

Yuhe Qin

📍 Shenzhen, Guangdong, China ✉ 12211057@mail.sustech.edu.cn 🌐 arrownf98lioc.github.io

Education

Southern University of Science and Technology

Sept 2022 – July 2026(*expected*)

Candidate for a Bachelor of Science degree in Mathematics, Fields Honors Class

- **GPA:** 3.57/4.0

- **Selected Courses:**

| | | | |
|------------------------------------|----|--------------------------------------|----|
| Topology | 91 | Machine Learning | 88 |
| Optimization | 85 | Ordinary Differential Equations A(H) | 90 |
| Introduction to Python Programming | 98 | Probability and Statistics | 97 |

University of California, Berkeley

Jan 2025 – Dec 2025(*expected*)

Visiting Student

- **GPA:** 3.9/4.0

- **CS Courses:**

| | |
|---|----|
| Foundation of Computer Graphics | A |
| Data Structure | A |
| Structure and Interpretation of Computer Programs | A- |

Computer Graphic Projects

Procedural Planet Generation (Unity6) [Link](#) [🔗](#)

May 2025 – Aug 2025

- Built a **multilayer noise system** for procedural terrain generation with analytic normals and tangents.
- Developed **NoiseVisualizer2D**, a Unity editor tool for real-time visualization and blending of noise layers.
- Designed a **biome-inspired shader** where vertex colors drive both surface color and **PBR properties** (metalness, smoothness).

Computer Graphics Coursework (UC Berkeley) [Link](#) [🔗](#)

Jun 2025 – Aug 2025

- HW1 Rasterizer – Implemented a 2D rasterizer with triangle rasterization, texture mapping, and supersampling.
- HW2 MeshEdit – Built mesh editing operators (edge split/flip, Loop subdivision) for interactive geometry processing.
- HW3 Path Tracer – Developed a physically based path tracer with global illumination, multiple bounces, and adaptive sampling.
- Final Project (extension of HW3) – Extended the path tracer with advanced materials; implemented a **glass BSDF** for realistic refraction and specular effects.

Game Development Experience

2025 CiGA Game Jam [Link](#) [🔗](#)

Jun 27–29 2025

- Completed Unity development, delivering a fully functional RPG with a complete storyline within 48 hours.

2025 GMTK Game Jam [Link](#) [🔗](#)

Jul 30 – Aug 3 2025

- Contributed as a Technical Artist, creating and implementing real-time visual effects.
- Co-developed a 3D simulation game using Unreal Engine.

Research Experience

Computational Topology Research

March 2024 – September

Research Intern, supervised by Prof. Yifei Zhu

2024 Shenzhen, China

- Investigating applications of the **gestalt principle** in audio perception.
- Aiming to develop more effective **computational methods for audio recognition**.

Skills

Programming: Python, Java, C++, C#

Software: L^AT_EX


Engine: Unity, Unreal Engine

Conference Experience

SPIRES 2024

August 2024

Organized by the Centre for Topological Data Analysis at the Mathematical Institute, University of Oxford

- Created a [poster](#)  to showcase the research results of the project group.

The First Seminar on Artificial Intelligence and Mathematics

July 2024

Organized by the Mathematical Science Research Center, Chongqing University of Technology

- Engaged in discussions with graduate students from other universities who are interested in applied mathematics.

Seminar Experience

Linear Algebra in Extremal Combinatorics

Spring 2024

- Present talks on Borsuk's Conjecture and Ramsey and the independence number of the orthogonality graph.

Fourier Analysis Student Seminar

Fall 2023

- Present talks on the elementary theory of the Fourier transform on \mathbb{R} and its applications, including the Poisson summation formula, the Heisenberg uncertainty principle, and some PDEs.

Introduction to Set Theory

Spring 2023

- Present a talk on the statement of the axiom of choice and its equivalent forms.