ZIQI ZHOU

Rochester, New York

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EDUCATION

Rochester Institute of Technology	**Aug. 2024 – Present**
Ph.D. in Computing and Information Sciences. Advisor: Prof. Zhiqiang Tao	*Rochester, New York*
Nanjing University	**Sep. 2020 – Jun. 2023**
M.Sc. in Computer Science and Technology. Advisor: Prof. Yinghuan Shi	*Nanjing, China*
Nanjing Normal University	**Sep. 2016 – Jun. 2020**
B.Eng. in Computer Science and Technology. Advisor: Prof. Wanqi Yang	*Nanjing, China*

RESEARCH INTERESTS

My research interests lie at the intersection of **Computer Vision** and **Multi-modal Large Language Models (MLLMs)**. My current research spans three key topics:

- **Clinical Diagnostics**: Optimizing MLLM agents for **medical VQA** and **report generation**.
- **Hybrid Modeling**: Leveraging agents to architect **medical hybrid models** for digital twin simulations.
- **Vision Generation**: Investigating **Visual Autoregressive** models to enhance visual perception capabilities.

PUBLICATIONS

[1] **Ziqi Zhou**, Jiamian Wang, Chen Qiu, Chaithanya Kumar Mummadi, Qi Yu, Zhiqiang Tao. "Visual Autoregressive Modeling Through Online Multi-Scale Preference Optimization for Low-Level Image Perception". In Submission.

[2] **Ziqi Zhou**, Guohao Sun, Huazhu Fu, Linwei Wang, Christopher T. Richardson, Anna De Benedetto, Zhiqiang Tao. "Auto-Discovered Visual Chain-of-Thought for Enhanced Medical Large Vision Language Models". In Submission.

[3] Jiamian Wang, **Ziqi Zhou**, Chaithanya Kumar Mummadi, Sohail Dianat, Majid Rabbain, Raghuveer Rao, Chen Qiu, Zhiqiang Tao. "Visual Self-Refinement for Autoregressive Models". In *Findings of the Association for Computational Linguistics (EMNLP Findings)*, 2025. [Paper]

[4] Junfei Xiao, **Ziqi Zhou**, Wenxuan Li, Shiyi Lan, Jieru Mei, Zhiding Yu, Bingchen Zhao, Alan Yuille, Yuyin Zhou, Cihang Xie. "A Semantic Space is Worth 256 Language Descriptions: Make Stronger Segmentation Models with Descriptive Properties". In *European Conference on Computer Vision (ECCV)*, 2024. (Accept Rate: 27.9%) [Paper] [Code]

[5] **Ziqi Zhou**, Lei Qi, Yinghuan Shi. "Generalizable Medical Image Segmentation via Random Amplitude Mixup and Domain-Specific Image Restoration". In *European Conference on Computer Vision (ECCV)*, 2022. (Accept Rate: 24.3%) [Paper] [Code]

[6] **Ziqi Zhou**, Lei Qi, Xin Yang, Dong Ni, Yinghuan Shi. "Generalizable Cross-modality Medical Image Segmentation via Style Augmentation and Dual Normalization". In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022. (Accept Rate: 25.3%) [Paper] [Code]

[7] Xiaoting Han, Lei Qi, Qian Yu, **Ziqi Zhou**, Yefeng Zheng, Yinghuan Shi, and Yang Gao. "Deep Symmetric Adaptation Network for Cross-modality Medical Image Segmentation". *IEEE Transactions on Medical Imaging (TMI)*, 2021. (IF: 9.8) [Paper]

[8] **Ziqi Zhou***, Xinna Guo*, Wanqi Yang, Yinghuan Shi, Luping Zhou, Lei Wang, and Ming Yang. "Cross-Modal Attention-Guided Convolutional Network for Multi-Modal Cardiac Segmentation". In *Machine Learning in Medical Imaging @ MICCAI (**MLMI**)*, 2019. (Oral Presentation, Accept Rate: 13.9%) [Paper]

WORK EXPERIENCE

NEC Laboratories America   May. 2025 − Aug. 2024

Research Intern, worked with Dr. Christopher Malon   Princeton, New Jersey

Project: Improving the clinical accuracy of multi-modal LLMs for radiology report generation.

Bosch Center for Artificial Intelligence   Jun. 2024 − Aug. 2024

Research Intern, worked with Dr. Chaithanya Kumar Mummadi and Dr. Chen Qiu   Pittsburgh, Pennsylvania

Project: Visual Auto-Regressive (VAR) model for low-level image perceptions.

SenseTime   Jun. 2022 − Nov. 2022

Research Intern, worked with Mr. Wei Li   Beijing, China

Project: Domain generalizable image semantic segmentation.

HONORS & AWARDS

4th Place, The 8th CCF BDCI Remote Sensing Image Segmentation, 10,000 RMB Bonus 🔗   2020

Outstanding Graduate Student, Nanjing University   2023

Excellent Master Thesis (Nominee), Department of Computer Science and Technology, NJU   2023

National Scholarship, Ministry of Education of P.R. China   2022

Outstanding Undergraduate Student Scholarship, Nanjing Normal University   2017-2020

ACADEMIC SERVICES

Conference Reviewer

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2023-2025
- IEEE International Conference on Computer Vision (ICCV), 2023, 2025
- European Conference on Computer Vision (ECCV), 2024
- Conference on Neural Information Processing Systems (NeurIPS), 2025
- Association for the Advancement of Artificial Intelligence (AAAI), 2026
- ACM Multimedia (MM), 2025

Journal Reviewer

- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
- IEEE Transactions on Medical Imaging (TMI)
- IEEE Journal of Biomedical and Health Informatics (JBHI)

TECHNICAL SKILLS

Programming Languages: Python, Matlab, Java, C/C++, SQL

Tools: LaTeX, Git, Markdown

Deep Learning Frameworks: PyTorch, TensorFlow