

# YI QING WANG

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## 🎓 EDUCATION

**Duke University**, Durham, North Carolina, the United States 2023 –

*Ph.D. Student* Vision and Image Processing Lab, Department of Biomedical Engineering (BME)

- GPA: 3.84/4.0

**Shanghai Jiao Tong University (SJTU)**, Shanghai, China 2019 – 2023

*Bachelor's Degree of Eng.* major in Biomedical Engineering (BME), minor in Computer Science (CS)

- GPA: 3.84/4.3 (Top 10%)

## ♡ HONOR AND AWARDS

Outstanding Graduate of Shanghai Jiao Tong University Jun. 2023

Scholarship of School of Biomedical Engineering Alumni Association Nov. 2022

Merit Student of Shanghai Jiao Tong University Oct. 2022

Shanghai Municipal Government Scholarship Oct. 2021

Class A Scholarship of Shanghai Jiao Tong University Oct. 2020

## 🔍 SCHOLAR EXPERIENCES

**VIP Lab @ Duke** directed by Sina Farsiou Aug. 2023 – Present

*Research Assistant* An Automated Quantitative Ulcer Analysis (AQUA) algorithm to classify Microbial keratitis (MK) organism types

- Proposed a contrastive-learning-based method to extract robust features across different data patterns.
- Developed a triple-stage multi-modality framework to integrate features of different modalities.
- Expected to publish a journal article in 2025

*Research Assistant* A multi-granularity language learning approach to boost visual understanding

- Proposed a novel contrastive learning framework that enables simultaneous multi-label and cross-granularity alignment.
- Provided a set of multi-label, multi-granularity learning objectives to enhance their visual understanding.
- Submitted to ICCV 2025.

**IMIT @ SJTU** directed by Lichi Zhang Dec. 2022 – Jun. 2023

*Thesis* A 2D/3D Registration Method for Full-length Images of Lower Limbs

- Constructed the first 2D-3D registration network for X-rays and CT images of full-length lower limbs
- Adopted the shifted-window self-attention and the cross-attention mechanism for efficient feature extraction
- Proposed SigmoidDiceLoss, which makes the registration of discrete labels continuous and differentiable

**CCVL @ JHU** directed by Alan Yuille & **VLAA @ UCSC** directed by Yuyin Zhou & Cihang Xie  
June. 2022 – Nov. 2022

*Summer Internship* Multi-view MAE for 3D medical image representation learning

- Presented the first multi-view pipeline for self-supervised medical image analysis
- Achieved a comparable performance to the current state-of-the-art method with less training cost
- Published in MICCAI 2023

- Created a novel network to segment several key brain areas on QSM images to improve brain age prediction
- Improved brain age estimation compared to previous studies based on T1w MRI
- Published in *ISMRM 2023* and *IEEE Journal of Biomedical and Health Informatics (JBHI)*

## PUBLICATIONS

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Yang, Z., Woodward, M. A., Niziol, L. M., Pawar, M., Prajna, N. V., Krishnamoorthy, A., **Wang, Y.**, Lu, M., Selvaraj, S., & Farsiu, S. Self-knowledge distillation-empowered directional connectivity transformer for microbial keratitis biomarkers segmentation on slit-lamp photography. *Medical Image Analysis*, 102, 103533.

<sup>1</sup>Chen, M., <sup>1</sup>**Wang, Y.**, <sup>1</sup>Shi, Y., Feng, J., Feng, R., Guan, X., ... & Wei, H. Brain Age Prediction Based on Quantitative Susceptibility Mapping Using the Segmentation Transformer. *IEEE Journal of Biomedical and Health Informatics*.

<sup>1</sup>**Wang, Y.**, <sup>1</sup>Li, Z., <sup>1</sup>Mei, J., <sup>1</sup>Wei, Z., Liu, L., Wang, C., ... & Zhou, Y. SwinMM: Masked Multi-view with Swin Transformers for 3d Medical Image Segmentation. In *2023 International Conference on Medical Image Computing and Computer-Assisted Intervention* (pp. 486-496). Cham: Springer Nature Switzerland.

<sup>1</sup>**Wang, Y.**, Shi, Y., Wei, H. A Brain Age Estimation Network based on QSM using the Segment Transformer. *2023 International Society for Magnetic Resonance in Medicine (ISMRM)*.

## SERVICE

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**Conference Reviewer** MICCAI 2025; MICCAI 2024;

**Journal Reviewer** Image and Vision;

## SKILLS

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**Programming Languages** Python, C, C++, MatLab

**Deep Learning Frameworks** PyTorch, TensorFlow, Keras