Feng Liu

CONTACT INFORMATION

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RESEARCH INTEREST

Computer Vision, Biometrics, Machine Learning, Artificial Intelligence

EDUCATION

Sichuan University, Chengdu, P.R. China **Sep, 2014 – Jun, 2018**
Ph.D., Computer Science
◇ Dissertation Title: "3D Face Reconstruction and Recognition in Unconstrained Scenarios"
◇ Advisor: Prof. Zhisheng You and Prof. Qijun Zhao

EXPERIENCE

Oct 2018 - Postdoctoral Researcher, Department of Computer Science and Engineering, Michigan State University, East Lansing, MI. Mentor: Prof. Xiaoming Liu

HONORS & AWARDS

- ACM Doctoral Dissertation Award (Chengdu), 2018
- Excellent Ph.D. Student, 2017
- Excellent Ph.D. Student, 2016
- The GuangHua Educational Scholarship, 2016
- The 10th China Post-graduate Mathematic Contest in Modeling Third prize, 2013
- The 9th China Post-graduate Mathematic Contest in Modeling Third prize, 2012

GRANTS & PROJECTS

1. **Senior Researcher**, "Physics-driven Modeling and Learning for Person Recognition at a Distance and Altitude," IARPA, $10.6M, 11/21-10/25.
   - Topic: Body matching/Person re-identification, Image synthesis, 3D human body modeling
   - Led robust body matching method, joint analysis of 2D images and 3D body shapes, and human image synthesis and editing
2. **Principal Investigator**, "Research on Key Technologies of 3D Face Reconstruction in Public Security Surveillance and Recognition," The Miaozi Key Project in Science and Technology Innovation Program of Sichuan Province, P.R. China, $17.5K, 05/17-10/18.

PUBLICATIONS

Google Scholar lists my h-index as 12, with **1,201** citations.

TPAMI and IJCV are the top 2 journals in computer vision.

Journal Articles

1. **Feng Liu** and Xiaoming Liu, "Learning Implicit Functions for Dense 3D Shape Correspondence of Generic Objects," IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), Jan 2023, in press. Doi: 10.1109/TPAMI.2022.3233431. PDF
2. Ziyuan Zhang, Luan Tran, **Feng Liu** and Xiaoming Liu, "On Learning Disentangled Representations for Gait Recognition," IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), Vol. 44, No.1, pp.345-360, 2022. PDF
3. Mehdi Bahri, Eimear O' Sullivan, Shunwang Gong, **Feng Liu**, Xiaoming Liu, Michael Bronstein, Stefanos Zafeiriou, "Shape My Face: Registering 3D Face Scans by Surface-to-Surface Translation," International Journal of Computer Vision (**IJCV**), Vol. 129, No. 9, pp.2680-2713, 2021. PDF

4. **Feng Liu**, Qijun Zhao, Xiaoming Liu and Dan Zeng, "Joint Face Alignment and 3D Face Reconstruction with Application to Face Recognition," IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), Vol. 42, No.3, pp.664-678, 2020. PDF

5. Jie Liang, Huan Tu, **Feng Liu** and Qijun Zhao and Anil K. Jain, "3D Face Reconstruction from Mugshots: Application to Arbitrary View Face Recognition," Neurocomputing, Vol. 410, pp.12-27, 2020. PDF

6. **Feng Liu**, Dan Zeng, Jing Li and Qijun Zhao, "On 3D Face Reconstruction via Cascaded Regression in Shape Space," Frontiers of Information Technology and Electronic Engineering, Vol. 18, No. 12, pp.1978-1990, 2017. PDF

The top conference papers in computer vision and machine learning are considered as major publications. The top conferences are highly selective, e.g., NeurIPS has acceptance rates around 20%, and oral presentations have a 1% acceptance rate. Source CVPR, NeurIPS, ICCV, and ECCV are the top 4 publication venues in all computer science conferences, according to the h5-index, a citation measure for the recent five years. Source CVPR also ranks 4th in all scientific publication venues, where Nature, Science, and PNAS rank 1 st, 3nd, and 13th, respectively. Source

Conference Papers

1. Minchul Kim, **Feng Liu**, Anil Jain and Xiaoming Liu, "DCFace: Synthetic Face Generation with Dual Condition Diffusion Model," in *Proceeding of IEEE International Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2023. PDF

2. Minchul Kim, **Feng Liu**, Anil Jain and Xiaoming Liu, "Cluster and Aggregate: Face Recognition with Large Probe Set," in *Proceeding of Advances in Neural Information Processing Systems (**NeurIPS**)*, 2022. PDF

3. **Feng Liu** and Xiaoming Liu, "2D GANs Meet Unsupervised Single-View 3D Reconstruction," in *Proceeding of European Conference on Computer Vision (**ECCV**)*, 2022. PDF

4. **Feng Liu**, Minchul Kim, Anil Jain and Xiaoming Liu, "Controllable and Guided Face Synthesis for Unconstrained Face Recognition," in *Proceeding of European Conference on Computer Vision (**ECCV**)*, 2022. PDF

5. **Feng Liu** and Xiaoming Liu, "Voxel-based 3D Detection and Reconstruction of Multiple Objects from a Single Image," in *Proceeding of Advances in Neural Information Processing Systems (**NeurIPS**)*, 2021. PDF

6. **Feng Liu**, Luan Tran and Xiaoming Liu, "Fully Understanding Generic Objects: Modeling, Segmentation, and Reconstruction," in *Proceeding of IEEE International Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2021. PDF

7. **Feng Liu** and Xiaoming Liu, "Learning Implicit Functions for Topology-Varying Dense 3D Shape Correspondence," in *Proceeding of Advances in Neural Information Processing Systems (**NeurIPS**)*, 2020. Oral presentation, 1.1% (105/9454). PDF

8. **Feng Liu***, Hao Dang*, Joel Stehouwer*, Xiaoming Liu and Anil K Jain, "On the Detection of Digital Face Manipulation," in *Proceeding of IEEE International Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2020. PDF (* denotes equal contribution by the authors)

9. **Feng Liu**, Luan Tran and Xiaoming Liu, "3D Face Modeling from Diverse Raw Scan Data," in *Proceeding of IEEE International Conference on Computer Vision (**ICCV**)*, 2019. Oral presentation, 4.3% (187/4303). PDF

10. Luan Tran, **Feng Liu** and Xiaoming Liu, "Towards High-Fidelity Nonlinear 3D Face Morphable Model," in *Proceeding of IEEE International Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2019. PDF

11. **Feng Liu**, Ronghang Zhu, Dan Zeng, Qijun Zhao and Xiaoming Liu, "Disentangling Features in 3D Face Shapes for Joint Face Reconstruction and Recognition," in *Proceeding of IEEE International Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2018. PDF

12. **Feng Liu**, Dan Zeng, Qijun Zhao and Xiaoming Liu, "Joint Face Alignment and 3D Face Reconstruction," in *Proceeding of European Conference on Computer Vision (**ECCV**)*, 2016. Spotlight presentation, 4.6% (72/1561). PDF

13. Wan Tian, **Feng Liu** and Qijun Zhao, "Regressing 3D Face Shapes from Arbitrary Image Sets with Disentanglement in Shape Space" in *proceeding of IEEE International Conference on Biometric (**ICB**)*, 2019. PDF

14. Jie Liang, **Feng Liu**, Huan Tu, Qijun Zhao and Anil K. Jain, "On Mugshot-based Arbitrary View Face Recognition," in *proceeding of International Conference on Pattern Recognition (**ICPR**)*, 2018. PDF

15. Wan Tian, **Feng Liu** and Qijun Zhao, "Landmark-based 3D Face Reconstruction from an Arbitrary Number of Unconstrained Images," in *proceeding of IEEE International Conference on Automatic Face and Gesture Recognition (**FG**)*, 2018. PDF

16. **Feng Liu**, Jun Hu, Jianwei Sun and Qijun Zhao, "Multi-Dim: A Multi-Dimensional Face Database Towards the Application of 3D Technology in Real-World," in *Proceeding of International Joint Conference on Biometrics (**IJCB**)*, 2017. PDF

TEACHING & MENTORING

Co-lecturer

- CSE 803: Computer Vision, Michigan State University, Fall 2023

Mentored Students

- **Ziyuan Zhang**, 2018-2019,
  CS Undergraduate at Michigan State University,
  Published a paper on gait recognition in TPAMI
- **Hao Dang**, 2019-2020,
  CS Undergraduate at University of Wisconsin–Madison,
  Published his first paper on DeepFake detection in CVPR 2020
- **Ziang Gu**, 2022-,
  CS Undergraduate at Michigan State University,

ACADEMIC SERVICES

Journal Reviewer

- IEEE Transactions on Pattern Analysis and Machine Intelligence;
- IEEE Transactions on Information Forensics and Security;
- IEEE Transactions on Image Processing;
- IEEE Transactions on Visualization and Computer Graphics;
- IEEE Transactions on Industrial Informatics;
- IEEE Transactions on Multimedia;
- ACM Transactions on Multimedia Computing, Communications, and Applications;
- Pattern Recognition;

Conference Reviewer

CVPR 2019, 2020, 2021, 2022, 2023; ICCV 2019, 2021, 2023; ECCV 2020, 2022; NeurIPS 2022, 2023, ICLR 2022, 2023; AAAI 2020, 2021, 2022; IJCAI 2020, 2021; ACCV 2020; IJCB 2020; WACV 2020, 2021, 2022, 2023; FG 2019, 2021, ICB 2019