Zhonghua **Wang**

Deep Learning · Medical Image Analysis

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"Be the change that you want to see in the world."

Summary

Master's student at the Southern University of Science and Technology, specializing in medical image analysis using deep learning methodologies. With a prolific academic background, I have authored 7 peer-reviewed publications and contributed to advanced research in the analysis of fundus, ocular, and OCTA images. My current focus lies in leveraging cutting-edge deep learning techniques to solve challenges in dermoscopic images, aiming to improve diagnostic accuracy. Beyond academics, I have successfully led 2 student climbing plans, reinforcing my capabilities in team leadership and strategic planning. I hold 2 software copyrights and a patent, highlighting my innovation and expertise in the field.

Honors & Awards

2021	**Top 10 Students**, Graduate Students in College of Engineering	*Shenzhen, China*
2020	**3rd Prize**, Challenge of Optimization of Low-dose CT image quality	*Shenyang, China*
2020	**Outstanding student scholarship**, Shuren College Annual selection	*Shenzhen, China*
2018	**3 Place Award**, Computer Programming Competition, SUSTech	*Shenzhen, China*

Education

Southern University of Science and Technology — *Shenzhen, China*

M.S. in Electronic Information and Technology — *Sep. 2021 - Present*

- Research Student in Artificial Intelligence Laboratory

Southern University of Science and Technology — *Shenzhen, China*

B.S. in Information System — *Sep. 2017 - Jun. 2021*

- Top ten graduates in College of Engineering

Published Paper

Conferences

- **Wang Z**, Huang Y, Lyu J, Cheng P, Tang X. Deep Learning Based Discrimination of Corneal Ulcer Patterns Using Fluorescein Staining Images[C]//The Fourth International Symposium on Image Computing and Digital Medicine. 2020: 126-129.
- **Wang Z**, Lin L, Wu J, Tang X. Multi-task Learning Based Ocular Disease Discrimination and FAZ Segmentation Utilizing OCTA Images[C]//2021 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC). IEEE, 2021: 2790-2793.
- Lin L, **Wang Z**, Wu J, Lyu J, Wu J, Tang X. Bsda-net: A boundary shape and distance aware joint learning framework for segmenting and classifying octa images[C]//Medical Image Computing and Computer Assisted Intervention–MICCAI 2021: 24th International Conference, Strasbourg, France, September 27–October 1, 2021, Proceedings, Part VIII 24. Springer International Publishing, 2021: 65-75.
- **Wang Z**, Lyu J, Luo W, Tang X. (2021) Adjacent Scale Fusion and Corneal Position Embedding for Corneal Ulcer Segmentation. In: Fu H., Garvin M.K., MacGillivray T., Xu Y., Zheng Y. (eds) Ophthalmic Medical Image Analysis. OMIA 2021. Lecture Notes in Computer Science, vol 12970. Springer, Cham.
- Lin L, Cheng P, **Wang Z**, Li M, Wang K, Tang X. Automated segmentation of corneal nerves in confocal microscopy via contrastive learning based synthesis and quality enhancement[C]//2021 IEEE 18th International Symposium on Biomedical Imaging (ISBI). IEEE, 2021: 1314-1318.
- **Wang Z**, Lyu J, Luo W, Tang X. Superpixel inpainting for self-supervised skin lesion segmentation from dermoscopic images[C]//2022 IEEE 19th International Symposium on Biomedical Imaging (ISBI). IEEE, 2022: 1-4.

Journals

- **Wang Z**, Lyu J, Tang X. autoSMIM: Automatic Superpixel-based Masked Image Modeling for Skin Lesion Segmentation[J]. IEEE Transactions on Medical Imaging, 2023.

Research Experience

2020	**Student's Climbing Program**, Research and development of intelligent diagnosis system for corneal ulcer
2021	**Guangdong Postgraduate Academic Forum**, Image Processing and Pattern Recognition
2022	**Student's Climbing Program**, Automatic enhancement of low-quality fundus image and DR diagnosis
2022	**Jiaxing Research Institude Program**, AIforEye Artificial Intelligence Diagnosis System
2022	**Shenzhen Emergency Prevention and Control Project**, Research and development of key technologies for fully automatic intelligent nucleic acid sampling robot system