

Xiaole Zhao

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I am an assistant professor in the School of Computing and Artificial Intelligence, Southwest Jiaotong University (SWJTU), Chengdu, China. My research interests mainly include image restoration/generation, machine/deep learning and pattern recognition etc. Recently, I have been working on low-level computer vision tasks of medical images with deep learning techniques.

EDUCATION

- Sep. 2016 – **Biomedical Engineering**, *The School of Life Science and Technology*, — **Ph.D.**
Jun. 2020 **University of Electronic Science and Technology of China (UESTC)**, Chengdu, China
Advisor: Prof. Mark Zou (Founder of Alltech Medical System Co., LTD) and Tao Zhang
Overall GPA: 3.56/4.0, Major GPA: 3.62/4.0
- Sep. 2013 – **Software Engineering**, *The School of Computer Science and Technology*, — **M. S.**
Jun. 2016 **Southwest University of Science and Technology (SWUST)**, Mianyang, China
Advisor: Prof. Yadong Wu
Overall GPA: 3.72/4.0, Major GPA: 3.70/4.0
- Sep. 2009 – **Software Engineering**, *The School of Computer Science and Technology*, — **B. S.**
Jun. 2013 **Southwest University of Science and Technology (SWUST)**, Mianyang, China
Overall GPA: 3.64/4.0, Major GPA: 3.66/4.0

RESEARCH EXPERIENCE

- Jan. 2021 – **Assistant Professor**, *Southwest Jiaotong University*, Chengdu, China.
Now **Research:** Computer Vision, Image Processing, Deep Learning, Artificial Intelligence.
- Jul. 2020 – **Research Assistant**, *Southwest University of Science and Technology*, Mianyang, China.
- Jan. 2021 **Research:** Computer Vision, Image Processing, Deep Learning, Artificial Intelligence.
- Sep. 2016 – **Ph.D Candidate**, *University of Electronic Science and Technology of China*, Chengdu, China.
- Jun. 2020 **Research:** Medical Image Analysis, Magnetic Resonance Imaging, Deep Learning
- Sep. 2016 – **Project Officer**, *Alltech Medical System Co., LTD*, Chengdu, China.
- Jun. 2020 **Research:** Medical Image Analysis, Magnetic Resonance Imaging, Pattern Recognition, Deep Learning

PROJECT PARTICIPATION

- Jan. 2022 – **Laboratory of Cloud Computing and Intelligent Technology**, Chengdu, China.
- Dec. 2024 **Director:** Dr. Xiaole Zhao
Project: Research on super-resolution enhanced medical image diagnosis based on GANs
Source: Youth Science Funds of National Natural Science Foundation of China
- Jan. 2022 – **Laboratory of Cloud Computing and Intelligent Technology**, Chengdu, China.
- Dec. 2023 **Director:** Dr. Xiaole Zhao
Project: Research on joint learning methods of medical image resolution enhancement and automatic diagnosis/recognition
Source: Youth Science Funds of Sichuan Natural Science Foundation
- Jan. 2021 – **Laboratory of Cloud Computing and Intelligent Technology**, Chengdu, China.
- Dec. 2022 **Director:** Dr. Xiaole Zhao
Project: Research on unsupervised medical image super-resolution reconstruction for clinical diagnosis
Source: Fundamental Research Funds for the Central Universities
- Jan. 2019 – **Key Laboratory for NeuroInformation of Ministry of Education**, Chengdu, China.
- Dec. 2020 **Director:** Prof. Tao Zhang
Project: Research of multimodal magnetic resonance neuroimaging on the efficacy of antidepressants and the outcome mechanism of cognitive function in elderly depression
Source: Key Projects of Application Foundation in Sichuan Province

- Oct. 2016 – **Key Laboratory for NeuroInformation of Ministry of Education**, Chengdu, China.
 Jun. 2020 **Director:** Prof. Tao Zhang
Project: A new imaging mechanism of high field magnetic resonance – tissue dielectric tomography and its application in clinical diagnosis of breast and brain tumors
Source: National Key R&D Projects
- Aug. 2013 – **Laboratory of Virtual Reality and Visualization**, Mianyang, China.
 Oct. 2015 **Director:** Prof. Yadong Wu
Project: Research on models and algorithms for image super-resolution reconstruction
Source: Key Projects of Application Foundation in Sichuan Province

HONORS AND AWARDS

Jan. 2009	Merit Student of Mianyang City	Top 1%
Jun. 2010	First Prize of Annual Advanced Mathematics Competition of SWUST	Top 1%
Nov. 2010	National Scholarship (B.S.)	Top 1%
Mar. 2011	Merit Student of Mianyang City	Top 3%
Jan. 2013	Outstanding Graduate of Sichuan Province	Top 1%
Apr. 2014	First Prize of Graduate Scholarship	Top 1%
Nov. 2015	National Scholarship (M.S.)	Top 1%
Dec. 2015	Outstanding Master Graduates of Sichuan Province	Top 1%
Mar. 2016	Excellent Master Thesis of ACM	Top 1%
Oct. 2018	Second Prize of Postgraduate Scholarship	Top 5%

PROGRAMMING SKILLS

- ★ **Programming Languages**
 Matlab, C/C++, Python, L^AT_EX, OpenCV, Origin, Maple
- ★ **Deep Learning Tools**
 TensorFlow, Keras, MatConvNet, PyTorch

ACADEMIC ACTIVITIES

- ★ **Journal Reviewer**
- IEEE Computational Intelligence Magazine (CIM) 2021
 - IEEE Transactions on Medical Imaging (TMI) 2020
 - The Visual Computer (TVCJ) 2017
- ★ **Conference Attendance**
- International Society for Magnetic Resonance in Medicine, Sydney, Australia. 2020
 - International Conference on Intelligence Science and Big Data Engineering, Nanjing, China. 2019
 - Chinese Conference on Pattern Recognition and Computer Vision, Guangzhou, China. 2018
 - International Conference on Computational Visual Media, Cardiff University, UK. 2016
 - Chinese Conference on Computer Vision, Xi'an, China. 2015
- ★ **Membership**
- China Computer Federation (CCF) 2021
 - Sichuan Informatics Association of Traditional Chinese Medicine 2021
 - Institute of Electrical and Electronics Engineers (IEEE) 2019

PUBLICATIONS

Overview I have published more than 10 papers on reputable journals and conferences like TIP, TCSVT, CVPR, ICME, CVIU and Neurocomputing etc. Most of these papers focus on a low-level computer vision task, i.e., image super-resolution, but also involve deep learning, dictionary learning, pattern recognition and other related fields. My academic homepage is located at <https://zxlation.github.io/xiaole.github.com>.

- [J1] **Xiaole Zhao**, Yulun Zhang, Yun Qin, Qian Wang, Tao Zhang, Tianrui Li. “Single MR image super-resolution via channel splitting and serial fusion network.” **Knowledge-Based Systems**, vol. 246, pp. 108669, 2022.
- [J2] Haoqian Wang, Xiaowan Hu, **Xiaole Zhao** and Yulun Zhang. “Wide weighted attention multi-scale network for accurate MR image super-resolution.” **IEEE Transactions on Circuits and Systems for Video Technology**, vol. 32, no. 3, pp. 962–975, 2021.
- [J3] **Xiaole Zhao**, Yulun Zhang, Tao Zhang, Xueming Zou. “Channel splitting network for single MR image super-resolution.” **IEEE Transactions on Image Processing**, vol. 28, no. 11, pp. 5649–5662, 2019.
- [J4] **Xiaole Zhao**, Yadong Wu, Jinsha Tian, Hongying Zhang. “Single image super-resolution via blind blurring estimation and dictionary learning.” **Neurocomputing**, vol. 212, pp. 3–11, 2016.
- [J5] **Xiaole Zhao**, Xiafei Hu, Ying Liao, Tian He, Tao Zhang, Xueming Zou, Jinsha Tian. “Accurate MR image super-resolution via lightweight lateral inhibition network.” **Computer Vision and Image Understanding**, 2020, 201: 103075.
- [J6] **Xiaole Zhao**, Huali Zhang, Yuliang Zhou, Wei Bian, Tao Zhang, Xueming Zou. “Gibbs-ring artifact suppression with knowledge transfer from natural images to MR images.” **Multimedia Tools and Applications**, pp. 1–23, 2019.
- [J7] **Xiaole Zhao**, Yadong Wu, Jinsha Tian, Hongying Zhang. “Single image super-resolution via blind blurring estimation and anchored space mapping.” **Computational Visual Media**, vol. 21, no. 1, pp. 71–85, 2016.

Conference

- [C1] Xiaowan Hu, Zhihong Liu, Ruijun Ma, Yuanhao Cai, Haoqian Wang, **Xiaole Zhao**, and Yulun Zhang. “Pseudo 3D auto-correlation network for real Image denoising.” In: **CVPR**, Virtual Event, 2021: 16175-16184.
- [C2] Xiaowan Hu, Haoqian Wang, Yuanhao Cai, **Xiaole Zhao**, Yulun Zhang. “Pyramid orthogonal attention network based on dual self-similarity for accurate MR image super-resolution.” In: **ICME**, Shenzhen, China, 2021: 1-6.
- [C3] **Xiaole Zhao**, Xiafei Hu, Tao Zhang, Xueming Zou. “Isotropic MRI reconstruction with 3D convolutional neural network.” In: **ISMRM**, Sydney, Australia, 2020.
- [C4] **Xiaole Zhao**, Tao Zhang, Xueming Zou. “A lightweight lateral inhibition network for single MR image super-resolution.” In: **IScIDE**, Nanjing, China, 2019.
- [C5] **Xiaole Zhao**, Hangfei Liu, Tao Zhang, Wei Bian, and Xueming Zou. “Multilevel residual learning for single image super resolution.” In: **PRCV**, Guangzhou, China, 2018: 537–549.
- [C6] **Xiaole Zhao**, Yadong Wu, Jinsha Tian, and Hongying Zhang. “Single image super-resolution via blind blurring estimation and anchored space mapping.” In: **CVM**, Cardiff University, UK, 2016.
- [C7] **Xiaole Zhao**, Yadong Wu, Jinsha Tian, Hongying Zhang. “Single image super-resolution via blind blurring estimation and dictionary learning.” In: **CCCV**, Xi’an, China, 2015: 22–33.

CONTACTS

- Mark Zou** **University of Electroic Science and Technology of China** **Ph.D Supervisor.**
 USA Instruments (Current GE Coils Department), President & CEO
 GE Medical Group, Vice President of Medical Department
 Picker (Now Philips Medical Department), Senior Scientist
 Alltech Medical System Co., LTD, Founder & CEO
Email: mark.zou@alltechmed.com
- Tao Zhang** **University of Electroic Science and Technology of China** **Ph.D Supervisor.**
 Laboratory of National High Magnetic Field (USA), Research Assistant
 GE Global R & D Center, Senior Engineer
 Alltech Medical System Co., LTD, Vice President of R & D, CTO
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Yadong Wu Southwest University of Science and Technology
China Computer Federation, Senior Member
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M. S. Supervisor.