Yunxiang Li

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EDUCATION

- **University of Texas Southwestern Medical Center** Dallas, USA
  PhD of BME *2022 - present*

- **Hangzhou Dianzi University** Hangzhou, China
  Bachelor of Computer Science and Technology *2018 - 2022*

- **The University of Adelaide** Adelaide, Australia
  Visiting Student (Summer School) *2019*

RESEARCH INTERESTS

- **Medical Image Analysis**: Classification, Segmentation, Transformer in vision, Diffusion Model, LLM

SKILLS SUMMARY

- **Languages**:   Python, Java, C, JavaScript, SQL
- **Frameworks**:   Pytorch, Spring Boot, TensorFlow, Keras, Vue, NodeJS

EXPERIENCE

- **Microelectronics CAD Center, Hangzhou Dianzi University**
  Supervisor: Dr. Yaqi Wang and Prof. Shuai Wang *Aug 2019 - Sep 2021*
  - **Automatic Diagnosis of Root Canal Therapy**: Cooperation with National Clinical Research Center for Oral Diseases, West China Hospital of Stomatology, Sichuan University

- **IDEA Lab, University of North Carolina at Chapel Hill**
  Supervisor: Prof. Li Wang *Sep 2021 - Feb 2022*
  - **Infant Brain Segmentation**: Fetal/infant Brain Skull Stripping

- **MAIA Lab, UT Southwestern Medical Center**
  Supervisor: Prof. You Zhang *July 2022 - Present*
  - **Diffusion Model**: Image Translation
  - **LLM**: ChatDoctor

FIRST/CO-FIRST AUTHOR PUBLICATIONS

- **[1]**: **Y Li**, Z Li, K Zhang, R Dan, S Jiang, Y Zhang. "ChatDoctor: A Medical Chat Model Fine-Tuned on a Large Language Model Meta-AI (LLaMA) Using Medical Domain Knowledge." *Cureus* 15 (6), 2023.

- **[2]**: **Y Li**, S Wang, J Wang, G Zeng, W Liu, Q Zhang, Q Jin, Y Wang. "GT U-Net: A U-Net Like Group Transformer Network for Tooth Root Segmentation." *Oral, MICCAI 2021, Machine Learning in Medical Imaging*, 386-395, 2021.

- **[3]**: **Y Li**, G Zeng, Y Zhang, J Wang, Q Jin, L Sun, Q Zhang, Q Lian, G Qian, ... "AGMB-Transformer: Anatomy-Guided Multi-Branch Transformer Network for Automated Evaluation of Root Canal Therapy." *IEEE Journal of Biomedical and Health Informatics*, 2021.

- **[4]**: **Y Li**, HC Shao, X Liang, L Chen, R Li, S Jiang, J Wang, Y Zhang. "Zero-shot Medical Image Translation via Frequency-Guided Diffusion Models." *IEEE Transactions on Medical Imaging*, 2023.

- **[5]**: **Y Li**, J Li, R Dan, S Wang, K Jin, G Zeng, J Wang, X Pan, Q Zhang, H Zhou, ... "Dispensed Transformer Network for Unsupervised Domain Adaptation." *arXiv preprint arXiv:2110.14944*, 2021.

- **[6]**: **Y Li**, B Jing, Z Li, J Wang, Y Zhang. "nnSAM: Plug-and-play Segment Anything Model Improves nnUNet Performance." *arXiv preprint arXiv:2309.16967*, 2023.

- **[7]**: **Y Li**, M Chen, W Yang, K Wang, J Ma, AC Bovik, Y Zhang. "SAMScore: A Semantic Structural Similarity Metric for Image Translation Evaluation." *arXiv preprint arXiv:2305.15367*, 2023.

- **[8]**: **Y Li**, R Dan, S Wang, Y Cao, X Luo, C Tan, G Jia, H Zhou, Y Zhang, ... "Plug-and-Play Shape Refinement Framework for Multi-site and Lifespan Brain Skull Stripping." *International Workshop on Machine Learning in Medical Imaging*, 81-90, 2022.

- **[9]**: **Y Li**, HC Shao, X Qian, Y Zhang. "FDDM: Unsupervised Medical Image Translation with a Frequency-Decoupled Diffusion Model." *arXiv preprint arXiv:2311.12070*, 2023.

- **[10]**: R Dan*, **Y Li***, Y Wang, G Jia, R Ge, J Ye, Q Jin, Y Wang. "CDNet: Contrastive Disentangled Network for Fine-Grained Image Categorization of Ocular B-Scan Ultrasound." *IEEE Journal of Biomedical and Health Informatics*, 2023.

Co-Author Publications

- [**1**]: Z Li, **Y Li**, Q Li, P Wang, D Guo, L Lu, D Jin, Y Zhang, Q Hong. "Lvit: language meets vision transformer in medical image segmentation." *IEEE Transactions on Medical Imaging*, 2023.

- [**2**]: K Jin, Z Gao, X Jiang, Y Wang, X Ma, **Y Li**, J Ye. "MSHF: A Multi-Source Heterogeneous Fundus (MSHF) Dataset for Image Quality Assessment." *Scientific Data* 10 (1), 286, 2023.

- [**3**]: Y Zhang, F Ye, L Chen, F Xu, X Chen, H Wu, M Cao, **Y Li**, Y Wang, ... "Children's dental panoramic radiographs dataset for caries segmentation and dental disease detection." *Scientific Data* 10 (1), 380, 2023.

- [**4**]: HC Shao, **Y Li**, J Wang, S Jiang, Y Zhang. "Real-time liver tumor localization via combined surface imaging and a single x-ray projection." *Physics in Medicine & Biology* 68 (6), 065002, 2023.

- [**5**]: K Wang, **Y Li**, M Dohopolski, T Peng, W Lu, Y Zhang, J Wang. "Recurrence-free survival prediction under the guidance of automatic gross tumor volume segmentation for head and neck cancers." *3D Head and Neck Tumor Segmentation in PET/CT Challenge*, 144-153, 2022.

- [**6**]: A Shao, K Jin, **Y Li**, L Lou, W Zhou, J Ye. "Overview of global publications on machine learning in diabetic retinopathy from 2011 to 2021: Bibliometric analysis." *Frontiers in Endocrinolong*, 2022.

- [**7**]: T Weng, Y Shen, K Jin, Z Cheng, **Y Li**, G Zhang, S Wang. "Learning from Noisy Labels Generated by Extremely Point Annotations for OCT Fluid Segmentation." *arXiv preprint arXiv:2306.02582*, 2023.

- [**8**]: D Lv, Y Wang, S Wang, Q Zhang, W Qi, **Y Li**, L Sun. "A Cascade-SEME network for COVID-19 detection in chest x-ray images." *Medical Physics* 48 (5), 2337-2353, 2021.

- [**9**]: HC Shao, **Y Li**, J Wang, S Jiang, Y Zhang. "Real-time liver motion estimation via deep learning-based angle-agnostic X-ray imaging." *Medical Physics* 50 (11), 6649-6662, 2023.

- [**10**]: Z Jiang, L Wang, Y Wang, G Jia, G Zeng, J Wang, **Y Li**, D Chen, G Qian, ... "A self-supervised learning based framework for eyelid malignant melanoma diagnosis in whole slide images." *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 2022.

- [**11**]: K Jin, X Huang, J Zhou, **Y Li**, Y Yan, Y Sun, Q Zhang, Y Wang, J Ye. "Fives: A fundus image dataset for artificial Intelligence based vessel segmentation." *Scientific Data* 9 (1), 475, 2022.

- [**12**]: X Feng, C Wang, C Wu, **Y Li**, Y He, S Wang, Y Wang. "FDNet: Feature Decoupled Segmentation Network for Tooth CBCT Image." *arXiv preprint arXiv:2311.06551*, 2023.

- [**13**]: X Huang, X Kong, Z Shen, J Ouyang, **Y Li**, K Jin, J Ye. "GRAPE: A multi-modal dataset of longitudinal follow-up visual field and fundus images for glaucoma management." *Scientific Data* 10 (1), 520, 2023.

- [**14**]: HC Shao, **Y Li**, J Wang, S Jiang, Y Zhang. "Real-time liver motion estimation via combined surface imaging and single x-ray imaging using a deep learning-based approach (Surf-X)(Conference Presentation)." *Medical Imaging 2023: Image-Guided Procedures, Robotic Interventions, and ...*
  More details about my research and publications are available on my homepage "www.yunxiangli.top".

Professional Service

- **Program Committee (PC) member**: MICCAI MLMI
- **Reviewer**: IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)
- **Reviewer**: IEEE TNNLS
- **Reviewer**: Neurocomputing
- **Reviewer**: Medical Physics
- **Reviewer**: ACM MM
- **Reviewer**: ICRA: International Conference on Robotics and Automation
- **Reviewer**: Pattern Recognition
- **Reviewer**: JBHI: IEEE Journal of Biomedical and Health Informatics
- **Reviewer**: MBEC: Medical & Biological Engineering & Computing
- **Community Member**: IEEE Student Member, MICCAI Student Member

Patent

- **Patent**: **Yunxiang Li**, Yaqi Wang, Yifan Zhang, Ruizi Peng, Neng Xia, Kai Tang, Guiping Qian, Ruilong Dan "An interactive annotation method for tooth root X-ray images." Chinese Invention Patent; Application Number: *CN202110648218.8*

- **Patent**: **Yunxiang Li**, Yaqi Wang, Yifan Zhang, Neng Xia, Ruizi Peng, Kai Tang, Dingguo Yu, Suiyu Zhang "Neural network architecture and implementation method of multi branch deep self attention transformation network." Chinese Invention Patent; Application Number: *CN202110648214.X*

- **Patent**: **Yunxiang Li**, Yaqi Wang, Yifan Zhang, Kai Tang, Dingguo Yu, Neng Xia, Ruizi Peng, Suiyu Zhang "A method of root image segmentation by landmark detection polynomial fitting curve." Chinese Invention Patent; Application Number: *CN202110648219.2*