

Yajie Zhao

CONTACT INFORMATION	12015 E Waterfront Dr Los Angeles, CA 90094	(310) 574-5700 zhao@ict.usc.edu
RESEARCH INTERESTS	I'm currently leading the research of Vision and Graphic Lab, the Institute for Creative Technologies of USC. We are aiming at making the production quality virtual human and environment easily accessible to the whole community. My research interests are high resolution human face/body/scene 3D capturing, reconstruction, representation, synthesizing, neural rendering and human/scene related applications in VR/AR .	
PERSONAL WEBPAGE	https://www.yajie-zhao.com/	
WORK EXPERIENCE	Director, Vision & Graphics Lab University of Southern California, Institute for Creative Technologies	June 2024 to present
	Research Assistant Professor University of Southern California, Viterbi School of Engineering Computer Science Department	July 2022 to present
	Interim Director, Vision & Graphics Lab University of Southern California, Institute for Creative Technologies	August 2020 to May 2024
	Computer Scientist University of Southern California, Institute for Creative Technologies	September 2020 to June 2022
	Research Associate University of Southern California, Institute for Creative Technologies Supervisors: Hao Li, Ph.D	September 2018 to August 2020
	Postdoctoral Researcher University of Southern California, Institute for Creative Technologies Supervisors: Hao Li, Ph.D	December 2017 to August 2018
	Intern at Google Machine Perception Team, Google, Mountain View Supervisors: Avneesh Sud, Ph.D and Chris Bregler, Ph.D	May 2017 to September 2017
	Research Assistant	May 2014 to May 2017

Center for Visualization and Virtual Environment,
University of Kentucky
Supervisor: Ruigang Yang, Ph.D

Teaching Assistant

Jan 2012 to May 2014

Department of Computer Science,
University of Kentucky
Supervisors: Debby Keen, Ph.D and Yi Pike, Ph.D

EDUCATION **University of Kentucky**, Lexington, KY

Ph.D., Computer Science, December 2017

- Thesis Topic: *Human Face Modeling and Appearance Synthesis*
- Advisor: Ruigang Yang, Ph.D
- GPA 4.0/4.0

Xi'an Jiaotong University, Xi'an, China

B.S., Computer Science, May 2011

PEER
REVIEWED
PUBLICATIONS

1. Gonglin Chen, Tianwen Fu, Haiwei Chen, Wenbin Teng, Hanyuan Xiao, **Yajie Zhao**, Sai-Kit Yeung .RDD: Robust Feature Detector and Descriptor using Deformable Transformer. (CVPR 2025)
2. Huajian Huang, Yingshu Chen, Longwei Li, Hui Cheng, Tristan Braud, **Yajie Zhao**, Sai-Kit Yeung .SC-OmniGS: Self-Calibrating Omnidirectional Gaussian Splatting. (ICLR 2025)
3. Pratusha B. Prasad, Omid Hemmatyar, Caoyi Zou, **Yajie Zhao**. “Bifocal Polarization Sensitive Metalens for Rapid BRDF Estimation.” (SPIE 2025)
4. Haolin Xiong, Sairisheek Muttukuru, Hanyuan Xiao, Rishi Upadhyay, Pradyumna Chari, **Yajie Zhao**, Achuta Kadambi. “SparseGS: Sparse View Synthesis using 3D Gaussian Splatting.” (3DV 2025).
5. Chen, Gonglin, Jinsen Wu, Haiwei Chen, Wenbin Teng, Zhiyuan Gao, Andrew Feng, Rongjun Qin, and **Yajie Zhao**. “Geometry-aware Feature Matching for Large-Scale Structure from Motion.” (3DV 2025) (**oral**)
6. Gao, Zhiyuan, Wenbin Teng, Gonglin Chen, Jinsen Wu, Ningli Xu, Rongjun Qin, Andrew Feng, and **Yajie Zhao**. “Skyeyes: Ground Roaming using Aerial View Images.” (WACV2025).
7. Xiao, Hanyuan, Yingshu Chen, Huajian Huang, Haolin Xiong, Jing Yang, Pratusha Prasad, **Yajie Zhao**. “Localized Gaussian Splatting Editing with Contextual Awareness.” (WACV2025).

8. Chen, Haiwei, **Yajie Zhao**. “Don’t Look into the Dark: Latent Codes for Pluralistic Image Inpainting.” (CVPR2024).
9. Fabien Danieau¹, Philippe Guillotel, Ludovic Hoyet, Steve Tonneau, **Yajie Zhao**. “Editorial: Creating Lifelike Digital Humans.” (Frontiers in Virtual Reality 2023).
10. Jing Yang, Hanyuan Xiao, Yunxuan Cai, Wenbin Teng, **Yajie Zhao**. “Light Sampling Field and BRDF Representation for Physically-based Neural Rendering.” (ICLR 2023).
11. Shichen Liu, Yunxuan Cai, Haiwei Chen, Yichao Zhou, **Yajie Zhao**. “Rapid Face Asset Acquisition with Recurrent Feature Alignment.” (SIGGRAPH Asia 2022).
12. Haiwei Chen, Jiayi Liu, Weikai Chen, Shichen Liu, **Yajie Zhao**. “Exemplar-based Pattern Synthesis with Implicit Periodic Field Network.” Computer Vision and Pattern Recognition Conference (CVPR 2022).
13. Zhengfei Kuang, Jiaman Li, Mingming He, Tong Wang, **Yajie Zhao**. “DenseGAP: Graph-Structured Dense Correspondence Learning with Anchor Points.” International Conference on Pattern Recognition (ICPR 2022). **(Oral)**
14. Jiaman Li, Ruben Villegas, Duygu Ceylan, Jimei Yang, Zhengfei Kuang, Hao Li, **Yajie Zhao**. “Task-generic hierarchical human motion prior using vaes.” International Conference on 3D Vision 2021 (3DV). 2021.
15. Shichen Liu, Yichao Zhou, **Yajie Zhao**. “A Rapid Vanishing Point Detector via Learned Optimizers.” Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV). 2021.
16. Tianye Li, Shichen Liu, Timo Bolkart, Jiayi Liu, Hao Li, **Yajie Zhao**. “Topologically Consistent Multi-View Face Inference Using Volumetric Sampling.” Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV). 2021. **(Oral)**
17. Sitao Xiang, Yuming Gu, Pengda Xiang, Menglei Chai, Hao Li, **Yajie Zhao**, Mingming He. “DisUnknown: Distilling Unknown Factors for Disentanglement Learning.” Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV). 2021.
18. Jiaman Li, Ruben Villegas, Duygu Ceylan, Jimei Yang, Zhengfei Kuang, Hao Li, **Yajie Zhao**. “Task-Generic Hierarchical Human Motion Prior using VAEs.” In International Conference on 3D Vision (3DV), 2021

19. Li, Jiaman, Zhengfei Kuang, **Yajie Zhao**, Mingming He, Karl Bladin, and Hao Li. "Dynamic facial asset and rig generation from a single scan." *ACM Transactions on Graphics (TOG)* 39, no. 6 (2020): 1-18. (**Corresponding author.**)
20. Li, Ruilong*, Karl Bladin*, **Yajie Zhao***, Chinmay Chinara, Owen Ingraham, Pengda Xiang, Xinglei Ren et al. "Learning Formation of Physically-Based Face Attributes." In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2020)*, pp. 3410-3419. 2020. (**Joint first author.**)
21. Xing, Jun, Koki Nagano, Weikai Chen, Haotian Xu, Li-yi Wei, **Yajie Zhao**, Jingwan Lu, Byungmoon Kim, and Hao Li. "HairBrush for Immersive Data-Driven Hair Modeling." In *Proceedings of the 32nd Annual ACM Symposium on User Interface Software and Technology*, pp. 263-279. (UIST) 2019.
22. **Zhao, Yajie**, Zeng Huang, Tianye Li, Weikai Chen, Chloe LeGendre, Xinglei Ren, Ari Shapiro, and Hao Li. "Learning perspective undistortion of portraits." In *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV 2019)*, pp. 7849-7859. 2019. (**Oral**)
23. **Zhao, Yajie**, Qingguo Xu, Weikai Chen, Chao Du, Jun Xing, Xinyu Huang, and Ruigang Yang. "Mask-off: Synthesizing face images in the presence of head-mounted displays." In *2019 IEEE Conference on Virtual Reality and 3D User Interfaces (IEEEVR 2019)*, pp. 267-276. IEEE, 2019. (**Oral**)
24. **Zhao, Yajie**, Weikai Chen, Jun Xing, Xiaoming Li, Zach Bessinger, Fuchang Liu, Wangmeng Zuo, and Ruigang Yang. "Identity preserving face completion for large ocular region occlusion." (BMVC 2018).
25. Shugo Yamaguchi*, Shunsuke Saito*, Koki Nagano, **Zhao, Yajie**, Weikai Chen, Shigeo Morishima, Hao Li. "High-Fidelity Facial Reflectance and Geometry Inference From an Unconstrained Image." *ACM Transactions on Graphics (Proceedings of SIGGRAPH 2018)*.
26. Zeng Huang, Tianye Li, Weikai Chen, **Yajie Zhao**, Jun Xing, Chloe LeGendre, Linjie Luo, Chongyang Ma, Hao Li. "Deep Volumetric Video From Very Sparse Multi-View Performance Capture." *European Conference on Computer Vision (ECCV)*, 2018.
27. **Zhao, Yajie**, et al. "A Performance Comparison between Circular and SplineBased Methods for Iris Segmentation." *Pattern Recognition (ICPR)*, 2014 22nd International Conference on. IEEE, 2014.
28. **Yajie Zhao**; Xinyu Huang; Jizhou Gao; Tokuta, A.; Cha Zhang; Ruigang Yang, "Video face beautification," in *Multimedia and Expo*

(ICME), 2014 IEEE International Conference on , vol., no., pp.1-6, 14-18 July 2014. (**Oral**)

- | | |
|-----------------------------|---|
| MEDIA AND
SOCIAL EVENTS | <ul style="list-style-type: none">• Invited speaker at the 2024 Global Innovation Summit, San Diego, October 13, 2024.• Collaborate with Dancers in Awe and Wonder- performance connecting scientists with choreographers, 17th, November, 2024. |
| INVITED TALKS
AND EVENTS | <ul style="list-style-type: none">• Invited Talk to DARPA and UL Research Institutes on the topic of Deepfake on 14th, January 2025.• Demo of our terrain reconstruction software in I/ITSEC 2024(The world's Largest Modeling, Simulation Training Event), 2nd to 6th December 2024, Orlando, FL.• Invited Talk to Flawless AI on AI-based virtual human generation, 20th, November 2024.• Invited Talk to Land System Science Technology Officer of British Defense on Human Performance. 21st October 2024.• Invited talk and Demo at the ONR tech reviews and ST Expo. Sept 26 and 27, 2024, Quantico, VA.• Speaker and Panelist at Frontiers Workshop: XR and AI - Opportunities and Challenges Siggraph 2023.• Invited talk and panelist at the Machine Learning for Content Creation (MLCC) workshop at Netflix, May 27, 2022• Guest lecture " Research in ICT Vision and Graphics Lab" on USC CS576, April 26th, 2022• Invited talk on Overseas Advanced Technology Training 2021 hosted by Korean government, Dec 2, 2021.• Invited talk on Overseas Advanced Technology Training 2020 hosted by Korean government.• Invited talk on Nvidia GTC 2020 "Generative Face Models from Light Stage Scans".• Guest lecture " Research in ICT Vision and Graphics Lab" on USC CS576.• Invited talk at TECHCON 2019. |
| SERVICES | <ul style="list-style-type: none">• Local Chair of AIXVR 2024 (https://aivr.science.uu.nl/2024/index.html), host the conference at USC ICT.• Speaker and Panelist at FrontiersWorkshop: XR and AI - Opportunities and Challenges Siggraph 2023.• Program chair of AIVR 2022.• Committee member of Technical Communications and Posters of SIGGRAPH Asia 2022.• Program chair of AIVR 2021. |

- Co-chair AIVR 2020 workshop "From Capture to Rendering of Digital Humans for AR/VR" and gave a talk "Next Generation lifelike Avatar Creation".
- Co-chair AIVR 2019 workshop "From Capture to Rendering of Digital Humans for AR/VR" (<https://aivr2019.github.io/CRDH-workshop/>). San Diego, USA.
- Reviewer of conferences and journals including ECCV, ICCV, CVPR, SIGGRAPH, IEEEVR, ACM Multimedia, TVCG, TPAMI and *et al.*
- Editor of Frontier research track "Creating Lifelike Digital Humans".

SUPERVISION	Tianye Li, PhD student	August 2020 to 2023, graduated
	Shichen Liu, PhD student	August 2020 to 2023, graduated
	Haiwei Chen, PhD student	August 2021 to 2024, graduated
	Haiwei Chen, Postdoc	February 2025 to present
	Hanyuan Xiao, PhD student	August 2020 to present
	Jing Yang, PhD student	August 2020 to present
	Sitao Xiang, PhD student	August 2020 to present
	Pengda Xiang, PhD student	August 2020 to present
	Zhengfei Kuang, PhD student	August 2020 to May 2022
	Yuming Gu, PhD student	August 2021 to 2024
	Ziqi Zeng, PhD student	August 2022 to present
	Bryce Blinn, PhD student	August 2022 to present
	Wenbin Teng, PhD student	August 2022 to present
	Pratusha Prasud, PhD student & Full-time SDE	August 2021 to present
	Chaoyi Zhou, MCs student	May 2022 to present
	Emma Hawk, MCs student	May 2022 to present
	Yunxuan Cai, Full-time SDE	May 2021 to May 2024
	Yunxuan Cai, PhD Student	August 2024 to Present
	Tianwen Fu, PhD Student	August 2024 to present
	Junyi Ouyang, PhD Student	August 2024 to present
	Gonglin Chen, PhD Student	August 2024 to present

GRANTS AND GIFTS

DARPA - IARPA - Army Research Lab - Sony R&D - Office of Naval research - Meta - Nvidia - FlawlessAI - SAIC - Netflix