Xu Zheng

2nd year Ph.D Candidate @ HKUST, Guangzhou — Resident Doctral Researcher @ INSAIT, Sofia

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EDUCATION

The Hong Kong University of Science and Technology (Guangzhou) — GuangZhou, China
Doctor of Philosophy - Artificial Intelligence — *2023.09 - present*

Northeastern University — Shenyang, China
Master of Engineering - Information and Communication Engineering — *2020.09 - 2023.06*

Northeastern University — Shenyang, China
Bachelor of Engineering - Communication Engineering — *2015.09 - 2019.06*

RESEARCH INTERESTS

Multi-modal Artificial Intelligence: Multi-modal Large Language Models
Sensing and Perception: Semantic Segmentation, Object Detection, Object Recognition, Action Recognition
Novel Sensors and Applications : Event-based Vision, 360 Camera and Omnidirectional Vision, Fish-eye Camera
Deep Learning : Transfer Learning, Knowledge Distillation, Semi-supervised Learning, Neural Network Architecture

PUBLICATIONS

Top Conference & First Author × 8:

1. **Xu Zheng**, Yuanhuiyi Lyu, and Lin Wang. Learning Modality-agnostic Representation for Semantic Segmentation from Any Modalities. ECCV 2024 **Oral Presentation**.

2. **Xu Zheng**, Yuanhuiyi Lyu, Jiazhou Zhou, and Lin Wang. Centering the Value of Every Modality: Towards Efficient and Resilient Modality-agnostic Semantic Segmentation. ECCV 2024.

3. **Xu Zheng** and Lin Wang. EventDance: Unsupervised Cross-modal Source-free Adaptation for Event-based Object Recognition. IEEE/CVF CVPR 2024.

4. **Xu Zheng**, Pengyuan Zhou, Athanasios V. Vasilakos and Lin Wang. Semantics, Distortion, and Style Matter: Towards Source-free UDA for Panoramic Segmentation. IEEE/CVF CVPR 2024.

5. Yuanhuiyi Lyu*, **Xu Zheng*** (co-first author), Jiazhou Zhou and Lin Wang. UniBind: LLM-Augmented Unified and Balanced Representation Space to Bind Them All. IEEE/CVF CVPR 2024.

6. **Xu Zheng**, Tianbo Pan, Yunhao Luo and Lin Wang. Look at the Neighbor: Distortion-aware Unsupervised Domain Adaptation for Panoramic Semantic Segmentation. IEEE/CVF ICCV 2023.

7. **Xu Zheng**, Jinjing Zhu, Yexin Liu, Zidong Cao, Chong Fu and Lin Wang. Both Style and Distortion Matter: Dual-Path Unsupervised Domain Adaptation for Panoramic Semantic Segmentation. IEEE/CVF CVPR 2023.

8. **Xu Zheng**, Yunhao Luo, Hao Wang, Chong Fu and Lin Wang. Transformer-cnn cohort: Semi-supervised semantic segmentation by the best of both students. IEEE ICRA 2024.

Journal & First Author × 2:

1. **Xu Zheng**, Pengyuan Zhou, Athanasios V. Vasilakos and Lin Wang. 360SFUDA++: Towards Source-free UDA for Panoramic Segmentation by Learning Reliable Category Prototypes. **IEEE TPAMI** 2025.

2. **Xu Zheng**, Chong Fu, Haoyu Xie, Jialei Chen, Xingwei Wang and Chiu-Wing Sham. Uncertainty-aware deep co-training for semi-supervised medical image segmentation. Computers in Biology and Medicine 2022.

3. **Xu Zheng**, Yunhao Luo, Pengyuan Zhou and Lin Wang. Distilling Efficient Vision Transformers from CNNs for Semantic Segmentation. Pattern Recognition 2024.

Preprints & Project Lead × 4:

1. Ding Zhong, **Xu Zheng**, Chenfei Liao, Yuanhuiyi Lyu, Jialei Chen, Shengyang Wu, Linfeng Zhang, Xuming Hu. OmniSAM: Omnidirectional Segment Anything Model for UDA in Panoramic Semantic Segmentation. Arxiv 2025.

2. Chenfei Liao, **Xu Zheng**, Yuanhuiyi Lyu, Haiwei Xue, Yihong Cao, Jiawen Wang, Kailun Yang, Xuming Hu. MemorySAM: Memorize Modalities and Semantics with Segment Anything Model 2 for Multi-modal Semantic Segmentation. Arxiv 2025.

3. Yuanhuiyi Lyu, **Xu Zheng**, Lutao Jiang, Yibo Yan, Xin Zou, Huiyu Zhou, Linfeng Zhang, Xuming Hu. RealRAG: Retrieval-augmented Realistic Image Generation via Self-reflective Contrastive Learning. Arxiv 2025.

Preprints & First Author × 2:

1. **Xu Zheng**, Ling Wang, Kanghao Chen, Yuanhuiyi Lyu, Jiazhou Zhou and Lin Wang. EIT-1M: One Million EEG-Image-Text Pairs for Human Visual-textual Recognition and More. Arxiv 2024.

2. **Xu Zheng**, Yexin Liu, Yunfan Lu, Tongyan Hua, Tianbo Pan, Weiming Zhang, Dacheng Tao and Lin Wang. Deep learning for event-based vision: A comprehensive survey and benchmarks. Arxiv 2023.

WORKING & INTERN EXPERIENCES

- **INSAIT, Sofia**
  Resident Doctoral Researcher   *2025.2 - Now*

- **VLISLab, HKUST(GZ)**
  Research Assistant   *2021.11 - 2023.06*

- **Northeastern University (United States)**
  Research Assistant   *2022.06 - 2022.09*

HONORS AND AWARDS

- Outstanding Master's Thesis in Liaoning Province, China -2023 (**<2** %)

- Outstanding Graduate of Liaoning Province, China -2023 (**<2** %)

- National Scholarship of China -2022 (**<2** %)

- First Class Master Scholarship of Northeastern University - 2020/2021/2022 (**20** %)

- Outstanding Graduate of Liaoning Province -2019 (**<2** %)

- Outstanding Graduate of Northeastern University - 2019 (**<2** %)

- First Class Scholarship of Northeastern University - 2019 (**20** %)

PROFESSIONAL & SOCIETY & UNIVERSITY SERVICE

- Area Chair of PDLM workshop, AAAI 2025

- Reviewers of IJCV, TIP, TNNLS, TMM, TCI, IVC, CBM, MVA.

- Program Members of CVPR 2025, ICML 2025, ACM MM 2025, ECCV 2024, NeurIPS 2024, ICLR 2024 / 2025, etc.

- Volunteer Teaching from 2019-2020.

- President of the NEU CSE Student Science and Technology Association from 2017-2018.

- President of the NEU CSE Graduates Committee from 2018-2019.

- President of the NEU CSE Graduate Student Association from 2021-2022.