





# Xiangde Luo, Ph.D.

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**Bio:** Xiangde focuses on annotation-efficient medical image analysis, such as self-/ semi-/weakly-supervised, active learning and human-in-the-loop and applies them to clinical applications, especially for **oncology treatment** (radiotherapy). Recently, he promoted some interesting projects in the MICCAI community: 1) built a semi-supervised medical image segmentation benchmark **SSL4MIS** with more than 2100 stars on GitHub; 2) organized a challenge **SegRap2023** in conjunction with MICCAI; 3) released large scale abdominal organ segmentation datasets **WORD** and **RAOS**. He has published several top journals or conferences, and these works were cited > 8700 times (**seven of them citations**  $\geq 100$ ), **h**, **i10**-index are **23**, **30**, respectively.

## Education

- 2018-09 – 2024-06  **Ph.D., University of Electronic Science and Technology of China (UESTC)**  
Supervisor: *Prof. Shaoting Zhang*  
Thesis: *Medical Image Segmentation Using a Limited Amount of Labeled Data*
- 2014-09 – 2018-06  **B.E., University of Electronic Science and Technology of China (UESTC)**  
Supervisor: *Prof. Shaoting Zhang*  
Thesis: *Data capture using crawl and its applications*

## Employment History

- 2024-11 – present  **Postdoctoral Fellow at Stanford University, Advisor: Prof. Ruijiang Li**
- 2024-07 – 2024-10  **Research Assistant at West China Hospital, Mentor: Prof. Kang Li**
- 2021-06 – 2024-06  **Research Intern at Shanghai AI Laboratory, Mentor: Prof. Xiaofan Zhang**
- 2019-07 – 2020-06  **Research Intern at SenseTime Research, Mentor: Dr. Tao Song**

## Highlight Publications

### Journal Articles

- 1 H. Wang, ..., and **X. Luo**, “Dual-reference source-free active domain adaptation for nasopharyngeal carcinoma tumor segmentation across multiple hospitals,” *IEEE Transactions on Medical Imaging*, 2024. **Corresponding author.**
- 2 **X. Luo**, G. Wang, W. Liao, *et al.*, “Semi-supervised medical image segmentation via uncertainty rectified pyramid consistency,” *Medical Image Analysis*, vol. 80, p. 102 517, 2022. **ESI Highly Cited Papers.**
- 3 **X. Luo**, J. Fu, Y. Zhong, *et al.*, “Segrap2023: A benchmark of organs-at-risk and gross tumor volume segmentation for radiotherapy planning of nasopharyngeal carcinoma,” *Medical image analysis*, vol. 101, p. 103 447, 2025.
- 4 **X. Luo**, H. Wang, J. Xu, *et al.*, “Generalizable magnetic resonance imaging-based nasopharyngeal carcinoma delineation: Bridging gaps across multiple centers and raters with active learning,” *International Journal of Radiation Oncology\* Biology\* Physics*, vol. 121, no. 5, pp. 1384–1393, 2025.
- 5 **X. Luo**, W. Liao, Y. Zhao, *et al.*, “A multicenter dataset for lymph node clinical target volume delineation of nasopharyngeal carcinoma,” *Nature Scientific Data*, vol. 11, p. 1085, 2024.
- 6 **X. Luo**, W. Liao, Y. He, *et al.*, “Deep learning-based accurate delineation of primary gross tumor volume of nasopharyngeal carcinoma on heterogeneous magnetic resonance imaging: A large-scale and multi-center study,” *Radiotherapy and Oncology*, vol. 180, p. 109 480, 2023.

- 7 X. Luo, W. Liao, J. Xiao, *et al.*, "WORD: A large scale dataset, benchmark and clinical applicable study for abdominal organ segmentation from ct image," *Medical Image Analysis*, vol. 82, p. 102 642, 2022.
- 8 X. Luo, T. Song, G. Wang, *et al.*, "SCPM-Net: An anchor-free 3d lung nodule detection network using sphere representation and center points matching," *Medical Image Analysis*, vol. 75, p. 102 287, 2022.
- 9 X. Luo, G. Wang, T. Song, *et al.*, "MIDeepSeg: minimally interactive segmentation of unseen objects from medical images using deep learning," *Medical Image Analysis*, vol. 72, p. 102 102, 2021.

## Conference Proceedings

- 1 Y. Wu\*, X. Luo\*, Z. Xu, *et al.*, "Diversified and personalized multi-rater medical image segmentation," in *IEEE/CVF Conference on Computer Vision and Pattern Recognition*, 2024. **Co-first authors.**
- 2 H. Wang\*, X. Luo\*, W. Chen, *et al.*, "Advancing uwf-slo vessel segmentation with source-free active domain adaptation and a novel multi-center dataset," in *International Conference on Medical Image Computing and Computer-Assisted Intervention*, Springer, 2024, 75–85. **Co-first authors.**
- 3 X. Luo, Z. Li, S. Zhang, W. Liao, and G. Wang, "Rethinking abdominal organ segmentation (raos) in the clinical scenario: A robustness evaluation benchmark with challenging cases," in *International Conference on Medical Image Computing and Computer-Assisted Intervention*, Springer, 2024, pp. 531–541.
- 4 Z. Luo\*, X. Luo\*, Z. Gao, and G. Wang, "An uncertainty-guided tiered self-training framework for active source-free domain adaptation in prostate segmentation," in *International Conference on Medical Image Computing and Computer-Assisted Intervention*, Springer, 2024, 107–117. **Co-first authors.**
- 5 X. Luo, M. Hu, W. Liao, *et al.*, "Scribble-supervised medical image segmentation via dual-branch network and dynamically mixed pseudo labels supervision," in *International Conference on Medical Image Computing and Computer-Assisted Intervention*, Springer, 2022, pp. 528–538.
- 6 X. Luo, M. Hu, T. Song, G. Wang, and S. Zhang, "Semi-supervised medical image segmentation via cross teaching between cnn and transformer," in *International Conference on Medical Imaging with Deep Learning*, PMLR, 2022, pp. 820–833.
- 7 X. Luo, J. Chen, T. Song, and G. Wang, "Semi-supervised medical image segmentation through dual-task consistency," in *Proceedings of the AAAI conference on artificial intelligence*, vol. 35, 2021, 8801–8809, **Top 15 Most Influential AAAI 2021 Papers.**
- 8 X. Luo, W. Liao, J. Chen, *et al.*, "Efficient semi-supervised gross target volume of nasopharyngeal carcinoma segmentation via uncertainty rectified pyramid consistency," in *International Conference on Medical Image Computing and Computer-Assisted Intervention*, Springer, 2021, pp. 318–329.

## Research topic

AI for Medicine    Annotation-efficient learning, Data-centric learning, Computational pathology

## Academic Experience and Achievements

### Awards and Achievements

- 2023    TMI Distinguished Reviewer
- 2022    MICCAI Student Travel Award

### Journals/Conferences Review

- Journals    TPAMI, MedIA, TMI, TNNLS, TGRS, PR, JBHI, eClinicalMedicine
- Conferences    MICCAI2021, MICCAI2022, MICCAI2023, MICCAI2024, AAAI2022, AAAI2023