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ZHU LIU

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EDUCATION

Tsinghua University   **Beijing, China**   **Aug 2022 – Present**
- PhD in Computational Linguistics (at School of Humanities), supervised by Ying Liu and cosupervised by Maosong Sun
- **Research Topics:** Semantic Map Models, Computational Lexical Semantics, explainable LLMs
- **GPA:** 3.93/4.0, 2023 first-level scholarship

Southern University of Science and Technology   **Shenzhen, China**   **Aug 2019 – June 2022**
- Master in Computer Science and Technology, supervised by Feng Zheng
- **Research Topics:** Video Captioning, Conditional Textual Generation, Variational-based generative models
- **Thesis:** Towards Human-like Diverse Video Captioning via a Latent Generative Model
- **GPA:** 3.67/4.0

Dalian University of Technology   **Dalian, China**   **Sept. 2015 – June 2019**
- Bachelor in Digital Media Technology (Software Engineering)

PUBLICATIONS

- **Zhu Liu**, Kangyang Luo, Cunliang Kong, Ying Liu, and Maosong Sun. Exploring the Small World of Word Embeddings: A Comparative Study on Conceptual Spaces from LLMs of Different Scales[J]. arxiv:2502.11380, 2025. **Under Review**.
- **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[J]. arxiv:2412.01423, 2024. **NAACL 2025**.
- **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*.

PROGRAMS AND EVENTS

Fourth/Fifth/Sixth Linguistics PhD Forum   **Tsinghua, Beijing, China**   **November. 2022/2023/2024**
- **Content 2022:** Uncertainty Estimation on Word Sense Disambiguation; **Award:** Rank 3/20
- **Content 2023:** Evaluation agentiveness of Subject-object reversible sentences in LLMs; **Award:** Rank 1/20+
- **Content 2024:** A Top-down Graph-based Tool for Modeling Classical Semantic Maps; **Award:** Rank 1/20+

TECHNICAL EXPERIENCE

Academic Projects
- **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)

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

Teaching Activities
- **Teaching Assistant:** The 2023 undergraduate course: Python and Digital Humanities in Tsinghua University. The 2020 undergraduate course: C and C++ programming design in SUSTech.

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.