Zhuo Zhang (张琢)

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(If you're interested in AI4S or medical image processing, feel free to reach out!)
[Google Scholar]

Biography

I am currently a Ph.D. student at the College of Computer, the National University of Defense Technology, supervised by Prof. Canqun Yang (Deputy Chief Designer of the Tianhe-2 project). I earned my M.S. degree in Information and Communication Engineering from Tiangong University in December 2023, under the supervision of Prof. Yong Yang (Top 2% Scientist Worldwide) and Prof. Hua Bai.

My research interest includes **AI4S** and **medical image processing**.

Research Experience

I am also a joint doctoral student and R&D engineer at the National Supercomputing Center of Tianjin. Our team was honored with the title of National Outstanding Engineering Team on January 19, 2024.

Research Projects

- **Intelligent Meningioma Grading Technology Based on Deep Learning**
  Principal Investigator, Tianjin Graduate Student Research and Innovation Project (2022 - Present)
  Project ID: 2022SKY126
  Led the project to integrate radiomics and deep learning for grading meningiomas. Developed lightweight segmentation models and explored multi-modality fusion techniques to address clinical challenges.

Publications(#co-first author, *corresponding author)

- **Zhang Z**, Xiong X, Zhang S, et al. "A pseudo-time stepping and parameterized physics-informed neural network framework for Navier–Stokes equations." *Physics of Fluids*, 2025; 37 (3): 033612.
- Zou S, **Zhang Z**#, & Guangwei Gao. "OCTAMamba: A State-Space Model Approach for Precision OCTA Vasculature Segmentation" *2025 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2025
- Zou S, **Zhang Z**#, Zou Y, & Guangwei Gao. "MambaMIC: An Efficient Baseline for Microscopic Image Classification with State Space Models" *IEEE International Conference on Multimedia&Expo 2025 (ICME)*, 2025
- **Z Zhang**, Miao Y, Yang Y, et al. "Deep Learning and Radiomics-Based Approach to Meningioma Grading: Exploring Peritumoral Edema Regions." *Physics in Medicine & Biology*, 2024.
- **Zhang Z**, Zhang X, Yang Y, et al. "Accurate segmentation algorithm of acoustic neuroma in the cerebellopontine angle based on ACP-TransUNet." *Frontiers in Neuroscience*, 2023, 17.

- **Zhang Z**, Wu H, Zhao H, et al. "A Novel Deep Learning Model for Medical Image Segmentation with Convolutional Neural Network and Transformer." *Interdisciplinary Sciences: Computational Life Sciences*, 2023, 15(4): 663-677.
- **Zhang Z**, Wen Y, Zhang X, et al. "CI-UNet: Melding ConvNeXt and Cross-Dimensional Attention for Robust Medical Image Segmentation." *Biomedical Engineering Letters*, 2024.
- Jiang Y, Wang S, Yao M, Xiao Q, Li Y, Bai H*, & **Zhang, Z***. "BCNet: integrating UNet and transformer for blood cell segmentation." *Signal, Image and Video Processing*, 2025;19(1), 14
- Wen Y#, **Zhang Z#**, et al. "TransC-GD-CD: Transformer based Conditional Generative Diffusion Change Detection Model." *Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 2024.
- Wu H#, **Zhang Z#**, Zhang Y, et al. "ACX-UNet: Multi-scale Lung Parenchyma Segmentation Study with Improved Skip Connection and Cross-Feature Extraction." *Signal, Image and Video Processing*, 2023.
- Bai H, **Zhang Z**, Yang Y, et al. "Meningioma Segmentation with GV-UNet: A Hybrid Model Using Ghost Module and Vision Transformer." *Signal, Image and Video Processing*, 2023.
- Xia X, Cheng Y, **Zhang Z**, et al. "Advancing Research on Odor-Induced Sweetness Enhancement: An EEG Local-Global Fusion Transformer Network for Sweetness Quantification Combined with EEG Technology." *Food Chemistry*, 2024: 141533.

Software Copyrights and Patents

- Precision Meningioma Segmentation System Based on Deep Learning (Registration No. 2023SRO375399)
- Brain Tumor Detection and Classification System Using Deep Learning (Registration No. 2022SR1338597)
- Automated Acoustic Neuroma Segmentation System (Registration No. 2022SR1338600)
- Multi-View Image Feature Fusion Method for Meningioma Grading (Patent Status: Under Substantive Examination, No. 2023103459329)

Honors & Awards

- China National Scholarship, Tianjin Innovation Scholarship, First-Class Academic Scholarship
- First Prize, National Industry Integration New Engineering Innovation Competition (Ranked 1st Nationally)
- First Prize, "Challenge Cup" China College Student Entrepreneurship Competition in Tianjin
- Second Prize, 14th China Service Outsourcing Innovation and Entrepreneurship Competition
- Second Prize, "3S Cup" National IoT Technology and Application Competition
- Third Prize, National Undergraduate Mathematics Competition

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2025/3/29 Update Zhuo Zhang