XIN CAI

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🎓 EDUCATION

The Chinese University of Hong Kong, Hong Kong, China — 2023 – Present
Ph.D. in Information Engineering, expected June 2027 **Supervisor: Prof. Tianfan Xue**

Institute of Computing Technology, Chinese Academy of Sciences, Beijing, China — 2020 – 2023
M.Eng. in Applied Computer Technology **Supervisor: Prof. Shiguang Shan**

University of Chinese Academy of Sciences (UCAS), Beijing, China — 2016 – 2020
B.S. in Computer Science and Technology **Cumulative GPA: 3.90/4.00** **Rank: 2/69**

🔍 RESEARCH INTERESTS

Computational Imaging and Photography: Image reconstruction; Image and video processing
3D Computer Vision: 3D reconstruction, rendering and generation
Generative Model: Inverse problem with generative model; Controllable editing and generation
Applied Computer Vision Techniques: Gaze estimation; Emotion recognition

👥 RESEARCH EXPERIENCE

Research Scientist Intern **Adobe Research**, San Jose, CA, USA — June. 2024 – Sep. 2024
- Topic: mobile burst matting from the fusion of parallax cues.
- Worked with Zhoutong Zhang, Jiawen Chen, Zhihao Xiao, Cecilia Zhang, and Lars Jebe.

Research Assistant **MMLab@CUHK**, Hong Kong, China — Sep. 2023 – Present
- Topic: generative model for inverse imaging problems.
- Worked with Prof. Tianfan Xue.

Research Intern **Shanghai AI Laboratory**, Beijing, China — May. 2023 – Aug. 2023
- Topic: an end-to-end optimized lensless system for privacy-preserving face verification.
- Worked with Wentao Liu, Prof. Tianfan Xue and Prof. Jinwei Gu.

Research Assistant **VIPL@ICT, CAS**, Beijing, China — Sep. 2021 – May. 2023
- Topic: real-time point-of-gaze estimation system.
- Worked with Prof. Shiguang Shan and Prof. Jiabei Zeng.

📑 PUBLICATIONS

- **X. Cai**, Z. You, H. Zhang, W. Liu, J. Gu, T. Xue. "PhoCoLens: Photorealistic and Consistent Reconstruction in Lensless Imaging." NeurIPS **(Spotlight)**, 2024.
- **X. Cai**, H. Zhang, C. Wang, W. Liu, J. Gu, T. Xue. "LenslessFace: An End-to-End Optimized Lensless System for Privacy-Preserving Face Verification." *in submission*, 2024.
- **X. Cai**, J. Zeng, S. Shan, and X. Chen, "Source-free Adaptive Gaze Estimation with Uncertainty Reduction, "The IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR), 2023.
- **X. Cai**, J. Zeng and S. Shan, "Landmark-aware Self-supervised Eye Semantic Segmentation," IEEE International Conference on Automatic Face and Gesture Recognition (FG), 2021.
- **X. Cai**, B. Chen, J. Zeng, et al. "Gaze Estimation with an Ensemble of Four Architectures." arXiv preprint arXiv:2107.01980, 2021. (Technical report for the **winner** solution in ETH-XGaze Gaze Estimation Challenge@CVPR 2021)

📖 Teaching

Teaching Assistant, CSCI2100B Data Structures	Fall 2023, CUHK
Teaching Assistant, IERG2080/ESTR2306 – Introduction to Systems Programming	Spring 2024, CUHK
Teaching Assistant, IERG5670 – Computational Imaging Systems and Algorithms	Fall 2024, CUHK

👥 Services

Conference Reviewer: CVPR, NeurIPS, ICLR, AAAI.
Journal Reviewer: IEEE TIP, CVIU.

♡ Honors and Awards

Academy Scholarship of University of Chinese Academy of Science	2017, 2018 and 2019
National Encouragement Scholarship	2017, 2018 and 2019
The Tang Lixin Academic Excellence Scholarship	Jun. 2020
1st Prize, Award on ETH-XGaze Challenge	Jun. 2021
Merit Student of University of Chinese Academy of Sciences	2018, 2021 and 2023
Postgraduate Studentship	Mar. 2023

⚙ Skills

- Programming Languages: Python == C > C++
- Framework: PyTorch > TensorFlow
- Development: FFmpeg, Qt, Git