

# DAN ZENG (曾丹)

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🔍 We are looking for self-motivated Ph.D., M.phil., RAs and Visiting Interns to be part of our team.

## 👤 PROFESSIONAL EXPERIENCE

Sun Yat-sen University (SYSU), P.R. China Dec. 2024 – Present

- Tenure-track Assistant Professor, School of Artificial Intelligence, Ph.D. Supervisor

Southern University of Science and Technology (SUSTech), P.R. China Sept. 2024 – Dec. 2024

- Research Associate Professor, CSE Department, M.Phil. Supervisor

Southern University of Science and Technology (SUSTech), P.R. China Sept. 2020 – Aug. 2024

- Research Assistant Professor, CSE Department and RITAS, M.Phil. Supervisor

University of Twente (UT), The Netherlands Sept. 2018 – Aug. 2020

- Post-doc Research Fellow, Department of EEMCS, working with Prof. Raymond Veldhuis and Assoc. Prof. Luuk Spreeuwiers

University of Twente (UT), The Netherlands Oct. 2016 – Sept. 2017

- Visiting Scholar, Department of EEMCS, working with Prof. Raymond Veldhuis and Assoc. Prof. Luuk Spreeuwiers

## 🎓 EDUCATIONS

Sichuan University (SCU), P.R. China Sept. 2014 – July 2018

- Ph.D. in Computer Science and Technology, College of Computer Science, supervised by Prof. Zhisheng You and Prof. Qijun Zhao

Sichuan University (SCU), P.R. China Sept. 2012 – Aug. 2014

- M.Phil. in Computer Science and Technology, College of Computer Science, supervised by Prof. Zhisheng You and Prof. Qijun Zhao

Sichuan University (SCU), P.R. China Sept. 2012

- Participate in ‘3+2+3’ Joined Study of Bachelor and Doctoral Degree program (**Top 5%**)

Sichuan University (SCU), P.R. China Sept. 2009 – July 2013

- B.E. in Computer Science and Technology, College of Computer Science

## 🔍 RESEARCH INTERESTS

**AI4Biometrics:** Human&Animal Face/Body Perception; **AI+Ocean:** Underwater Computer vision

## 📄 GRANTS

- High-fidelity Tiny Face Super-resolution and Recognition in Complex Surveillance Scenarios, Sponsor: National Natural Science Foundation of China (NSFC), Youth Program(62206123), Duration:2023/01-2025/12, PI.
- Recognition-Oriented 3D Face Reconstruction Under Unconstrained Conditions, Sponsor: National Natural Science Foundation of China (NSFC), General Program(61773270), Duration:2018/01-2021/12, Key Member.
- Surveillance-Oriented 3D Face Reconstruction, the MiaoZi Key Program of Science Foundation of Sichuan Province (2017RZ0016), Duration: 2017/01-2019/12, Key Member.

- Low-resolution face recognition based on deep learning and pose correction for low-resolution face recognition based on 3D modeling, funded by The Royal Netherlands Academy of Arts and Sciences (KNAW), the Netherlands (530-6CDC09), Duration: 2016/10-2017/09, PI.

## PUBLICATIONS

Journal Papers (J), Conference Papers (C), # for the corresponding author, \* for co-first author

- 2024 J16 **Dan Zeng**<sup>#\*</sup>, Wen Jiang\*, Xiao Yan, Weibo Fu, Qiaomu Shen, Raymond Veldhuis, Bo Tang, “Face Super Resolution with a High Frequency Highway,” *IET Image Processing*, 2024. **CCF-C**.
- C17 **Dan Zeng**, Yu Zhu, Shuiwang Li, Qijun Zhao, Qiaomu Shen, Bo Tang, “Towards Labeling-free Fine-grained Animal Pose Estimation,” In Proceedings of the 32th ACM international conference on multimedia (MM) (pp. 2545-2553), 2024. **CCF-A**.
- C16 Ruowei Wang, Jiaqi Li, **Dan Zeng**, Xueqi Ma, Xu Zixiang, Jianwei Zhang, Qijun Zhao, “GenUDC: High Quality 3D Mesh Generation With Unsigned Dual Contouring Representation,” In Proceedings of the 32th ACM international conference on multimedia (MM) (pp. 10862-10871), 2024. **CCF-A**.
- J15 Shuiwang Li, Xiangyang Yang, Xucheng Wang, **Dan Zeng**<sup>#</sup>, Hengzhou Ye, Qijun Zhao<sup>#</sup>, “Learning Target-Aware Vision Transformer for Real-Time UAV Tracking,” *IEEE Transactions on Geoscience and Remote Sensing*, 2024. 10.1109/TGRS.2024.3417400. JCR-Q1, **CCF-B**.
- J14 Qiaomu Shen, Chaozu Zhang, Xiao Yan, Chuan Yang, **Dan Zeng**, Wei Zeng, Bo Tang, “CheetahTraj: Efficient Visualization for Large Trajectory Dataset with Quality Guarantee,” *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 2024. JCR-Q1, **CCF-A**.
- J13 Xucheng Wang, **Dan Zeng**, Yongxin Li, Mingliang Zou, Qijun Zhao, Shuiwang Li, “Enhancing UAV Tracking: A Focus on Discriminative Representations using Contrastive Instances,” *Journal of Real-Time Image Processing*, 2024.
- 2023 C15 **Dan Zeng**, Shanchuan Hong, Shuiwang Li, Qiaomu Shen, Bo Tang, “Data-Scarce Animal Face Alignment via Bi-Directional Cross-Species Knowledge Transfer,” In Proceedings of the 31th ACM international conference on multimedia (MM), 2023. **CCF-A**.
- C14 Shuiwang Li, Xiangyang Yang, **Dan Zeng**<sup>#</sup>, Xucheng Wang, “Adaptive and Background-Aware Vision Transformer for Real-Time UAV Tracking,” In Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV), pp. 13989-14000, 2023. **CCF-A**.
- C13 Zelin Li, **Dan Zeng**<sup>#</sup>, Xiao Yan, Qiaomu Shen, Bo Tang, “Analyzing and Combating Attribute Bias for Face Restoration,” In The 32nd International Joint Conference on Artificial Intelligence (IJCAI), 2023. **CCF-A**.
- C12 Qiaomu Shen, Zhengxin You, Xian Yao, Chaozu Zhang, Ke Xu, Jianbin Qin, **Dan Zeng**, Bo Tang, “QEVIS: Multi-grained Visualizing of Distributed Query Execution,” *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 2023. JCR-Q1, **CCF-A**.
- C11 **Dan Zeng**, Mingliang Zou, Xucheng Wang, Shuiwang Li, “Towards Discriminative Representations with Contrastive Instances for Real-Time UAV Tracking,” In 2023 IEEE International Conference on Multimedia and Expo (ICME) (pp. 01-06), 2023. **CCF-B**.
- J12 Zhongxi Qiu, Yan Hu, Xiaoshan Chen, **Dan Zeng**, Qingyong Hu, Jiang Liu, “Rethinking Dual-Stream Super-Resolution Semantic Learning in Medical Image Segmentation,” *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2023. JCR-Q1, **CCF-A**.
- J11 **Dan Zeng**, Zelin Li, Xiao Yan, Wen Jiang, Xiaoshao Wang, Jiang Liu, Bo Tang, “Cascaded Face Super-resolution with Shape and Identity Priors,” *IET Image Processing*, 2023. **CCF-C**.
- J10 Gaoli Sang, **Dan Zeng**, Chao Yan, Raymond Veldhuis, Luuk Spreeuwers, “Robust Partial Face Recognition using Multi-label Attributes,” *Intelligent Data Analysis*, pp. 1-16, 2023. **CCF-C**.
- 2022 C10 **Dan Zeng**, Zhiyuan Lin, Xiao Yan, Yuting Liu, Fei Wang, Bo Tang, “Face2Exp: Combating Data Biases for Facial Expression Recognition,” In Proceedings of the IEEE/CVF Conference on Computer

Vision and Pattern Recognition (CVPR) (pp. 20291-20300), 2022. **CCF-A**.

- C9 Xucheng Wang\*, **Dan Zeng\***, Qijun Zhao, Shuiwang Li, “Rank-based Filter Pruning for Real-time UAV Tracking,” In 2023 IEEE International Conference on Multimedia and Expo (ICME) (pp. 01-06), 2022. **CCF-B**.
- C8 Yan Hu, Zhongxi Qiu, **Dan Zeng**, Li Jiang, Chen Lin, Jiang Liu, “SuperVessel: Segmenting High-resolution Vessel from Low-resolution Retinal Image,” In Chinese Conference on Pattern Recognition and Computer Vision (PRCV) (pp. 178-190), 2022. **CCF-C**.
- C7 Pengzhi Zhong\*, **Dan Zeng\***, Xucheng Wang, Shuiwang Li, “Efficiency and Precision Trade-offs in UAV Tracking with Filter Pruning and Dynamic Channel Weighting,” In Proceedings of Fuzzy Systems and Data Mining VIII (FSDM), 358, p.265, 2022.
- C6 Siyu Ma, Yuting Liu, **Dan Zeng**, Yaxin Liao, Xiaoyu Xu, Shuiwang Li, “Learning Disentangled Representation in Pruning for real-time UAV Tracking,” In Asian Conference on Machine Learning (ACML), pp. 690-705, 2022. **CCF-C**.
- J9 Jiansheng Fang, **Dan Zeng**, Xiao Yan, Yubing Zhang, Hongbo Liu, Bo Tang, Ming Yang, Jiang Liu, “Combating Spatial Redundancy with Spectral Norm Attention in Convolutional Learners,” *Neuro-computing*, 511, pp.105-116, 2022. JCR-Q2, **CCF-C**.
- 2021 J8 Jiansheng Fang, Huazhu Fu, **Dan Zeng**, Xiao Yan, Jiang Liu, “Combating Ambiguity for hash-code Learning in Medical Instance Retrieval,” *IEEE Journal of Biomedical and Health Informatics (JBHI)*, 25(10), pp.3943-3954, 2021. JCR-Q1, **CCF-C**.
- J7 **Dan Zeng**, Raymond Veldhuis, Luuk Spreeuwers, Richard Arendsen, “Occlusion Invariant Face Recognition Using Simultaneous Segmentation,” *IET Biometrics*, 10(6), pp.679-691, 2021. JCR-Q3. (Well-known journal in Biometrics)
- J6 **Dan Zeng**, Raymond Veldhuis, Luuk Spreeuwers, “A Survey of Face Recognition Techniques under Occlusion,” *IET Biometrics*, 10(6), pp.581-606, 2021. JCR-Q3. (Well-known journal in Biometrics)
- 2020 J5 Feng Liu, Qijun Zhao, Xiaoming Liu, **Dan Zeng**, “Joint Face Alignment and 3D Face Reconstruction with Application to Face Recognition,” *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 42(3), pp.664-678, 2020. JCR-Q1, **CCF-A**.
- 2019 C5 **Dan Zeng**, Raymond Veldhuis, Luuk Spreeuwers, Qijun Zhao, “Likelihood Ratio based Loss to fine-tune CNNs for Very Low Resolution Face Verification,” In 2019 International Conference on Biometrics (ICB), pp. 1-8, 2019. **CCF-C** (Top-tier conference in Biometrics)
- J4 **Dan Zeng**, Luuk Spreeuwers, Raymond Veldhuis, Qijun Zhao, “Combined Training Strategy for Low-resolution Face Recognition with Limited Application Specific Data,” *IET Image Processing* 13(10), pp.1790-1796, 2019. **CCF-C**
- 2018 C4 Feng Liu, Ronghang Zhu, **Dan Zeng**, Qijun Zhao, Xiaoming Liu, “Disentangling Features in 3D Face Shapes for Joint Face Reconstruction and Recognition,” In Proceedings of the IEEE conference on computer vision and pattern recognition (CVPR), pp. 5216-5225, 2018. **CCF-A**
- 2017 J3 Feng Liu, **Dan Zeng**, Jing Li, Qijun Zhao, “On 3D face reconstruction via cascaded regression in shape space,” *Frontiers of Information Technology & Electronic Engineering*, vol. 18(12), pp.1978-1990, 2017.
- J2 **Dan Zeng**, Qijun Zhao, Shuqin Long, Jing Li, “Exemplar Coherent 3D Face Reconstruction from Forensic Mugshot Database,” *Image and Vision Computing*, vol. 58, pp.193-203, 2017. **CCF-C**
- 2016 C3 Feng Liu, **Dan Zeng**, Qijun Zhao, Xiaoming Liu, “Joint Face Alignment and 3D Face Reconstruction,” In Computer Vision–ECCV 2016: 14th European Conference (ECCV), 2016: 545-560. **CCF-B**
- C2 **Dan Zeng**, Hu Chen, Qijun Zhao, “Towards resolution invariant face recognition in uncontrolled scenarios,” In 2016 International Conference on Biometrics (ICB), pp. 1-8, 2016. **CCF-C** (Top-tier conference in Biometrics)

- J1 **Dan Zeng**, Shuqin Long, Jing Li, Qijun Zhao, “A Novel Approach to Mugshot Based Arbitrary View Face Recognition,” *Journal of the Optical Society of Korea*, vol. 20 (2), pp.239-244, 2016.
- 2015 C1 Jing Li, Shuqin Long, **Dan Zeng**, Qijun Zhao, “Example based 3D Face Reconstruction from Uncalibrated Frontal and Profile Images,” In 2015 International Conference on Biometrics (ICB), pp. 1-8, 2015. CCF-C (Top-tier conference in Biometrics)

## PATENTS

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- **Dan Zeng**, Tauseef Ali, Raymond Veldhuis, Richard Arendsen, Quality check method and system for determining a recognition quality of an input face image, 4R/P167262NL00, filed on April 27, 2020, the Netherlands.
- **Dan Zeng**, Zelin Li, Bo Tang, A face super-resolution reconstruction method, device, equipment and storage medium, 202310839804.X. Accepted by the National Intellectual Property Administration.
- **Dan Zeng**, Zelin Li, Bo Tang, Face restoration method, generative adversarial network training and device, 202311022023.8. Accepted by the National Intellectual Property Administration.

## INVITED TALKS

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- June 2016, **Towards resolution invariant face recognition in uncontrolled scenarios**, paper presentation, ICB, Halmstad Sweden.
- June 2019, **Likelihood Ratio based Loss to finetune CNNs for Very Low Resolution Face Verification**, paper presentation, ICB, Crete, Greece.
- June 2022, **Face2Exp: Combating Data Biases for Facial Expression Recognition**, paper presentation, CVPR, New Orleans, USA.
- Nov. 2023, **Data-Scarce Animal Face Alignment via Bi-Directional Cross-Species Knowledge Transfer**, paper presentation, ACM MM, Ottawa, Canada.

## STUDENTS SUPERVISION

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### M.Phil. Students

- Irfan Dwiki Bhaswara, 2018-2020, joint with Prof. Raymond Veldhuis, now 1st year Ph.D. candidate at the University of New South Wales (UNSW Sydney)
- Zelin Li, 2020-2024, now 1st year Ph.D. candidate at the University of Illinois Urbana-Champaign (UIUC)
- Fan Xie, 2022-present, now 3rd year M.Phil. student at SUSTech
- Yu Zhu, 2023-present, now 2nd year M.Phil. student at SUSTech

### Selected Undergraduate Students

- Krishnakumar Jayakumar, 2018-2020, joint with Prof. Raymond Veldhuis
- Zhiyuan Lin, 2020-2022, now M.Phil. student at the National University of Singapore (NUS)
- Wen Jiang, 2020-2022, now M.Phil. student at Waseda University
- Shanchuan Hong, 2021-2023, will be an M.Phil. student at the University of California, San Diego (UCSD)

## TEACHING

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- TA for 201500040: Introduction to Biometrics 3TU, 2019 Spring, 2020 Spring.

## ACADEMIC SERVICE

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**National Natural Science Foundation of China, Youth Program, NSFC-Youth Reviewer**

**Electronics Special Issue: New Trends in AI-Assisted Computer Vision, Guest Editor**

### Conference Program Committee

- Computer Vision and Pattern Recognition (CVPR), PC, 2022, 2023, 2024
- International Conference on Computer Vision (ICCV), PC, 2023

- European Conference on Computer Vision (ECCV), PC, 2022, 2024
- Association for the Advancement of Artificial Intelligence (AAAI), PC, 2021, 2022, 2023, 2024
- International Joint Conference on Artificial Intelligence (IJCAI), PC, 2024
- ACM Multimedia (MM), PC, 2022, 2024
- European Conference on Artificial Intelligence (ECAI), PC, 2024
- IEEE International Conference on Automatic Face and Gesture Recognition (FG), PC, 2022, 2023, 2024
- International Joint Conference on Biometrics (IJCB), PC, 2023, 2024

#### **Journal Referee**

- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- International Journal of Computer Vision (IJCV)
- IEEE Transactions on Image Processing (TIP)
- IEEE Transactions on Information Forensics and Security (TIFS)
- Artificial Intelligence (AI)
- IEEE Transactions on Medical Imaging (TMI)
- Pattern Recognition (PR)
- Pattern Recognition Letters (PRL)
- Image and Vision Computing (IVC)
- IET Image Processing (IPR)

#### **Professional Organizations**

- Member, IEEE
- Member, CCF
- Member, CSIG