Tianzhong Lan

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Education

2022 – Present **Sichuan University**, Ph.D. in Computer Science and Technology.
Advisor: Prof. **Min Zhu**, Lab: Vision Computing Lab

2019 – 2022 **Sichuan University**, M.S. in Software Engineering.
Advisor: Prof. **Zhang Yi**, Lab: Machine Intelligence Lab

2015 – 2019 **Northern University of Technology**, B.E. in Computer Science and Technology, *GPA: 3.69/4 (Top 15% of majors)* .

Research Interests

Computer Vision, with a particular focus on **Medical Image Processing**, **Domain Adaptation**, **Multi Task Learning**

Publications and Preprints

J1 **Lan Tianzhong**, Fanxin Zeng, Zhang Yi, Xiuyuan Xu, and Min Zhu. "ICNoduleNet: Enhancing Pulmonary Nodule Detection Performance on Sharp Kernel CT Imaging." IEEE Journal of Biomedical and Health Informatics (2024). (JCR-Q1, IF: 7.7)

J2 Jun Shao, Gang Wang, Le Yi, Chengdi Wang, **Tianzhong Lan**, Xiuyuan Xu, Jixiang Guo, Taibing Deng, Dan Liu, Bojiang Chen, Zhang Yi, Weimin Li. Deep Learning Empowers Lung Cancer Screening Based on Mobile Low-Dose Computed Tomography in Resource-Constrained Sites. Front. Biosci. (Landmark Ed) 2022, 27(7), 212. (JCR-Q2, IF: 3.9)

C1 **Tianzhong Lan**, Jingwei Li, Xiuyuan Xu, Chengdi Wang, Zhang Yi, Weimin Li, and Jixiang Guo. "A Deep Learning Based Method for Structuring the Chinese Pathological Reports of Lung Specimen." In 2021 11th International Conference on Information Science and Technology (ICIST), pp. 158-165. IEEE, 2021.

P1 **Tianzhong Lan**, Lei Chen, Kai Zhou, Zhang Yi, Nan Chen, Xiuyuan Xu, Min Zhu. "Domain Generalization for Pulmonary Nodule Detection via Distributionally-Regularized Mamba".

Research Experience

Sep 2020 – Present **Research in Image Quality Control on Pulmonary Nodule Detection**, *Project supported by the National Natural Science Foundation of China (Grant No.2018AAA0100201) and the National Natural Science Foundation of China (Grant No.62106163).*

- Proposed a **deep learning-based** method for enhancing the performance of pulmonary nodule detectors on sharp kernel CT imaging. [J1]
- Proposed a **domain generalization** method for pulmonary nodule detectors on out-of-distribution data. [P1]
- Proposed a **detection** method for lung cancer screening on mobile low-dose CT. [J2]
- Developed a pulmonary nodule detection system with team members, which assists radiologists and thoracic surgeons in lung cancer diagnosis. This software has been deployed and used in many hospitals, including West China Hospital of Sichuan University, Dazhou Central Hospital, etc.
- Developed a plugin based on QT5, which assists the operation of the above software.
- Patents written on software have been granted. [PT1]

Nov 2019 – Apr 2021 **Research in Medical Text Processing**, *Project supported by the Major Science and Technology Project from the Science & Technology Department of Sichuan Province (Grant No. 2019KJT0101- 2018GZDZX0035)*.

- Proposed a **deep learning-based** method for Structuring the Chinese Pathological Reports of Lung Specimen. [C1].
- Developed an image reporting module to display structured analysis results.

Patents

Authorized patent

PT1 Weimin Li, Zhang Yi, Chengdi Wang, Jixiang Guo, Jun Shao, Xiuyuan Xu, Yanqi He, **Tianzhong Lan**, Yale Yang, Yuanyuan Chen. "Lung cancer full-cycle intelligent management imaging data platform". CN112669314B.

Activities

2022 **National "Internet +" College Students Innovation and Entrepreneurship Competition**. National First Price

Honors and Awards

2022 Outstanding Graduate of Sichuan University

2020, 2021 Outstanding Student of Sichuan University

2021, 2022 Second-class of Excellent Graduate Scholarship by Sichuan University

Skills

Programming Python, PyTorch, C++, QT, JavaScript, HTML/CSS, SQL, Linux command, Git

Others Chinese (Mandarin secondary-level A certificate), English (CET-6: 536, IEITS:6.5), Violin (Amateur Level 10)