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ZHU LIU

EDUCATION

Tsinghua University	**Beijing, China**	**Aug 2022 – May 2026 (Expected)**

- PhD in Computational Linguistics
- **Research Topics:** Lexical Semantics, Polysemy and Word Ambiguity, Word Sense Disambiguation, Uncertainty in Lexical Semantics
- **Courses:** Probability and Random Mathematics (by Jun Ye, auditing), Natural Language Processing (by Yue Zhang, online auditing), Topics in Chinese Morphology and Syntax (A), Research on Corpus Linguistics (A)

SUSTech	**Shenzhen, China**	**Aug 2019 – June 2022**

- Master in Computer Science and Technology
- **Research Topics:** Video Captioning, Conditional Textual Generation, Variational-based generative models
- **Thesis:** Towards Human-like Diverse Video Captioning via a Latent Generative Model
- **Courses:** Advanced Algorithm (A), Bayesian Data Analysis (A), Machine Learning (A)
- **GPA:** 3.67/4.0

Dalian University of Technology	**Dalian, China**	**Sept. 2015 – June 2019**

- Bachelor in Digital Media Technology

PUBLICATIONS

- **Liu Z**, Liu Y. Ambiguity Meets Uncertainty: Investigating Uncertainty Estimation for Word Sense Disambiguation[J]. arXiv preprint arXiv:2305.13119, 2023. (Accepted by Findings: ACL 2023).
- **Z. Liu**, T. Wang, J. Zhang, F. Zheng, W. Jiang and K. Lu, "Show, Tell and Rephrase: Diverse Video Captioning via Two-Stage Progressive Training," in IEEE Transactions on Multimedia, doi: 10.1109/TMM.2022.3232022.
- Wang, Teng, **Zhu Liu**, Feng Zheng, Zhichao Lu, Ran Cheng, and Ping Luo. "Semantic-Aware Pretraining for Dense Video Captioning." arXiv preprint arXiv:2204.07449 (2022).
- Ma Jian, **Liu Zhu**, Shi Yurong, et al. Multimodal Solar Flare Prediction Model Based on Sunspot Group Data [J]. Spacecraft Environmental Engineering, 2021,38(3):256-262.

SUMMER/WINTER PROGRAMS AND EVENTS

CVPR 2021 Challenge	**Online, Global**	**May. 2021**

- **Content:** Activitynet Dense Event Video Captioning Challenge
- **Award:** Rank 2

Alibaba Tianchi Challenge	**Online, China**	**Sept. 2020**

- **Content:** Track 2: Solar Storm Smart Warning
- **Award:** Rank 1/70

IAPR/IEEE Winter School	**Shenzhen, China**	**Jan. 2020**

- **Topics:** Machine Learning, Biometrics

Winter Course	**Oxford University, UK**	**Jan. 2019 - Feb. 2019**

- **Topics:** Humanity, Works of Shakespeare
- **Presentation:** Play and linguistic analysis of *Macbeth* (A+)

TECHNICAL EXPERIENCE

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.

Academic Projects

- **Diverse Video Captioning:** Proposed a two-stage video captioning model and generated diverse video captioning based on variational models (VAEs). Designed two metrics to measure both accuracy and diversity for a caption set generated.