

# 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**

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

- Total GPA: 3.85/4.0
- Major Ranking: 4/162
- 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 - Present  
**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

**Leaded and designed** 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

**Secure File Sharing System**

24 FALL CS161, David Wagner

**Leaded and designed** 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

ShanghaiTech University, 2023

Merit Student of Social Practice

ShanghaiTech University, 2023

The Third Prize, Innovation and Creative Works Contest

ShanghaiTech University, 2023

## 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, Go, C/C++, MATLAB

**Programming Backends:** PyTorch, Flask

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

**Other skills:** Piano(Highest rank, certified by Shanghai Conservatory of Music)