

# Siyuan Xie

## Curriculum Vitae

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## EDUCATION

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**University of California, Berkeley** 2024.08 - 2025.06 (Expected)

**COE Exchange Program, Computer Science**

- Total GPA: 4.0/4.0

**ShanghaiTech University, Shanghai, China** 2022.09 - 2026.06 (Expected)

**Computer Science**

- Total GPA: 3.86/4.0 (Major GPA: 4.0/4.0)

- Major Ranking: 3/162

- TOEFL: 105/120

- Strength: Solid Programming/Maths Foundation; Excellent Leadership and Socialite; Devotion to Research; Strong Self-learning Capability;

- Previous Research Areas: Computer Vision (Gaussian Splat/NeRF/Diffusion), LLM/LLM Agents

## INTERN AND WORK EXPERIENCE

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**VRVC Lab, Frontier Base, ShanghaiTech University** 2023.09 - 2024.09

**Undergraduate Research Intern** — Shanghai NeuDim Digital Technology Inc.

Actively involved in researches related to DL-driven 3D scene reconstruction, such as NeRF and 3D Gaussian Splatting; Involved in the work of running experiments, writing codes and data processing. Also associated with development of server backend.

**Introduction to Information Science and Technology (SI100B)** 2023.09 - 2024.01

**Teaching Assistant** — ShanghaiTech University

Designed project for freshman; Responsible for validating homework problems and writing data points; Tutored lectures and recitation classes; Offered fixed office hours for individually-specific teaching; Checked academic integrity for homework.

## PUBLICATIONS

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**V<sup>3</sup>: Viewing Volumetric Videos on Mobiles via Streamable 2D Dynamic Gaussians**

Penghao Wang, Zhirui Zhang, Liao Wang, Kaixin Yao, **Siyuan Xie**, Jingyi Yu, Minye Wu, Lan Xu.

SIGGRAPH Asia 2024 (ACM Transactions on Graphics)

Project Page / Video / Arxiv

## SELECTED PROJECTS

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**SPATIAL PERCEPTION AND REASONING BENCHMARK (SPARK)**

— A SCAVENGER HUNT GAME FOR LLM AGENTS

24 FALL CS194 Dawn Song

**[3rd Place in LLM-Agents Hackathon Benchmark Track, held by RDI Center, Berkeley]**

**Lead and design** a benchmark on LLM Agents, assessing their capability on navigating throughout real-world street views. Focuses on assessing spatial intelligence and visual capabilities, also built a QA-system for testing agents as navigation guidance.

Github / Video / Paper / Hackathon Page

**Secure File Sharing System**

24 FALL CS161, David Wagner

**Lead and design** a secure file sharing system on a **totally unreliable** data server where attacker can see and retrieve everything. Designed login-authentication, encryption/mac, file-structure and related data structures. Scored **top 15% in class** under totally unknown test cases.

**[Class Choice Award Runner up]: DDPM**

24 FALL CS180, Alexei (Alyosha) Efros

Implemented a DDPM for generating hand-written numbers **from scratch**. Also implemented some common DDPM algorithms, e.g. SDEdit, Classifier Free Guidance, In-Painting and Visual Anagrams for real-world image generation / modification.

Project Report Page: DDPM

## NeRF

24 FALL CS180, Alexei (Alyosha) Efros

Re-implemented NeRF (Neural Radiance Fields) **from scratch**, including volumn-rendering, positional encoding, 3d projecting and sampling.

Project Report Page: NeRF

## Automatic Image Panorama

24 FALL CS180, Alexei (Alyosha) Efros

Implemented an automatic image panorama tool using Harris corner detection, adaptive non-maximal suppression, RANSAC and perspective transforms.

Project Report Page: Automatic Image Panorama

## [Class Choice Award Runner up]: Face Morphing

24 FALL CS180, Alexei (Alyosha) Efros

Implemented a 2D face morphing algorithm; Calculated mean faces; Used PCA to extract features and do feature transfer.

Project Report Page: Face-Morphing

## AWARDS AND HONORS

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**The Third Prize, Asia and Pacific Mathematical Contest in Modelling** APMCM, 2022

**Merit Student 2023** ShanghaiTech University, 2023

**Merit Student of Social Practice** ShanghaiTech University, 2023

**The Third Prize, Innovation and Creative Works Contest** ShanghaiTech University, 2023

**Merit Student 2024** ShanghaiTech University, 2024

## VOLUNTEER EXPERIENCE AND ACTIVITIES

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**School of Information Science and Technology (SIST)** 2022.09 - 2023.09

**Volunteer** — ShanghaiTech University

Scheduled experience-sharing sessions for senior students/graduates; Designed posters; Volunteered in SIST (School of Information Science and Technology) socialising activities.

**Plasma Band** 2022.09 - Present

**Pianist/Keyboard**

Attended neumerous band performance, such as New-Years' Gala, Prism's Live and many other activities. Responsible for performing keyboard, composing piano scores and arranging band rehearsals.

## SKILLS

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**Programming Languages:** Python, C/C++, Go, MATLAB

**AI Frameworks:** Pytorch / Autogen, OpenAI

**Programming Backends:** FastAPI, Flask / Neu4j, SQLite

**Language:** English(Fluent), Chinese(Native)

**Other:** Piano(Highest rank), Music Theory (Inter-medium), certified by Shanghai Conservatory of Music