

# Jian Zhao

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## RESEARCH INTERESTS

Artificial intelligence, deep learning and computer vision, including unconstrained/large-scale/low-shot face recognition, image generation and super resolution with adversarial learning, human parsing, and knowledge distillation.

## EDUCATION

Ph.D. Electrical and Computer Engineering, National University of Singapore, 2016.01-2019.06 (Expected).

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

Advisors: Prof. Jiashi Feng, 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

## ACADEMIC EXPERIENCE

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

**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

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

**Jian Zhao**, Junliang Xing, Lin Xiong, Yan Xu, Shuicheng Yan, Jiashi Feng. *Deep Age-Invariant Face Recognition*. Submitted to International Journal of Computer Vision, 2018. (**IJCV**).

**Jian Zhao**, Junliang Xing, Lin Xiong, Shuicheng Yan, Jiashi Feng. *Recognizing Profile Faces by Imagining Frontal View*. Submitted to International Journal of Computer Vision, 2018. (**IJCV**).

**Jian Zhao**, Lin Xiong, Junliang Xing, Shuicheng Yan, Jiashi Feng. *3D-Driven Face Frontalization for High-Performance Pose-Invariant Face Recognition*. Submitted to International Journal of Computer Vision, 2018. (**IJCV**).

**Jian Zhao**, Jianshu Li, Hengzhu Liu, Shuicheng Yan, Jiashi Feng. *Fine-Grained Multi-Human Parsing*. Submitted to International Journal of Computer Vision, 2018. (**IJCV**).

Jianshu Li\*, **Jian Zhao**\*, Yunchao Wei, Congyan Lang, Yidong Li, Terence Sim, Shuicheng Yan, Jiashi Feng. *Fine-Grained Multi-Human Parsing*. Submitted to International Journal of Computer Vision, 2018. (**IJCV**). (\* indicates equal contribution).

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**).

### *Proceedings*

**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](#).

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).

**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](#).

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).

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

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

**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 (**NIPS** 2017).

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

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](#).

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).

**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 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 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

### 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, China, 2018.

### Facial Analytics

OmniVision, Singapore, 2018.

National University of Singapore, 2018.

## TECHNICAL ACTIVITIES

### Organizer

Workshop on Visual Understanding of Humans in Crowd Scene, and MHP Challenges on Multi-Human Pose Estimation and Fine-Grained Multi-Human Parsing with CVPR 2018.

### Program Committee Member

Workshop on Compact and Efficient Feature Representation Learning in Computer Vision with ECCV 2018.

### Reviewers

T-MM, T-IFS, CSSP, NIPS (one of the top 30% highest-scoring reviewers of NIPS 2018), CVPR, ICCV, ACM MM, AAI, ICLR, ICML, UAI.

## 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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## 赵健

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邮箱: zhaojian90@u.nus.edu  
个人主页: <https://zhaoj9014.github.io/>

### 研究兴趣

人工智能, 深度学习与计算机视觉, 包括非受限/大规模/小样本人脸识别, 基于对抗学习的图像生成与超分辨率, 人物解析, 以及知识蒸馏.

### 教育经历

博士, 新加坡国立大学电子与计算机工程系, 2016.01-2019.06 (预期).  
论文题目: 基于深度学习的人物图像理解: 从人脸识别到人物解析.  
导师: 冯佳时, 颜水成, 刘衡竹.

硕士, 国防科技大学计算机学院计算机科学与技术专业, 2012.09-2014.12.  
导师: 陈旭灿.

学士, 北京航空航天大学自动化科学与电气工程学院自动化专业, 2008.09-2012.07.  
导师: 董邵鹏, 袁梅

### 学术经历

“技术大咖”研究科学家, 腾讯深海人工智能实验室, 2018.12-今.

实习, 新加坡松下研发中心学习与视觉核心技术组, 2016.05-2018.09.

实习, 中国航天科工集团4院17所, 2011.09-2012.06.

### 教学经历

研究生教学助理, 计算机接口编程 (EE2024), 新加坡国立大学, 2016.08-2017.12.

## 学术成果 (获奖)

三等功、优秀毕业生 (<2%), 国防科技大学, 2019.

最佳学生论文奖, 第一作者, ACM MM 2018.

冠军, 第一作者, ICCV 2017 MS-Celeb-1M hard set/random set/low-shot learning人脸识别竞赛, 2017.

冠军, 第一作者, 美国国家标准技术研究所IJB-A非受限人脸验证与人脸鉴别比赛, 2017.

亚军, 第一作者, CVPR 2017 L.I.P人物解析/姿态估计竞赛, 2017.

季军, 第二作者, ACM MM 2016 MS-Celeb-1M hard set 人脸识别竞赛, 2016.

优秀学员 (<10%), 国防科技大学计算机学院, 2016.

优秀学员 (<10%), 国防科技大学计算机学院, 2015.

三等功、优秀毕业生 (<2%), 国防科技大学, 2014.

优秀学员 (<2%), 国防科技大学, 2014.

光华奖学金 (<2%), 国防科技大学, 2014.

积极贡献奖, 参与天河二号超级计算机系统工程实现工作 (天河二号在2013年6月国际Top500排名中位居世界第一), 国防科技大学, 2013.

季军, 第十三届长城信息杯科技作品竞赛, 国防科技大学, 2013.

优秀学员 (<10%), 国防科技大学计算机学院, 2013.

一等奖, 湖南省第六届研究生创新论坛大数据处理与信息分论坛, 湖南省人民政府学位委员会办公室, 2013.

优秀毕业生 (<2%), 北京航空航天大学, 2012.

二等奖, 第五届大学生科研训练计划 (SRTP), 北京航空航天大学, 2012.

国家励志奖学金, 北京市政府, 2011.

三等奖, 第二十一届“冯如杯”竞赛, 北京航空航天大学自动化学院, 2011.

SMC奖学金, 北京航空航天大学, 2010.



## 学术成果 (论文)

## 期刊论文

**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**).

**Jian Zhao**, Junliang Xing, Lin Xiong, Yan Xu, Shuicheng Yan, Jiashi Feng. *Deep Age-Invariant Face Recognition*. Submitted to International Journal of Computer Vision, 2018. (**IJCV**).

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**Jian Zhao**, Lin Xiong, Junliang Xing, Shuicheng Yan, Jiashi Feng. *3D-Driven Face Frontalization for High-Performance Pose-Invariant Face Recognition*. Submitted to International Journal of Computer Vision, 2018. (**IJCV**).

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Jianshu Li\*, **Jian Zhao**\*, Yunchao Wei, Congyan Lang, Yidong Li, Terence Sim, Shuicheng Yan, Jiashi Feng. *Fine-Grained Multi-Human Parsing*. Submitted to International Journal of Computer Vision, 2018. (**IJCV**). (\* indicates equal contribution).

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**).

## 会议论文

**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](#).

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).

**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](#).

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).

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

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

**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 (**NIPS** 2017).

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

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](#).

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).

#### Workshop论文

**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 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 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).

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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.

## 受邀报告

基于**Margin**的表示学习、残差知识蒸馏与基于先验辅助的超分辨率

腾讯, 中国, 2019.

基于深度学习的人物图像理解

优必选, 中国, 2018.

将门, 中国, 2018.

VALSE Webinar, 中国, 2018.

## 人脸分析

OmniVision, 新加坡, 2018

新加坡国立大学, 2018.

科研活动  
组织者

CVPR 2018群体场景下人物图像理解Workshop以及相应的细粒度多人解析与姿态估计竞赛.

程序委员会成员

ECCV 2018计算机视觉紧致、高效特征表示学习Workshop.

审稿人

T-MM, T-IFS, CSSP, NIPS (获NIPS 2018前30%最佳审稿人), CVPR, ICCV, ACM MM, AAAI, ICLR, ICML, UAI.

爱好

旅行, 健身, 综合格斗, 巴西柔术 (巴西柔术蓝带).

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