Zhiwen Shao (邵志文)

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Biography

He is now an **Associate Professor**, 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 SJTU, advised by *Prof. Lizhuang Ma*. From 2017 to 2018, he was a joint Ph.D. student at the Multimedia and Interactive Computing Lab, Nanyang Technological University (NTU), advised by *Prof. Jianfei Cai*. Before that, he received the B.Eng. degree in Computer Science and Technology from the Northwestern Polytechnical University (NPU) in 2015. He has been sponsored with fundings such as Young Scientists Fund of the National Natural Science Foundation of China, and High-Level Talent Program for Innovation and Entrepreneurship (ShuangChuang Doctor) of Jiangsu Province. He has been serving as a program committee member or a reviewer in top journals and conferences such as IEEE TPAMI, IJCV, IEEE TIP, IEEE CVPR, IJCAI, and AAAI.

His Google Scholar citations is 472 with the h-index of 10. His research interests lie in the fields of Computer Vision and Deep Learning, in particular, *Fine-Grained Visual Affective Analysis*. He has continuously contributed in this area, and has published 34 academic papers in popular journals and conferences including IJCV, IEEE TIP, ECCV, IEEE TAFFC, and IEEE TMM. Specifically, he has published 19 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 202 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 as of July/August 2022.

Education Experiences

Sept. 2015 - Aug. 2020	*Ph.D. Degree* from the Department of Computer Science and Engineering, Shanghai Jiao Tong University, Shanghai, 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 *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 *Thesis Topic:* Face Verification Based on Deep Learning *Thesis Advisor*: Prof. Dongmei Jiang

Professional Experiences

Dec. 2022 - Present	*Postdoctoral Fellow* at the Department of Computer Science and Engineering, Shanghai Jiao Tong University, Shanghai, China *Research Topic:* Fine-Grained Visual Affective Analysis *Advisor*: Prof. Lizhuang Ma
Aug. 2020 - Present	*Associate Professor* at the School of Computer Science and Technology, China University of Mining and Technology, Xuzhou, China *Research Topic:* Computer Vision and Deep Learning
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

- 2021: Young Scientists Fund of the National Natural Science Foundation of China, *Principal Investigator*, No. 62106268

- 2021: High-Level Talent Program for Innovation and Entrepreneurship (ShuangChuang Doctor) of Jiangsu Province, *Principal Investigator*, No. JSSCBS20211220

- 2022: Talent Program for Deputy General Manager of Science and Technology of Jiangsu Province, *Principal Investigator*, No. FZ20220440

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

- 2021: Young Scientists Fund of the Fundamental Research Funds for the Central Universities, *Principal Investigator*, No. 2021QN1072

- 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: 59)**

- **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: 143)**

- **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)**

- 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)**

- 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**, 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)**

Under Review

- **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)*, 2022. **(CCF A)**
- **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)*, 2022. **(CCF B)**

[†] Equal contribution.
[*] Corresponding author.

Granted Patents

- 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: Special Prize for Scientific and Technological Progress of Shanghai Municipality, *11/18*
- 2019: Super AI Leader (SAIL) TOP 30 project at World Artificial Intelligence Conference, *6/13*
- 2020: One of the Top 10 Scientific Advances in the Shanghai Jiao Tong University, *8/9*
- 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

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

- Session Chair: Computer Graphics International (CGI) 2022, Shanghai Cross-Media Intelligence and Computer Vision Forum 2019

- Program Committee Member/Conference Reviewer: CVPR, 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