

XIAOMAN ZHANG

xiaoman-zhang.github.io
xm99sjtu@sjtu.edu.cn +86-17705651853

EDUCATION

Shanghai Jiao Tong University

Sept. 2019 – Present

- Ph.D. in Information and Communication Engineering, Wu Honored Ph.D Class
- Advisors: Weidi Xie, Ya Zhang, Yanfeng Wang

University of Science and Technology of China

Sept. 2015 - July 2019

- B.S. in Electronic and Information Engineering, School of the Gifted Young

RESEARCH INTERESTS

- Generative foundation model in medical domain
- Multi-modal representation learning
- Knowledge-enhanced representation learning

RESEARCH EXPERIENCE

Shanghai Artificial Intelligence Laboratory

Sept. 2019 – Present

Research Intern in Medical AI

Contributed to the development of multimodal foundation models for the medical domain and the release of large-scale multimodal datasets and foundation models.

- **Released large-scale multimodal datasets.**
 - PMC-OA, a medical dataset containing 1.65M image-text pairs.
 - PMC-VQA, a medical dataset comprising 227k VQA pairs from 149k images.
 - MedMD, a medical dataset comprising 16M 2D and 3D images with textual descriptions.
- **Released pre-trained models.**
 - PMC-CLIP, a CLIP-style model trained on PMC-OA.
 - MedVInT, a visual instruction-tuning model trained on PMC-VQA.
 - RadFM, a radiology multimodal foundation model trained on MedMD.

PUBLICATIONS

* denotes equal contribution.

1. **Xiaoman Zhang**, Chaoyi Wu, Yanfeng Wang, Ya Zhang, Weidi Xie. “Knowledge-enhanced visual-language pre-training on chest radiology images”, *Nature Communications*, 14, 4542 (2023).
2. **Xiaoman Zhang**, Weidi Xie, Chaoqin Huang, Ya Zhang, Xin Chen, Qi Tian, and Yanfeng Wang. “Self-supervised tumor segmentation with sim2real adaptation.” *IEEE Journal of Biomedical and Health Informatics* (2023).
3. Chaoyi Wu*, **Xiaoman Zhang***, Yanfeng Wang, Ya Zhang, Weidi Xie. “K-Diag: Knowledge-enhanced Disease Diagnosis in Radiographic Imaging”, *In Medical Image Computing and Computer Assisted Interventions Big Task Small Data Workshop* (2023).

4. Chaoyi Wu, **Xiaoman Zhang**, Yanfeng Wang, Ya Zhang, Weidi Xie. “MedKLIP: Medical knowledge-enhanced language-image pre-training in radiology”, *In International Conference on Computer Vision* (2023).
5. Weixiong Lin*, Ziheng Zhao*, **Xiaoman Zhang**, Chaoyi Wu, Yanfeng Wang, Ya Zhang, Weidi Xie. “PMC-CLIP: Contrastive language-image pre-training using biomedical documents”, *In Medical Image Computing and Computer Assisted Intervention* (2023).
6. **Xiaoman Zhang**, Shixiang Feng, Yuhang Zhou, Ya Zhang, and Yanfeng Wang. “SAR: Scale-aware restoration learning for 3d tumor segmentation.”, *In Medical Image Computing and Computer Assisted Intervention* (2021).

MANUSCRIPTS IN SUBMISSION/REVIEW

1. Chaoyi Wu*, **Xiaoman Zhang***, Ya Zhang, Yanfeng Wang, and Weidi Xie. “Toward Generalist Medical Foundation Model for Radiology”, *arXiv preprint arXiv:2308.02463*, (2023).
2. **Xiaoman Zhang***, Chaoyi Wu*, Ziheng Zhao, Weixiong Lin, Ya Zhang, Yanfeng Wang, and Weidi Xie. “PMC-VQA: Visual instruction tuning for medical visual question answering”, *arXiv preprint arXiv:2305.10415*, (2023).
3. Chaoyi Wu, **Xiaoman Zhang**, Ya Zhang, Yanfeng Wang, and Weidi Xie. “Pmc-llama: Further finetuning llama on medical papers”, *arXiv preprint arXiv:2304.14454*, (2023).

INVITED TALKS

Knowledge-enhanced Medical Multi-modal Foundation Models
Synced jiqizhixin

July 2023

HONORS AND AWARDS

Outstanding Graduate, USTC	2019
Innovation Scholarship in School of the Gifted Young, USTC	2018
Sakura Science Plan, USTC	2017
The First Prize Scholarship, USTC	2016
Cyrus Tang Scholarship, USTC	2015-2019

REFEREES

Weidi Xie

Professor

Shanghai Jiao Tong University School & Oxford
 weidi@sjtu.edu.cn

Ya Zhang

Professor

Shanghai Jiao Tong University School
 ya_zhang@sjtu.edu.cn