Kaiwen Jiang, Ph.D. Candidate

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https://raymondjiangkw.github.io/



Education

Sep 2025 – June 2027 **Ph.D. in Computer Science, University of California San Diego** – La Jolla, CA, USA.

Sep 2023 – June 2025 **Master in Computer Science, University of California San Diego** – La Jolla, CA, USA.

Sep 2019 – Jun 2023 **BE. in Computer Science, Beijing Jiaotong University** – Beijing, China

Experiences

June 2026 – Sep 2026 **VPG SWE Intern.** Apple Inc., Sunnyvale, California, USA.

• Conducted research on 3D reconstruction of synthetic video frames for digital content creation, including multi-view transformer for feed-forward model.

Sep 2023 – June 2025 **Graduate Student Researcher.** University of California San Diego, La Jolla, California, USA.

• Conducted research on 3D modeling, focusing on sparse-view synthesis, geometry reconstruction, and relighting.

Jun 2024 – Sep 2024 **Research Intern.** NVIDIA, Santa Clara, California, USA.

• Conducted research on real-time encoding and animation from a single portrait image, leading to 3 Patents.

Mar 2021 – Jun 2023 **Research Intern.** ICT, Chinese Academy of Sciences, Beijing, China.

• Conducted research on 3D facial generation, editing, animation, and relighting.

Jun 2022 – Sep 2022 **Summer Research Student.** University of Notre Dame (Remote).

• Developed a web-based system for Human–AI Co-Creation of Computational Spatial Audio Effects on Videos using React, achieving 100× speedup.

• Built an automated video-processing pipeline for Multimodal Spatial Exploration for Accessibility in 2D Video.

Research Publications

3D View Synthesis, Geometry Reconstruction, and Relighting

1. **K. Jiang**, V. Sivaram, C. Peng, and R. Ramamoorthi, Geometry field splatting with gaussian surfels, IEEE Computer Vision and Pattern Recognition Conference (CVPR), 2025.
2. **K. Jiang**, J.-M. Sun, Z. Li, D. Wang, T.-M. Li, and R. Ramamoorthi, Differentiable light transport with gaussian surfels via adapted radiosity for efficient relighting and geometry reconstruction, ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH Asia), 2025.

3. D. Li, **K. Jiang**, Y. Tang, R. Ramamoorthi, R. Chellappa, and C. Peng, Ms-gs: Multi-appearance sparse-view 3d gaussian splatting in the wild, Neural Information Processing Systems (NeurIPS), 2025.
4. **K. Jiang**, Y. Fu, M. Varma T, Y. Belhe, X. Wang, H. Su, and R. Ramamoorthi, A construct-optimize approach to sparse view synthesis without camera pose, ACM SIGGRAPH, 2024.

3D Human Face Reconstruction, Animation, and Relighting

1. **K. Jiang**, X. Li, S. Park, R. Ramamoorthi, S. De Mello, and K. Nagano, Instant expressive gaussian head avatars at over 100 fps, IEEE European Conference on Computer Vision (ECCV), 2026.
2. **K. Jiang**, S.-Y. Chen, F.-L. Liu, H. Fu, and L. Gao, Towards high-quality and disentangled face editing in a 3d gan, IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2025.
3. **K. Jiang**, F.-L. Liu, S.-Y. Chen, P. Wan, Y. Zhang, Y.-K. Lai, H. Fu, and L. Gao, Nerffaceshop: Learning a photo-realistic 3d-aware generative model of animatable and relightable heads from large-scale in-the-wild videos, IEEE Transactions on Visualization and Computer Graphics (TVCG), 2025.
4. Z. Cai, **K. Jiang**, S.-Y. Chen, Y.-K. Lai, H. Fu, B. Shi, and L. Gao, Real-time 3d-aware portrait video relighting, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2024.
5. L. Gao, F.-L. Liu, S.-Y. Chen, **K. Jiang**, C.-P. Li, Y.-K. Lai, and H. Fu, Sketchfacenerf: Sketch-based facial generation and editing in neural radiance fields, ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH), 2023.
6. **K. Jiang**, S.-Y. Chen, H. Fu, and L. Gao, Nerffacelighting: Implicit and disentangled face lighting representation leveraging generative prior in neural radiance fields, ACM Transactions on Graphics, 2023.
7. **K. Jiang**, S.-Y. Chen, F.-L. Liu, H. Fu, and L. Gao, Nerffaceediting: Disentangled face editing in neural radiance fields, ACM SIGGRAPH Asia, 2022.

Human Computer Interaction

1. Z. Ning, B. L. Wimer, **K. Jiang**, K. Chen, J. Ban, Y. Tian, Y. Zhao, and T. J.-J. Li, Spica: Interactive video content exploration through augmented audio descriptions for blind or low-vision viewers, ACM Conference on Human Factors in Computing Systems (CHI), 2024.
2. Z. Ning, Z. Zhang, J. Ban, **K. Jiang**, R. Gan, Y. Tian, and T. J.-J. Li, Mimosa: Human-ai co-creation of computational spatial audio effects on videos, ACM Conference on Creativity & Cognition (C&C), 2024.

Skills

Languages — English, Chinese.

Coding — C, C++, CUDA, Python, JavaScript, TypeScript, Java, Go, LaTeX, PyTorch, …

Miscellaneous Experience

Scholarship and Awards

2026 — **Qualcomm Fellowship Finalist**, Qualcomm.

2025 — **M.S. Research Award**, University of California, San Diego, Computer Science and Engineering Department.

2023 — **Sensetime Scholarship**, Sensetime. Awarded to 30 Chinese undergraduate students nationwide in the field of AI.

2020-2022 — **National Scholarship for Colledge Students**, Beijing Jiaotong University.