YUCHEN LIU

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RESEARCH INTERESTS

My research interests lies in visual generative modeling, where I aim to make them better and faster. Currently, I am focusing on the post training stack of visual foundation models, diffusion models and MLLMs, via diffusion distillation and reinforcement learning.

EDUCATION

Princeton University — Princeton, NJ, U.S.
Doctor of Philosophy in Electrical and Computer Engineering — *September 2017 – November 2022*
Supervisor: Prof. S.Y. Kung and Prof. David Wentzlaff

Hong Kong University of Science and Technology — Hong Kong
Bachelor of Engineering in Electronic and Computer Engineering — *September 2013 – June 2017*
Minor: Information Technology

EXPERIENCE

Adobe Research — San Jose, CA, U.S.
Research Scientist/Engineer II — *July 2024 – Present*
Work on diffusion distillation for few-step image and video generation.
Research Scientist/Engineer I — *December 2022 – June 2024*
Work on network compression, technology transferred to Firefly Image 2.

Adobe Research — San Jose, CA, U.S.
Research Intern — *May – November 2021*
Work with Dr. Zhixin Shu on a 3D-controllable GAN for face manipulation.

Adobe Research — San Francisco, CA, U.S.
Research Intern — *May – November 2020*
Work with Dr. Federico Perazzi and Dr. Zhixin Shu on compressing StyleGAN2.

Massachusetts Institute of Technology — Cambridge, MA, U.S.
Research Intern — *June – August 2016*
Work with Prof. Dina Katabi on gait velocity and stride length estimation from wireless signals.

PUBLICATIONS

1. Sicheng Mo, Thao Nguyen, Xun Huang, Siddharth Srinivasan Iyer, Yijun Li, **Yuchen Liu**, Abhishek Tandon, Eli Shechtman, Krishna Kumar Singh, Yong Jae Lee, Bolei Zhou, and Yuheng Li "X-Fusion: Introducing New Modality to Frozen Large Language Models". **Best Paper** in the *Computer Vision and Pattern Recognition Workshop on Transformers for Vision, CVPRW 2025.* (*project page*)

2. Yongsheng Yu, Haitian Zheng, Zhifei Zhang, Jianming Zhang, Yuqian Zhou, Connelly Barnes, **Yuchen Liu**, Wei Xiong, Zhe Lin, and Jiebo Luo. "ZipIR: Latent Pyramid Diffusion Transformer for High-Resolution Image Restoration". *ArXiv 2025.* (*arxiv*)

3. Bhishma Dedhia, David Bourgin, Krishna Kumar Singh, Yuheng Li, Yan Kang, Zhan Xu, Niraj K Jha, and **Yuchen Liu**. "Generating, Fast and Slow: Scalable Parallel Video Generation with Video Interface Networks ". *ArXiv 2025.* (*project page*)

4. Zihan Ding, Chi Jin, Difan Liu, Haitian Zheng, Krishna Kumar Singh, Qiang Zhang, Yan Kang, Zhe Lin, and **Yuchen Liu**. "DOLLAR: Few-Step Video Generation via Distillation and Latent Reward Optimization". *ArXiv 2024.* (*project page*)

5. Alireza Ganjdanesh, Yan Kang, **Yuchen Liu**, Richard Zhang, Zhe Lin, and Heng Huang. "Mixture of efficient diffusion experts through automatic interval and sub-network selection". In Proceedings of the *European Conference on Computer Vision, ECCV 2024.* (*paper*)

6. Zhengang Li, Yan Kang, **Yuchen Liu**, Difan Liu, Tobias Hinz, Feng Liu, and Yanzhi Wang. "SNED: Superposition Network Architecture Search for Efficient Video Diffusion Model". In Proceedings of the *Conference on Computer Vision and Pattern Recognition, CVPR 2024.* (*paper*)

7. Cusuh Ham, Matthew Fisher, James Hays, Nicholas Kolkin, **Yuchen Liu**, Richard Zhang, and Tobias Hinz. "Personalized Residuals for Concept-Driven Text-to-Image Generation". In Proceedings of the *Conference on Computer Vision and Pattern Recognition, CVPR 2024.* (*paper*)

8. Hongjie Wang, Difan Liu, Yan Kang, Yijun Li, Zhe Lin, Niraj Jha, and **Yuchen Liu**. "Attention-Driven Training-Free Efficiency Enhancement of Diffusion Models". In Proceedings of the *Conference on Computer Vision and Pattern Recognition, CVPR 2024.* (*project page*)

9. **Yuchen Liu**, Georgios Tziantzioulis, and David Wentzlaff. "Building Efficient Neural Prefetcher". In Proceedings of the *International Symposium on Memory Systems, MEMSYS 2023.* (*paper*)

10. **Yuchen Liu**, Zhixin Shu, Yijun Li, Zhe Lin, Richard Zhang, and S.Y. Kung. "3D-FM GAN: Towards 3D-Controllable Face Manipulation". In Proceedings of the *European Conference on Computer Vision, ECCV 2022.* (*project page*)

11. **Yuchen Liu**, S.Y. Kung and David Wentzlaff. "Evolving Transferable Neural Pruning Functions". In Proceedings of the *Genetic and Evolutionary Computation Conference, GECCO 2022.* (*paper*)

12. **Yuchen Liu**, David Wentzlaff and S.Y. Kung. "Class-Discriminative Network Compression". Accepted to *International Conference on Pattern Recognition, ICPR 2022.* (*paper*)

13. **Yuchen Liu**, Zhixin Shu, Yijun Li, Zhe Lin, Federico Perazzi, and S.Y. Kung. "Content-Aware GAN Compression". In Proceedings of the *Conference on Computer Vision and Pattern Recognition, CVPR 2021.* (*project page*)

14. **Yuchen Liu**, David Wentzlaff and S.Y. Kung. "Rethinking Class-Discrimination Based CNN Channel Pruning". *ArXiv 2020.* (*arxiv*)

15. S.Y. Kung, Zejiang Hou and **Yuchen Liu**. "Methodical Design and Trimming of Deep Learning Networks: Enhancing External BP learning with Internal Omnipresent-Supervision Training Paradigm". In Proceedings of the *International Conference on Acoustics, Speech, and Signal Processing, ICASSP 2019.* (*paper*)

16. Chen-Yu Hsu, **Yuchen Liu**, Zachary Kabelac, Rumen Hristov, Dina Katabi, and Christine Liu. "Extracting Gait Velocity and Stride Length from Surrounding Radio Signals". In Proceedings of the *Conference on Human Factors in Computing Systems, CHI 2017.* (*paper*)

TECH TRANSFERS

1. Adobe Firefly Image 2 (core researcher for model efficiency), 2023. (link)

2. Adobe Firefly Image 1, 2023. (link)

PATENTS

1. Compressing Generative Adversarial Neural Networks (with Adobe Research)

2. Identity Preserved Controllable Facial Image Manipulation (with Adobe Research)

3. Video Generation Using Frame-wise Token Embeddings (with Adobe Research)

4. Video Diffusion Using Superposition Network Architecture Search (with Adobe Research)

5. Several other patents under filing (with Adobe Research)

HONORS & AWARDS

Best Paper Awards in CVPRW May 2025
X-Fusion: Introducing New Modality to Frozen Large Language Models.

HKUST Outstanding Undergraduate May 2017
Awarded to top 3% of graduating undergraduate students.

The 14th National Challenge Cup, National Round, Third Prize October 2015
Innovation competition joined by more than 2.5 million students from over 3,000 institutions

HKUST 2015 President's Cup, Gold Award June 2015
University undergraduate innovative research competition, involving more than 40 groups of students

Scholarship Scheme for Continuing Undergraduate Students 2013 – 2017
Awarded to the top 5% of students

Dean's List 2014 – 2017
Acknowledgement from HKUST's dean to students with excellent academic performance

HKSAR Reaching Out Award June 2016
Awarded to students with international research experience

SERVICES

CVPR Reviewer	2021, 2023, 2024, 2025
NeurIPS Reviewer	2021, 2022, 2023, 2024
ICML Reviewer	2022, 2023, 2024, 2025
ICLR Reviewer	2024, 2025
ECCV/ICCV Reviewer	2024, 2025
WACV Reviewer	2023, 2024
AAAI Reviewer	2023, 2024
ACM Computing Surveys Reviewer	2024

TECHNICAL SKILLS

Programming	C/C++, Python, Javascript, VHDL, Verilog
Vision / Deep Learning	TensorFlow, PyTorch, OpenCV, MATLAB
Miscellaneous	iPython, Git, UNIX shell script, HTML/CSS, Android, Mathematica, ROS