Weijie Lyu

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Summary

Fourth-year Ph.D. candidate at UC Merced specializing in computer vision, with a current research focus on **video generation** and **3D/4D reconstruction**. First-author publications at top-tier CV/ML venues including CVPR, ICCV, ECCV, and NeurIPS; open-source projects with 500+ (FaceLift) and 400+ (Gaga) GitHub stars; industry experience at Apple, Adobe Research, and ByteDance.

Education

University of California, Merced, *Ph.D. in EECS* *Aug. 2023 – Present*
Advisor: **Prof. Ming-Hsuan Yang**

University of Illinois Urbana-Champaign, *M.S. in Computer Science* *Aug. 2021 – May 2023*
Advisor: **Prof. Derek Hoiem**
Thesis: *MACON: Memory-Augmented Continual Learning for Open-world Classification.*

ShanghaiTech University, *B.E. in Computer Science and Technology* *Sep. 2017 – Jul. 2021*
Senior Thesis Advisor: **Prof. Zhihao Jiang**
Thesis: *Intelligent Driving Verification Platform Based on Virtual Traffic Conditions.*
Awards: Outstanding Graduate of Shanghai; Outstanding Graduate of ShanghaiTech University

University of California, Berkeley, *Visiting Student in EECS* *Aug. 2019 – May 2020*
Undergraduate Research Advisor: **Prof. Sonia Bishop**

Research Experience

Apple, Cupertino, CA *May 2026 – Aug. 2026*

- **Research Scientist Intern**. Advisors: **Dr. Lu Jiang** and **Dr. Jianyi Wang**.
- Worked on agentic auto-research for video generation.

ByteDance, San Jose, CA *Feb. 2026 – May 2026*

- **Research Scientist Intern**. Advisors: **Dr. Yujing Wang** and **Dr. Xiangtai Li**.
- Developed a video-to-video generation model for geometry correction.

Adobe Research, San Jose, CA *May 2024 – Jan. 2026*

- **Research Scientist/Engineer Intern**. Advisor: **Dr. Zhixin Shu**.
- Developed FaceCam, a portrait video camera control framework without scale ambiguity ([3]), and FaceLift, a framework for high-fidelity 3D head reconstruction ([4]).

Publications

* denotes equal contribution. Full publication list: **Personal Page** / **Google Scholar**.

[1] **Learning to Correct Geometry in Generated Videos**
Weijie Lyu, Tiancheng Shen, Xiangtai Li, Yujing Wang, Xiaoyuan Wang, Haobo Yuan, Yizhou

Zhao, and Ming-Hsuan Yang
NeurIPS 2026 · **Project Page** / **arXiv**

[2] **Edit3r: Instant 3D Scene Editing from Sparse Unposed Images**
Jiageng Liu*, **Weijie Lyu***, Xueting Li, Yejie Guo, and Ming-Hsuan Yang
ECCV 2026 **(Oral)** · **Project Page** / **arXiv**

[3] **FaceCam: Portrait Video Camera Control via Scale-Aware Conditioning**
Weijie Lyu, Ming-Hsuan Yang, and Zhixin Shu
CVPR 2026 · **Project Page** / **arXiv**

[4] **FaceLift: Learning Generalizable Single Image 3D Face Reconstruction from Synthetic Heads**
Weijie Lyu, Yi Zhou, Ming-Hsuan Yang, and Zhixin Shu
ICCV 2025 · **Project Page** / **arXiv**

[5] **Gaga: Group Any Gaussians via 3D-aware Memory Bank**
Weijie Lyu, Xueting Li, Abhijit Kundu, Yi-Hsuan Tsai, and Ming-Hsuan Yang
TMLR 2026 · **Project Page** / **arXiv**

[6] **InstaInpaint: Instant 3D-Scene Inpainting with Masked Large Reconstruction Model**
Junqi You, Chieh Hubert Lin, **Weijie Lyu**, Zhengbo Zhang, and Ming-Hsuan Yang
NeurIPS 2025 · **Project Page** / **arXiv**

[7] **HoliGS: Holistic Gaussian Splatting for Embodied View Synthesis**
Xiaoyuan Wang, Yizhou Zhao, Botao Ye, Xiaojun Shan, **Weijie Lyu**, Lu Qi, Kelvin C.K. Chan, Yinxiao Li, and Ming-Hsuan Yang
NeurIPS 2025 · **arXiv**

[8] **PTT: Point-Trajectory Transformer for Efficient Temporal 3D Object Detection**
Kuan-Chih Huang, **Weijie Lyu**, Ming-Hsuan Yang, and Yi-Hsuan Tsai
CVPR 2024 · **arXiv**

[9] **Continual Learning in Open-vocabulary Classification with Complementary Memory Systems**
Zhen Zhu*, **Weijie Lyu***, Yao Xiao, and Derek Hoiem
TMLR 2024 · **arXiv**

[10] **Consistent Multimodal Generation via A Unified GAN Framework**
Zhen Zhu, Yijun Li, **Weijie Lyu**, Krishna Kumar Singh, Zhixin Shu, Sören Pirk, and Derek Hoiem
WACV 2024 · **arXiv**

[11] **SafeBench: A Benchmarking Platform for Safety Evaluation of Autonomous Vehicles**
Chejian Xu*, Wenhao Ding*, **Weijie Lyu**, Zuxin Liu, Shuai Wang, Yihan He, Hanjiang Hu, Ding Zhao, and Bo Li
NeurIPS 2022 · **Project Page** / **arXiv**

[12] **CircuitBot: Learning to Survive with Robotic Circuit Drawing**
Xianglong Tan, **Weijie Lyu**, and Andre Rosendo
PLOS ONE 2022 · **Paper**

Preprints

[13] **Rethinking Asymmetry in Self-Supervised 3D Geometry Learning**
Gyeongjin Kang, Freeman Cheng, Botao Ye, **Weijie Lyu**, Ming-Hsuan Yang, and Eunbyung Park

Preprint 2026 · **Project Page / arXiv**

[14] **AudioLift: Audio-Driven Single Image to Full-Head Gaussian Avatar via Multi-view Video Generation**
Zhuoyuan Jiang, **Weijie Lyu**, Xiaoyuan Wang, Tiancheng Shen, and Ming-Hsuan Yang
Preprint 2026 · **Project Page / arXiv**

[15] **COMPASS: Contextual Moment Prior Alignment for Generalizable AIGI Detection**
Zhan Yang, Tiancheng Shen, **Weijie Lyu**, Shuo Chen, Bernard Ghanem, Yibo Yang, and Ming-Hsuan Yang
Preprint 2026 · **arXiv**

Academic Service

Conference Reviewer: CVPR, ICCV, ECCV, ICLR, NeurIPS, ACM MM, ACM SIGGRAPH, etc.
Journal Reviewer: IEEE TPAMI, TMLR, ACM TOG, etc.