Jian Zhao

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RESEARCH INTERESTS

Artificial Intelligence, Pattern Recognition, Machine Learning, Computer Vision, and Multimedia Analytics, including Unconstrained/Heterogeneous/Large-Scale/Set-based/Low-Shot Face Recognition, Image Generation, Super Resolution with Adversarial Learning, Human Parsing, Model Compression with Knowledge Distillation, and Small Object Detection/Tracking.

EDUCATION

Ph.D. Artificial Intelligence, Department of Electrical and Computer Engineering, Faculty of Engineering, National University of Singapore, 2016.01-2019.04.
Thesis: Deep Learning for Human-Centric Image Analysis: From Face Recognition to Human Parsing.
Advisors: Assis. Prof. Jiashi Feng, Assoc. Prof. Shuicheng Yan.

M.Eng. Computer Science and Technology, School of Computer, National University of Defense Technology, 2012.09-2014.12.
Advisor: Prof. Xucan Chen.

B.Eng. Automation, School of Automation Science and Electrical Engineering, Beihang University, 2008.09-2012.07.
Advisors: Dr. Shaopeng Dong, Prof. Mei Yuan.

ACADEMIC EXPERIENCE

Assistant Professor, Institute of North Electronic Equipment, Beijing, China, Jul. 2019 - Present.

Rhino-Bird Visiting Scholar, Tencent AI Lab, Shenzhen, China, Dec. 2019 - Dec. 2020.

"Texpert" Research Scientist, FiT DeepSea AI Lab, Tencent, Shenzhen, China, Dec. 2018 - Apr. 2019.

Research Intern, Core Technology Group, Learning & Vision, Panasonic R&D Center, Singapore, May. 2016 - Sep. 2018.

Research Intern, China Aerospace Science and Industry Corporation, Beijing, China, Sep. 2011 - Jun. 2012.

TEACHING

Graduate Assistant, Programming for Computer Interfaces (EE2024), National University of Singapore, Aug. 2016 - Dec. 2017.

AWARDS AND HONOURS

2020-2022 Young Talent Support Project, China Association for Science and Technology.

2021-2023 Beijing Young Talent Support Project, Beijing Association for Science and Technology.

A-Level Certificate, 4th author, China Artificial Intelligence Competition Activity Recognition Track, 2020.

Lee Hwee Kuan Award (**Gold Award**), 1st author, PREMIA 2019.

Best Student Paper Award, 1st author, ACM MM 2018.

1st-Place Award, 1st author, MS-Celeb-1M face recognition hard set/ random set/low-shot learning challenges with ICCV 2017.

1st-Place Award, 1st author, NIST IJB-A unconstrained face verification/ identification challenges, 2017.

2nd-Place Award, 1st author, L.I.P human parsing/pose estimation challenges with CVPR 2017.

3rd-Place Award, 2nd author, MS-Celeb-1M face recognition hard set challenge with ACM MM 2016.

Excellent Student Award (**<10%**), School of Computer, National University of Defense Technology, 2016.

Excellent Student Award (**<10%**), School of Computer, National University of Defense Technology, 2015.

Excellent Graduate Award (**<2%**), National University of Defense Technology, 2014.

Excellent Student Award (**<2%**), National University of Defense Technology, 2014.

Guanghua Fellowship (**<2%**), National University of Defense Technology, 2014.

Contribution Prize, for Engineering Implementation of Tianhe-2 supercomputer (No.1 on Top500, Jun, 2013), National University of Defense Technology, 2013.

3rd-Place Award, 13th "Great Wall Information Cup" challenge, National University of Defense Technology, 2013.

Excellent Student Award (**<10%**), School of Computer, National University of Defense Technology, 2013.

1st-Place Award, Big Data Processing and Information Sub-Forum of the 6th Graduate Innovation Forum, Provincial Education Department of Hunan Province, 2013.

Excellent Graduate Award (**<2%**), Beihang University, 2012.

2nd-Place Award, 5th Student Research Training Program (SRTP), Beihang University, 2012.

National Endeavor Fellowship, Central Government & Beijing Government of China, 2011.

3rd-Place Award, "Feng Ru Cup" challenge, School of Automation Science and Electrical Engineering, Beihang University, 2011.

SMC Fellowship, Beihang University, 2010.

PUBLICATIONS
Journal Articles

Jian Zhao, Shuicheng Yan, Jiashi Feng. *Towards Age-Invariant Face Recognition*. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2020. (**T-PAMI**).

Jian Zhao, Junliang Xing, Lin Xiong, Shuicheng Yan, Jiashi Feng. *Recognizing Profile Faces by Imagining Frontal View*. International Journal of Computer Vision, 2019. (**IJCV**).

Jian Zhao, Jianshu Li, Hengzhu Liu, Shuicheng Yan, Jiashi Feng. *Fine-Grained Multi-Human Parsing*. International Journal of Computer Vision, 2019. (**IJCV**).

Jian Zhao, Lin Xiong, Jianshu Li, Junliang Xing, Shuicheng Yan, Jiashi Feng. *3D-Aided Dual-Agent GANs for Unconstrained Face Recognition*. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2018. (**T-PAMI**).

Jianshu Li*, **Jian Zhao***, Congyan Lang, Yidong Li, Yunchao Wei, Gudong Guo, Terence Sim, Shuicheng Yan, Jiashi Feng. *Multi-Human Parsing With a Graph-based Generative Adversarial Model*. ACM Transactions on Multimedia

Computing, Communications, and Applications, 2020. (**T-OMM**). (* indicates equal contribution)

Xiaoguang Tu, **Jian Zhao***, Qiankun Liu, Wenjie Ai, Guodong Guo, Zhifeng Li, Wei Liu, Jiashi Feng. *Joint Face Image Restoration and Frontalization for Recognition*. IEEE Transactions on Circuits and Systems for Video Technology, 2021. (**T-CSVT**). (* indicates corresponding author)

Kai Hu, **Jian Zhao***, Yu Liu, Yukai Niu, Gang Ji. *Structure-Guided Image Inpainting*. Journal of Beijing University of Aeronautics and Astronautics, 2021. (**JBUAA**). (* indicates corresponding author)

Xiaoguang Tu, **Jian Zhao**, Mei Xie, Zihang Jiang, Akshaya Balamurugan, Yao Luo, Yang Zhao, Lingxiao He, Zheng Ma, Jiashi Feng. *3D Face Reconstruction from A Single Image Assisted by 2D Face Images in the Wild*. IEEE Transactions on Multimedia, 2020. (**T-MM**).

Fang Zhao, Jiashi Feng, **Jian Zhao**, Wenhan Yang, Shuicheng Yan. *Robust LSTM-Autoencoders for Face De-Occlusion in the Wild*. IEEE Transactions on Image Processing, 2017. (**T-IP**).

Xiaoguang Tu, Zheng Ma, **Jian Zhao**, Guodong Du, Mei Xie, Jiashi Feng. *Learning Generalizable and Identity-Discriminative Representations for Face Anti-Spoofing*. ACM Transactions on Intelligent Systems and Technology, 2020. (**T-IST**).

Zhikang Wang, Lihuo He, Xiaoguang Tu, **Jian Zhao**, Xinbo Gao, Shengmei Shen, Jiashi Feng. *Robust Video-based Person Re-Identification by Hierarchical Mining*. IEEE Transactions on Circuits and Systems for Video Technology, 2021. (**T-CSVT**).

Liqian Liang, Congyan Lang, Yidong Li, Songhe Feng, **Jian Zhao**. *Fine-Grained Facial Expression Recognition in the Wild*. IEEE Transactions on Information Forensics and Security, 2020. (**T-IFS**).

Proceedings

Jian Zhao, Jianshu Li, Xiaoguang Tu, Fang Zhao, Yuan Xin, Junliang Xing, Hengzhu Liu, Shuicheng Yan, Jiashi Feng. *Multi-Prototype Networks for Unconstrained Set-based Face Recognition*. International Joint Conference on Artificial Intelligence (**IJCAI** 2019). Oral.

Jian Zhao, Yu Cheng, Yi Cheng, Yang Yang, Fang Zhao, Jianshu Li, Hengzhu Liu, Shuicheng Yan, Jiashi Feng. *Look Across Elapse: Disentangled Representation Learning and Photorealistic Cross-Age Face Synthesis for Age-Invariant Face Recognition*. AAAI Conference on Artificial Intelligence (**AAAI** 2019). Oral.

Jian Zhao, Yu Cheng, Yan Xu, Lin Xiong, Jianshu Li, Fang Zhao, Karlekar Jayashree, Sugiri Pranata, Shengmei Shen, Junliang Xing, Shuicheng Yan, Jiashi Feng. *Towards Pose Invariant Face Recognition in the Wild*. IEEE

International Conference on Computer Vision and Pattern Recognition (**CVPR** 2018).

Jian Zhao, Lin Xiong, Yu Cheng, Yi Cheng, Jianshu Li, Li Zhou, Yan Xu, Karlekar Jayashree, Sugiri Pranata, Shengmei Shen, Junliang Xing, Shuicheng Yan, Jiashi Feng. *3D-Aided Deep Pose-Invariant Face Recognition*. International Joint Conference on Artificial Intelligence (**IJCAI** 2018). Oral.

Jian Zhao, Jianshu Li, Yu Cheng, Terence Sim, Shuicheng Yan, Jiashi Feng. *Understanding Humans in Crowded Scenes: Deep Nested Adversarial Learning and A New Benchmark for Multi- Human Parsing*. ACM Multimedia Conference (**ACM MM** 2018). Best Student Paper.

Jian Zhao, Lin Xiong, Karlekar Jayashree, Jianshu Li, Fang Zhao, Zhecan Wang, Sugiri Pranata, Shengmei Shen, Shuicheng Yan, Jiashi Feng. *Dual-Agent GANs for Photorealistic and Identity Preserving Profile Face Synthesis*. Advances in Neural Information Processing Systems (**NeurIPS** 2017).

Jian Zhao, Jianshu Li, Fang Zhao, Shuicheng Yan, Jiashi Feng. *Marginalized CNN: Learning Deep Invariant Representations*. British Machine Vision Conference (**BMVC** 2017).

Fang Zhao*, **Jian Zhao***, Shuicheng Yan, Jiashi Feng. *Dynamic Conditional Networks for Few-Shot Learning*. European Conference on Computer Vision (**ECCV** 2018). (* indicates equal contribution)

Zhecan Wang, **Jian Zhao**, Cheng Lu, Han Huang, Fan Yang, Lianji Li, Yandong Guo. *Learning to Detect Head Movement in Unconstrained Remote Gaze Estimation in the Wild*. IEEE Winter Conference on Applications of Computer Vision (**WACV** 2020).

Jianshu Li, **Jian Zhao**, Yunpeng Chen, Sujoy Roy, Shuicheng Yan, Jiashi Feng, Terence Sim. *Multi-Human Parsing Machines*. ACM Multimedia Conference (**ACM MM** 2018).

Jianshu Li, **Jian Zhao**, Fang Zhao, Hao Liu, Jing Li, Shengmei Shen, Jiashi Feng, and Terence Sim. *Robust Face Recognition with Deep Multi-View Representation Learning*. ACM Multimedia Conference (**ACM MM** 2016). Oral.

Fang Zhao, Jianshu Li, **Jian Zhao**, Jiashi Feng. *Weakly Supervised Phrase Localization with Multi-Scale Anchored Transformer Network*. IEEE International Conference on Computer Vi- sion and Pattern Recognition (**CVPR** 2018).

Fang Zhao, Shengcai Liao, Guosen Xie, **Jian Zhao**, Kaihao Zhang, Ling Shao. *Unsupervised Domain Adaptation with Noise Resistible Mutual-Training for Person Re-identification*. European Conference on Computer Vision (**ECCV** 2020).

Jianshu Li, Pan Zhou, Yunpeng Chen, **Jian Zhao**, Sujoy Roy, Yan Shuicheng, Jiashi Feng, Terence Sim. *Task Relation Networks*. IEEE Winter Conference on Applications of Computer Vision (**WACV** 2019).

Jianshu Li, Shengtao Xiao, Fang Zhao, **Jian Zhao**, Jianan Li, Jiashi Feng, Shuicheng Yan, Terence Sim. *Integrated Face Analytics Networks through Cross-Dataset Hybrid Training*. ACM Multimedia Conference (**ACM MM** 2017). Oral.

Yuqi Gong, Xuehui Yu, Yao Ding, Xiaoke Peng, **Jian Zhao**, Zhenjun Han. *Effective Fusion Factor in FPN for Tiny Object Detection*. IEEE Winter Conference on Applications of Computer Vision (**WACV** 2021).

Workshop

Jian Zhao, Jianshu Li, Xuecheng Nie, Yunpeng Chen, Zhecan Wang, Shuicheng Yan, Jiashi Feng. *Self-Supervised Neural Aggregation Networks for Human Parsing*. Workshop on *Visual Understanding of Humans in Crowd Scene* with with CVPR 2017.

Jian Zhao, Jianshu Li, Xuecheng Nie, Yunpeng Chen, Zhecan Wang, Shuicheng Yan, Jiashi Feng. *Self-Supervised Neural Aggregation Networks for Human Parsing*. Workshop on *Visual Understanding of Humans in Crowd Scene* with with CVPR 2017.

Yu Cheng*, **Jian Zhao***, Zhecan Wang, Yan Xu, Karlekar Jayashree, Shengmei Shen, Jiashi Feng. *Know You at One Glance: A Compact Vector Representation for Low-Shot Learning*. Workshop on *MS-Celeb-1M Challenge* with ICCV 2017. (* indicates equal contribution).

Zhecan Wang*, **Jian Zhao***, Yu Cheng, Shengtao Xiao, Jianshu Li, Fang Zhao, Jiashi Feng, and Ashraf Kassim. *Conditional Dual-Agent GANs for Photorealistic and Annotation Preserving Image Synthesis*. Workshop on *FaceHUB* with BMVC 2017. (* indicates equal contribution).

Yan Xu, Yu Cheng, **Jian Zhao**, Zhecan Wang, Lin Xiong, Karlekar Jayashree, Sugiri Pranata, Shengmei Shen, Jiashi Feng. *High Performance Large Scale Face Recognition with Multi-Cognition Softmax and Feature Retrieval*. Workshop on *MS-Celeb-1M Challenge* with ICCV 2017.

Jianshu Li, Yunpeng Chen, Shengtao Xiao, **Jian Zhao**, Sujoy Roy, Jiashi Feng, Shuicheng Yan, Terence Sim. *Estimation of Affective Level in the Wild with Multiple Memory Networks*. Workshop on *First Faces in-the-wild Challenge* with CVPR 2017.

INVITED TALKS
Understanding Humans in Visual Scenes

Huawei Noah's Ark Lab, China, 2019.

Deep Learning for Human-Centric Image Analysis: From Face Recognition to Human Parsing

Xi'an Jiaotong-Liverpool University, China, 2020

Beijing Jiaotong University, China, 2019

Baidu, China, 2019.

Center for Research on Intelligent Perception and Computing, National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences, China, 2019.

Peng Cheng Laboratory, China, 2019.

CoLab, School of Computer, Beihang University, China, 2019.

Margin-based Representation Learning, Residual Knowledge Distillation and Prior-Aided Super Resolution

Tencent Deep Sea AI Lab, China, 2019.

Deep Learning for Human-Centric Image Understanding

UBTECH, China, 2018.

Jiang Men, China, 2018.

VALSE Webinar 18-26, China, 2018.

Facial Analytics

OmniVision, Singapore, 2018.

National University of Singapore, 2018.

TECHNICAL ACTIVITIES
Executive Area Chair

VALSE.

Committee Member

CSIG-BVD.

Invited Reviewer

NSFC, T-PAMI, IJCV, T-MM, T-IFS, T-CSVT, Neurocomputing, NeurIPS (one of the top 30% highest-scoring reviewers of NeurIPS 2018), CVPR, ICCV, ACM MM, AAAI, ICLR, ICML, ACCV, UAI.

General Chair

The challenge on unconstrained face recognition, suspicious object recognition, and special behavior recognition.

Chair

The 1st Anti-UAV Workshop & Challenge with CVPR 2020, the 2nd Anti-UAV Workshop & Challenge with ICCV 2021.

Presentation Chair

CICAI 2021.

Session Chair

ECCV 2020 China Pre-Conference.

Co-Chair

ECCV 2020 RLQ-TOD Workshop & Challenge.

CVPR 2018 L.I.P Workshop & MHP Challenge.

Member

IEEE, CCF, CAAI, CSIG, CSIG-BVD, BSIG.

HOBBIES

Travel, Fitness, Mixed Martial Arts (MMA) and Brazilian Jiu-Jitsu (BJJ, Blue Belt under Prof. Leandro Thomas Issa da Silva of Evolve MMA, Singapore).

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