Zhiwen Shao (邵志文**)**

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Biography

He is now a **tenured associate professor** and a **graduate advisor** at the School of Computer Science and Technology, China University of Mining and Technology (CUMT), as well as a postdoctoral fellow at the Department of Computer Science and Engineering, Shanghai Jiao Tong University (SJTU). He received the Ph.D. degree in Computer Science and Technology from the SJTU in Aug. 2020, and worked as a postdoctoral fellow at the SJTU since Dec. 2022, both with *Prof. Lizhuang Ma* (the recipient of the National Science Fund for Distinguished Young Scholars (国家杰出青年科学基金)) as the advisor. From Nov. 2017 to Nov. 2018, he was a joint Ph.D. student at the Multimedia and Interactive Computing Lab, Nanyang Technological University (NTU), advised by *Prof. Jianfei Cai* (IEEE Fellow). Before that, he received the B.Eng. degree in Computer Science and Technology from the Northwestern Polytechnical University (NPU) in Jul. 2015, honored as an outstanding graduate.

He has been sponsored with fundings as the principal investigator like **Hong Kong Scholars Program** (人社部"香江学者"人才计划), Young Scientists Fund of the National Natural Science Foundation of China (国家自然科学基金青年科学基金项目), High-Level Talent Program for Innovation and Entrepreneurship (ShuangChuang Doctor) of Jiangsu Province (江苏省"双创博士"人才项目), and Talent Program for Deputy General Manager of Science and Technology of Jiangsu Province (江苏省"科技副总"人才项目). He has won the Outstanding Prize for Scientific and Technological Progress of Shanghai Municipality (上海市科技进步特等奖), the Super AI Leader (SAIL) TOP 30 project at World Artificial Intelligence Conference (世界人工智能大会卓越人工智能引领者奖Top 30榜单项目), and One of the Top 10 Scientific Advances in the Shanghai Jiao Tong University (上海交通大学"十大科技进展"入选项目), as an important member. He has been serving as a publication chair for CGI 2023, as well as a program committee member or a reviewer in top journals and conferences such as IEEE TPAMI / TIP, IJCV, CVPR, ICCV, IJCAI, AAAI, and ACM MM.

His Google Scholar citations is 665 with the h-index of 11. His research interests lie in the fields of Computer Vision and Computer Graphics, in particular, *Fine-Grained Visual Affective Analysis*. He has continuously contributed in this area, and has published 42 academic papers in popular journals and conferences including IJCV, CVPR, ECCV, ACM MM, and IEEE TIP / TCSVT / TAFFC / TMM. Specifically, he has published 23 papers as the first author or the corresponding author, *in which the representative works can be found below*. For example, the work in ECCV'18 and IJCV'21 with total Google Scholar citations 277 proposes the first joint learning framework of facial action unit (AU) detection and face alignment, which is included in a popular facial expression analysis toolbox Py-Feat. The work in TAFFC'22 proposes a novel facial action unit detection method using attention and relation learning, which is an ESI highly cited paper.

Education Experiences

Sept. 2015 - Aug. 2020	*Ph.D. Degree* from the Department of Computer Science and Engineering, Shanghai Jiao Tong University, Shanghai, China (*Top 5 in mainland China*) *Research Topic:* Fine-Grained Facial Expression Analysis *Advisor*: Prof. Lizhuang Ma
Nov. 2017 - Nov. 2018	*Joint Ph.D. Student* at the School of Computer Science and Engineering, Nanyang Technological University, Singapore (*Top 20 in the world*) *Research Topic:* Joint Facial Action Unit Recognition and Face Alignment *Advisor*: Prof. Jianfei Cai
Sept. 2011 - Jul. 2015	*B.Eng. Degree* from the School of Computer Science, Northwestern Polytechnical University, Xi'an, China (*Project 985*) *Thesis Topic:* Face Verification Based on Deep Learning *Thesis Advisor*: Prof. Dongmei Jiang

Professional Experiences

Jan. 2023 - Present	*Tenured Associate Professor* at the School of Computer Science and Technology, China University of Mining and Technology, Xuzhou, China (*Project 211*) *Research Topic:* Computer Vision and Computer Graphics
Dec. 2022 - Present	*Postdoctoral Fellow* at the Department of Computer Science and Engineering, Shanghai Jiao Tong University, Shanghai, China (*Top 5 in mainland China*) *Research Topic:* Fine-Grained Visual Affective Analysis *Advisor*: Prof. Lizhuang Ma
Aug. 2020 - Dec. 2022	*Tenure-Track Associate Professor* at the School of Computer Science and Technology, China University of Mining and Technology, Xuzhou, China (*Project 211*) *Research Topic:* Computer Vision and Computer Graphics
Mar. 2015 - Sept. 2016	*Intern* in the Joint Project of Shanghai Jiao Tong University and Tencent, YouTu Lab, Tencent Inc., Shanghai, China *Research Topic:* Face Analysis Based on Deep Learning

Sponsored Projects

- 2023: Hong Kong Scholars Program (人社部"香江学者"人才计划), *Principal Investigator*, No. XJ2023037
- 2021: Young Scientists Fund of the National Natural Science Foundation of China (国家自然科学基金青年科学基金项目), *Principal Investigator*, No. 62106268
- 2023: General Project of China Postdoctoral Science Foundation (中国博士后科学基金面上项目), *Principal Investigator*, No. 2023M732223
- 2021: High-Level Talent Program for Innovation and Entrepreneurship (ShuangChuang Doctor) of Jiangsu Province (江苏省"双创博士"人才项目), *Principal Investigator*, No. JSSCBS20211220
- 2022: Talent Program for Deputy General Manager of Science and Technology of Jiangsu Province (江苏省"科技副总"人才项目), *Principal Investigator*, No. FZ20220440

- 2023: Outstanding Young Teacher Program of China University of Mining and Technology (中国矿业大学优秀青年骨干教师人才项目), *Principal Investigator*

- 2021: Young Scientists Fund of the Fundamental Research Funds for the Central Universities (中央高校基本科研业务费青年科学基金项目), *Principal Investigator*, No. 2021QN1072

- 2022: Patent License Project for Method and Device of Facial Action Unit Recognition Based on Joint Learning and Optical Flow Estimation, *Principal Investigator*

- 2023: Enterprise Project for Anti-Drowning Safety Management System in Swimming Venue Based on AI and Big Data Analysis, *Principal Investigator*

- 2023: Opening Fund of Key Laboratory of Image Processing and Intelligent Control (Huazhong University of Science and Technology), Ministry of Education, *Principal Investigator*

- 2020: Start-Up Grant of China University of Mining and Technology, *Principal Investigator*

- 2022: Participation in Computer Graphics International (CGI) 2022 Supported by K.C.Wong Education Foundation, *Principal Investigator*

Representative Publications

- **Z. Shao**, Z. Liu, J. Cai, and L. Ma, "Jâa-net: Joint facial action unit detection and face alignment via adaptive attention," *International Journal of Computer Vision (IJCV)*, vol. 129, no. 2, pp. 321–340, 2021. **(CCF A, Google Citations: 99)**

- **Z. Shao**, Y. Zhou, J. Cai, H. Zhu, and R. Yao, "Facial action unit detection via adaptive attention and relation," *IEEE Transactions on Image Processing (TIP)*, vol. 32, pp. 3354–3366, 2023. **(CCF A)**

- **Z. Shao**, H. Zhu, J. Tang, X. Lu, and L. Ma, "Explicit facial expression transfer via fine-grained representations," *IEEE Transactions on Image Processing (TIP)*, vol. 30, pp. 4610–4621, 2021. **(CCF A)**

- **Z. Shao**, Z. Liu, J. Cai, and L. Ma, "Deep adaptive attention for joint facial action unit detection and face alignment," in *European Conference on Computer Vision (ECCV)*. Springer, 2018, pp. 725–740. **(CCF B, Google Citations: 178)**

- **Z. Shao**, Z. Liu, J. Cai, Y. Wu, and L. Ma, "Facial action unit detection using attention and relation learning," *IEEE Transactions on Affective Computing (TAFFC)*, vol. 13, no. 3, pp. 1274–1289, 2022. **(CCF B, ESI Highly Cited Paper)**

- **Z. Shao**, J. Cai, T.-J. Cham, X. Lu, and L. Ma, "Unconstrained facial action unit detection via latent feature domain," *IEEE Transactions on Affective Computing (TAFFC)*, vol. 13, no. 2, pp. 1111–1126, 2022. **(CCF B)**

- **Z. Shao**, Y. Su, Y. Zhou, F. Meng, H. Zhu, B. Liu, and R. Yao, "Ct-net: Arbitrary-shaped text detection via contour transformer," *IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)*, early access, 2023. **(CCF B)**

- Y. Su[†], **Z. Shao**[†*], Y. Zhou, F. Meng, H. Zhu, B. Liu, and R. Yao, "Textdct: Arbitrary-shaped text detection via discrete cosine transform mask," *IEEE Transactions on Multimedia (TMM)*, early access, 2022. **(CCF B)**

- H. Zhu, **Z. Shao**[*], Y. Zhou[*], G. Wang, P. Cheng, and L. Li, "Personalized image aesthetics assessment with attribute-guided fine-grained feature representation," in *ACM Multimedia (MM)*. ACM, 2023. **(CCF A)**

- 邵志文, 周勇, 谭鑫, 马利庄, 刘兵, 姚睿, "基于深度学习的表情动作单元识别综述," 电子学报, vol. 50, no. 8, pp. 2003–2017, 2022. **(CCF中文A类)**
  Z. Shao, Y. Zhou, X. Tan, L. Ma, B. Liu, and R. Yao, "Survey of expression action unit recognition

based on deep learning," *Acta Electronica Sinica*, vol. 50, no. 8, pp. 2003–2017, 2022. **(CCF Chinese A)**

- **Z. Shao**, H. Zhu, Y. Hao, M. Wang, and L. Ma, "Learning a multi-center convolutional network for unconstrained face alignment," in *IEEE International Conference on Multimedia and Expo (ICME)*. IEEE, 2017, pp. 109–114. **(CCF B, Oral)**

- **Z. Shao**, S. Ding, Y. Zhao, Q. Zhang, and L. Ma, "Learning deep representation from coarse to fine for face alignment," in *IEEE International Conference on Multimedia and Expo (ICME)*. IEEE, 2016, pp. 1–6. **(CCF B)**

- **Z. Shao**, S. Ding, H. Zhu, C. Wang, and L. Ma, "Face alignment by deep convolutional network with adaptive learning rate," in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*. IEEE, 2016, pp. 1283–1287. **(CCF B, Oral)**

- **Z. Shao**, F. Li, Y. Zhou, H. Chen, H. Zhu, and R. Yao, "Identity-invariant representation and transformer-style relation for micro-expression recognition," *Applied Intelligence (APIN)*, early access, 2023. **(CCF C)**

- **Z. Shao**, Y. Zhou, B. Liu, H. Zhu, W.-L. Du, and J. Zhao, "Facial action unit detection via hybrid relational reasoning," *The Visual Computer (TVC)*, vol. 38, no. 9, pp. 3045–3057, 2022. **(CCF C)**

- **Z. Shao**, H. Zhu, X. Tan, Y. Hao, and L. Ma, "Deep multi-center learning for face alignment," *Neurocomputing*, vol. 396, pp. 477–486, 2020. **(CCF C)**

- H. Fanta, **Z. Shao***, and L. Ma*, "Sitgru: Single-tunnelled gated recurrent unit for abnormality detection," *Information Sciences (INS)*, vol. 524, pp. 15–32, 2020. **(CCF B)**

- J. Tang, **Z. Shao***, and L. Ma*, "Fine-grained expression manipulation via structured latent space," in *IEEE International Conference on Multimedia and Expo (ICME)*. IEEE, 2020, pp. 1–6. **(CCF B, Oral)**

- L. Li, J. Tang, **Z. Shao***, X. Tan, and L. Ma*, "Sketch-to-photo face generation based on semantic consistency preserving and similar connected component refinement," *The Visual Computer (TVC)*, vol. 38, no. 11, pp. 3577–3594, 2022. **(CCF C)**

- H. Fanta, **Z. Shao***, and L. Ma*, ""Forget" the forget gate: Estimating anomalies in videos using self-contained long short-term memory networks," in *Computer Graphics International Conference (CGI)*. Springer, 2020, pp. 169–181. **(CCF C, Oral)**

- W. Wang, **Z. Shao***, W. Zhong, and L. Ma*, "Cpcs: Critical points guided clustering and sampling for point cloud analysis," in *International Conference on Neural Information Processing (ICONIP)*. Springer, 2020, pp. 327–335. **(CCF C)**

- J. Tang, **Z. Shao***, and L. Ma*, "EGGAN: Learning Latent Space for Fine-Grained Expression Manipulation," *IEEE MultiMedia (MM)*, vol. 28, no. 3, pp. 42–51, 2021. **(SCI Q2)**

- J. Zhou, X. Tan, **Z. Shao***, and L. Ma, "FVNet: 3D Front-View Proposal Generation for Real-Time Object Detection from Point Clouds," in *International Congress on Image and Signal Processing, BioMedical Engineering and Informatics (CISP-BMEI)*. IEEE, 2019, pp. 1–8. **(EI, Google Citations: 32)**

† Equal contribution.
* Corresponding author.

Granted Patents

- 2023: A Method and Device of Facial Action Unit Recognition Based on Adaptive Attention and Spatio-Temporal Correlation, *The First Inventor*, ZL202210606040.5

- 2021: A Method and Device of Facial Action Unit Recognition Based on Joint Learning and Optical Flow Estimation, *The First Inventor*, ZL202110360938.4

- 2018: Identity Verification System V1.0 Based on Face Recognition, *Software Copyright*, *The Second Inventor*, 2018SR160441

- 2022: A Method and Device of User Personality Characteristic Prediction Based on Multi-Modal Information Fusion, *The Third Inventor*, ZL202111079044.4

Awards

- 2020: Outstanding Prize for Scientific and Technological Progress of Shanghai Municipality (上海市科技进步特等奖), *11/18*

- 2019: Super AI Leader (SAIL) TOP 30 project at World Artificial Intelligence Conference (世界人工智能大会卓越人工智能引领者奖Top 30榜单项目), *6/13*

- 2020: One of the Top 10 Scientific Advances in the Shanghai Jiao Tong University (上海交通大学"十大科技进展"入选项目), *8/9*

- 2023: Excellent Thesis Advisor of the China University of Mining and Technology

- 2021: Excellent Headteacher of the China University of Mining and Technology

- 2022: Honorable Mention for Teaching Competition at the School of Computer Science and Technology, China University of Mining and Technology

- 2016-2019: KoGuan Endeavor Scholarship, Suzhou Yucai Scholarship

- 2015: Outstanding Graduate of the Northwestern Polytechnical University

- 2012-2015: Outstanding Student of the Northwestern Polytechnical University

- 2012-2015: National Endeavor Scholarship, Samsung China Scholarship, Wu Yajun Scholarship

Teaching Experiences

- 2023 - Present: Introduction to Information Science, *Lecturer*

- 2022 - Present: Image Processing and Computer Vision, *Lecturer (Principal of Course)*

- 2022 - Present: Practice for Python Programming, *Lecturer*

- 2021: Computational Thinking and Artificial Intelligence Foundation, *Teaching Assistant*

- 2020: Practice for Computational Thinking and Artificial Intelligence Foundation, *Lecturer*

- 2020: Technology of Cloud Computing and Big Data, *Teaching Assistant*

- 2020: Introduction to Information Science, *Teaching Assistant*

Academic Services

- Member in China Computer Federation (CCF): Professional Committee of Computer Aided Design and Graphics
- Member in Chinese Association for Artificial Intelligence (CAAI): Professional Committee of Pattern Recognition, Professional Committee of Knowledge Engineering and Distributed Intelligence, Professional Committee of Machine Learning
- Member in China Society of Image and Graphics (CSIG): Professional Committee of Machine Vision, Professional Committee of Animation and Digital Entertainment
- Publication Chair: Computer Graphics International (CGI) 2023
- Session Chair: Computer Graphics International (CGI) 2022, Shanghai Cross-Media Intelligence and Computer Vision Forum 2019
- Program Committee Member/Conference Reviewer: CVPR, ICCV, IJCAI, AAAI, ACM MM, CGI, ICONIP, ICIG, NCIIP
- Journal Reviewer: IEEE TPAMI, IJCV, IEEE TIP, IEEE TAFFC, IEEE TMM, Signal Processing, SPIC, IET IP, TVC, Computers & Graphics, IEEE Sensors, Journal of Electronic Imaging, Frontiers in Computer Science