Hanyuan Xiao

https://corneliushsiao.github.io/index.html

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Introduction

I am a PhD student in Vision and Graphics Lab at Institute for Creative Technologies (ICT), an affiliated institution of University of Southern California. My research area is in 3D generative model and editing and neural rendering. Besides, I had research and engineering experience in human body performance capture, inverse rendering and 3D reconstruction.

Education

- **University of Southern California (USC)** — Los Angeles, CA
  Doctorate (PhD) in Computer Science; GPA: 3.88 — *May 2025*
- **University of Southern California (USC)** — Los Angeles, CA
  Master of Science (M.S.) in Data Science; GPA: 3.88 — *May 2021*
- **Rensselaer Polytechnic Institute (RPI)** — Troy, NY
  Bachelor of Science (B.S.) in Computer Science and Electrical Engineering (dual major); GPA: 3.95 — *May 2019*
  - **Honor**: Dean's Honor List (2015-2018), Distinguished Student

Patent & Publications

- **Light Sampling Field and BRDF Representation for Physically-Based Neural Rendering**
  ICLR 2023 Poster
- **Multiview Neural Human Prediction Using Implicit Differentiable Renderer For Facial Expression, Body Pose Shape And Clothes Performance Capture**
  US 2022/0319055 A1
- **Systems and Methods for Physically-based Neural Face Shader via Volumetric Lightmaps**
  U.S. Provisional Application Serial No. 63/183,497

Related Research & Projects

- **Text-guided Localized Scene Editing with Generative 3D Gaussian Splatting** — Los Angeles, CA
  Research project — *Jul 2023 — Present*
  - **Status**: Under preparation for submission
- **Free-View Volumetric Human Body Capture via Sparse Representation** — Los Angeles, CA
  Research project — *Oct 2022 — Present*
  - **Status**: Under preparation for submission
- **MVS-PERF: Multiview SMPL-X and Clothes Performance Capture using NeRF** — Los Angeles, CA
  Internship project — *May 2021 — December 2021*
- **Light Sampling Field and BRDF Representation for Physically-Based Neural Rendering** — Los Angeles, CA
  Research project — *October 2020 — May 2022*
- **One-shot Aerial: 3D Scene Segmentation and Reconstruction from Aerial Viewpoint** — Los Angeles, CA
  Research project — *May 2020 — October 2020*
- **3D Reconstruction of Rigid Objects by Correspondence** — Los Angeles, CA
  Research project — *September 2019 — March 2020*
- **Food Method GAN** — Los Angeles, CA
  Course project — *September 2019 — December 2019*
- **Water Freezing Simulation** — Los Angeles, CA
  Course project — *November 2019 — December 2019*
- **VR Acquisition & Application Development for School of Engineering Research** — Troy, NY
  Undergraduate Researcher — *January 2018 — Spring 2019*

Work Experience

- **Teaching Assistant** — Los Angeles, CA
  Introduction to Artificial Intelligence — *January 2022 — Present*
- **Teaching Assistant** — Los Angeles, CA
  Discrete Methods in Computer Science — *September 2022 — December 2022*
- **Research Intern** — San Jose, CA
  Sony R&D Center — *May 2021 — December 2021*
  - **Mentor**: Qing Zhang
  - **Manager**: Kenji Tashiro
  - **Topic**: Multi-view Neural Human Performance Capture
- **Teaching Assistant** — Los Angeles, CA
  Data Structures and Object Oriented Design — *January 2021 — December 2021*
- **Teaching Assistant** — Troy, NY
  Laboratory Introduction to Embedded Control — *September 2016 — May 2019*

Related Courseworks

- **Differential Geometry** 2023 Spring
- **Advanced Computer Vision** 2020 Fall
- **Deep Learning and its Applications** 2019 Fall
- **3-D Graphics and Rendering** 2019 Fall
- **Machine Learning From Data** 2018 Fall
- **Digital Signal Processing** 2018 Fall

Skills

- **Programming Languages:** Python, C++, C
- **Software:** Blender, Autodesk Maya, Matlab

Languages

- **Chinese (Mandarin)**
  Native
- **English**
  Bilingual fluency

Hobbies

- **Fitness Enthusiast**
  A 5-year commitment to a workout routine at gym or at home (during pandemic)