

## EDUCATION

- **The Chinese University of Hong Kong** Hong Kong SAR, China  
Ph.D., Multimedia Laboratory (MMLab). Supervisor: Prof. Dahua Lin, Prof. Ziwei Liu 2021 – 2025 (Expected)
- **Zhejiang University** Hangzhou, China  
B.S. in Computer Science; GPA: 3.97/4.00. Rank: 1/154 2017 – 2021

## RESEARCH INTERESTS

Computer Vision, Generative Modeling, Foundation GenAI, Image/Video/3D/4D Generation

## PREPRINT

(\* denotes equal contribution)

- **TC4D: Trajectory-Conditioned Text-to-4D Generation**  
Sherwin Bahmani\*, **Xian Liu\***, Wang Yifan\*, Ivan Skorokhodov, Victor Rong, Ziwei Liu, Xihui Liu, Jeong Joon Park, Sergey Tulyakov, Gordon Wetzstein, Andrea Tagliasacchi, David Lindell  
Preprint, under review.
- **BrushNet: A Plug-and-Play Image Inpainting Model with Decomposed Dual-Branch Diffusion**  
Xuan Ju, **Xian Liu**, Xintao Wang, Yuxuan Bian, Ying Shan, Qiang Xu  
Preprint, under review.

## CONFERENCE PUBLICATIONS

(\* denotes equal contribution)

- **HumanGaussian: Text-Driven 3D Human Generation with Gaussian Splatting**  
**Xian Liu**, Xiaohang Zhan, Jiayang Tang, Ying Shan, Gang Zeng, Dahua Lin, Xihui Liu, Ziwei Liu  
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024. **(Highlight, Top 2.8%)**
- **HyperHuman: Hyper-Realistic Human Generation with Latent Structural Diffusion**  
**Xian Liu**, Jian Ren, Aliaksandr Siarohin, Ivan Skorokhodov, Yanyu Li, Dahua Lin, Xihui Liu, Ziwei Liu, Sergey Tulyakov  
International Conference on Learning Representations (ICLR), 2024.
- **Semantic-Aware Implicit Neural Audio-Driven Video Portrait Generation**  
**Xian Liu**, Yinghao Xu, Qianyi Wu, Hang Zhou, Wayne Wu, Bolei Zhou  
European Conference on Computer Vision (ECCV), 2022. **(Oral Presentation, Top 2.7%)**
- **Audio-Driven Co-Speech Gesture Video Generation**  
**Xian Liu**, Qianyi Wu, Hang Zhou, Yuanqi Du, Wayne Wu, Dahua Lin, Ziwei Liu  
Advances in Neural Information Processing Systems (NeurIPS), 2022. **(Spotlight Presentation, Top 5%)**
- **Learning Hierarchical Cross-Modal Association for Co-Speech Gesture Generation**  
**Xian Liu**, Qianyi Wu, Hang Zhou, Yinghao Xu, Rui Qian, Xinyi Lin, Xiaowei Zhou, Wayne Wu, Bo Dai, Bolei Zhou  
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2022.
- **Taming Diffusion Models for Audio-Driven Co-Speech Gesture Generation**  
**Xian Liu\***, Lingting Zhu\*, Xuanyu Liu, Rui Qian, Ziwei Liu, Lequan Yu  
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023.
- **Visual Sound Localization in the Wild by Cross-Modal Interference Erasing**  
**Xian Liu\***, Rui Qian\*, Hang Zhou\*, Di Hu, Weiyao Lin, Ziwei Liu, Bolei Zhou, Xiaowei Zhou  
AAAI Conference on Artificial Intelligence (AAAI), 2022.

- **TextCrafter: Your Text Encoder Can be Image Quality Controller**  
Yanyu Li, Xian Liu, Anil Kag, Ju Hu, Yerlan Idelbayev, Dhritiman Sagar, Yanzhi Wang, Sergey Tulyakov, Jian Ren  
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024.
- **Object-Compositional Neural Implicit Surfaces**  
Qianyi Wu, Xian Liu, Yuedong Chen, Kejie Li, Chuanxia Zheng, Jianfei Cai, Jianmin Zheng  
European Conference on Computer Vision (ECCV), 2022.
- **MonoHuman: Animatable Human Neural Field from Monocular Video**  
Zhengming Yu, Wei Cheng, Xian Liu, Wayne Wu, Kwan-Yee Lin  
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023.
- **Semantics Meets Temporal Correspondence: Self-supervised Object-centric Learning in Videos**  
Rui Qian, Shuangrui Ding, Xian Liu, Dahua Lin  
International Conference on Computer Vision (ICCV), 2023.
- **Unbiased Video Representation Learning with Decoupled Mutual Information Constraint**  
Rui Qian, Shuangrui Ding, Xian Liu, Dahua Lin  
European Conference on Computer Vision (ECCV), 2022.
- **Motion Capture from Internet Videos**  
Junting Dong, Qing Shuai, Yuanqing Zhang, Xian Liu, Xiaowei Zhou, Hujun Bao  
European Conference on Computer Vision (ECCV), 2020. **(Oral Presentation, Top 2%)**
- **E<sup>2</sup>GAN: Efficient Training of Efficient GANs for Image-to-Image Translation**  
Yifan Gong, Zheng Zhan, Qing Jin, Yanyu Li, Yerlan Idelbayev, Xian Liu, Andrey Zharkov, Kfir Aberman, Sergey Tulyakov, Yanzhi Wang, Jian Ren  
International Conference on Machine Learning (ICML), 2024.
- **Make-A-Volume: Leveraging Latent Diffusion Models for Cross-Modality 3D Brain MRI Synthesis**  
Lingting Zhu, Zeyue Xue, Zhenchao Jin, Xian Liu, Jingzhen He, Xuanyu Liu, Ziwei Liu, Lequan Yu  
Medical Image Computing and Computer Assisted Intervention (MICCAI), 2023.
- **Enhancing Self-supervised Video Representation Learning via Multi-level Feature Optimization**  
Rui Qian, Yuxi Li, Huabin Liu, John See, Shuangrui Ding, Xian Liu, Dian Li, Weiyao Lin  
International Conference on Computer Vision (ICCV), 2021.

## JOURNAL PUBLICATIONS

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- **ChemSpace: Toward Steerable and Interpretable Chemical Space Exploration**  
Yuanqi Du, Xian Liu, Shengchao Liu, Jieyu Zhang, Bolei Zhou  
Transactions on Machine Learning Research (TMLR), 2023.

## WORKSHOP PAPERS

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- **Interpreting Molecular Space with Deep Generative Models**  
Yuanqi Du, Xian Liu, Shengchao Liu, Jieyu Zhang, Bolei Zhou  
ELLIS Machine Learning for Molecule Discovery Workshop, 2021. **(Oral Presentation)**  
ICLR Machine Learning for Drug Discovery Workshop, 2022.

## WORKING EXPERIENCE

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- **Deep Imagination Research Group, NVIDIA Research** Santa Clara, America  
Research Scientist Intern. Supervisor: Ting-Chun Wang, Ming-Yu Liu  
Topic: Image/Video Generation Foundation Model  
Mar. 2024 - Now
- **University of Toronto** Toronto, Canada  
Visiting Student. Collaborator: Sherwin Bahmani, David B. Lindell  
Topic: Text-to-4D Generation  
Dec. 2023 - Mar. 2024
- **Tencent AI Laboratory** Shenzhen, China  
Research Intern. Supervisor: Ying Shan, Xiaohang Zhan  
Topic: Text-Driven 3D Human Generation  
Sept. 2023 - Dec. 2023

- **Creative Vision Group, Snap Research** Los Angeles, America  
Research Intern. Supervisor: Sergey Tulyakov, Jian Ren, Aliaksandr Siarohin  
Topic: Human Generation Foundation Model  
May. 2023 - Sept. 2023
- **Digital Content Group, Shanghai AI Laboratory** Shanghai, China  
Research Intern. Supervisor: Hang Zhou, Wayne Wu  
Topic: Audio-Visual Learning, Generative Modeling  
Jul. 2021 - Feb. 2022
- **Intelligent Video Group, SenseTime Research** Shanghai, China  
Research Intern. Supervisor: Qianyi Wu, Bo Dai  
Topic: Audio-Driven Talking Face Generation, Co-Speech Gesture Generation  
Aug. 2020 - Jun. 2021

#### PROFESSIONAL SERVICES

- **Conference Program Committee / Reviewer:** CVPR (2022-2024), ECCV (2022-2024), ICCV (2023), SIGGRAPH (2024), SIGGRAPH Asia (2022, 2023), NeurIPS (2022-2024), ICML (2022-2024), ICLR (2023, 2024), AAAI (2022-2025).
- **Journal Reviewer:** IJCV, TVCG, PG.

#### SELECTED HONORS & AWARDS

- **CVPR Travel Award** 2024
- **ICLR Travel Award** 2024
- **National Scholarship** 2019, 2020
- **Hong Kong Ph.D. Fellowship Scheme (HKPFS)** 2021-2025
- **Outstanding Graduate, Zhejiang Province** 2021
- **SenseTime Scholarship** 2020
- **Tang Lixin Scholarship** 2019
- **First Class Scholarship for Academic Excellence** 2019, 2020