Joint Improved Graph Transformer and LLM via Three-Word Language for Knowledge Graph Completion. **ACL 2025 Findings**.
- Zhu Liu**, Cunliang Kong, Ying Liu, and Maosong Sun. A Top-down Graph-based Tool for Modeling Classical Semantic Maps: A Crosslinguistic Case Study of Supplementary Adverbs. **NAACL'25**, p. 4567–4576, Albuquerque, New Mexico.
- Zhu Liu** Evaluating Distributed Representations for Multi-Level Lexical Semantics: A Research Proposal[J]. arXiv preprint arXiv:2406.00751, 2024.
- Zhu Liu**, Zhen Hu, Ying Liu CoMeDi Shared Task: Models as Annotators in Lexical Semantics Disagreements. CoMeDi workshop in **COLING 2025**, Abu Dhabi, UAE.
- Zhu Liu**, Cunliang Kong, Ying Liu, and Maosong Sun. Fantastic Semantics and Where to Find Them: Investigating Which Layers of Generative LLMs Reflect Lexical Semantics. In Findings of **ACL 2024**, pages 14551–14558, Bangkok, Thailand.
- Zhu Liu** and Ying Liu. Ambiguity Meets Uncertainty: Investigating Uncertainty Estimation for Word Sense Disambiguation. In Findings of **ACL 2023**, pages 3963–3977, Toronto, Canada.
- Liu, Z.**, Wang, T., Zhang, J., Zheng, F., Jiang, W., Lu, K. (2022). Show, Tell and Rephrase: Diverse Video Captioning via Two-Stage Progressive Training. **IEEE Transactions on Multimedia**.

PROJECTS

- Exploratory and interactive graph tool for semantic map models (SMMs):** A web tool to build, visualize, and evaluate SMMs from user data, enabling large-scale, human-in-the-loop analysis for language typologists.
- Interactive and automatic mural captioning:** An application to provide local and comprehensive descriptions of a mural, while using generative AI to interact with the audience. (Outstanding Creative Paper Award in CDH 2023)

EXPERIENCES

Internship Experience

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| Research Intern at THUNLP, supervised by Prof. Maosong Sun | Sept. 2023 – Present |
| Visiting Student at Sapienza NLP Group, supervised by Prof. Roberto Navigli | Mar. 2025 – Aug. 2025 |

Academic Service

- Conference Reviewer: EMNLP 2023, Rep4NLP 2024 (ACL'24), CoMeDi with COLING 2025, NAACL SRW 2025, ACL'25
- Co-chair of Student Research Workshop in ACL 2025
- Volunteer in COLING 2025, NAACL 2025

SKILLS

- Natural Languages: Mandarin Chinese (Native), English (IELTS: 7.5, October 2021), Spanish (basic), Japanese (basic).
- Programming Languages or Packages: Python, Matlab, R, C++, Pytorch.