Anya Agarwal

anya04@seas.upenn.edu | 510-579-0092 | https://anya0402.github.io/

Education

University of Pennsylvania School of Engineering & Applied Science **May 2027**

M.S.E in Computer Graphics and Game Technology GPA: 4.00

University of California, Berkeley College of Computing, Data Science, and Society **May 2025**

B.A. in Computer Science, Certificate in Design Innovation GPA: 3.86

Relevant Courses: GPU Programming, Computer Graphics, Computer Animation, 3D Computer Modeling, Data Structures, Algorithms, Signals and Systems, Machine Learning, Operating Systems, Computer Architecture, User Interfaces, Probability, Data Science, Prototyping and Fabrication, Design Methodology

Skills

Languages: C++, C, CUDA, WebGPU, DX12, OpenGL, Python, Java, React.js, HTML, Javascript, Typescript, Pandas, SQL

Tools: Autodesk Maya, Unity, Adobe Photoshop & Substance Painter & Premiere Pro, Figma

Projects

glRemix: DX12 Remastering Platform for OpenGL 1.0 Apps **December 2025**

- Created a DirectX 12 platform to remaster OpenGL 1.0 apps with real-time path tracing without using its source code.
- Intercepted OpenGL calls with a shim layer, and used interprocess communication to send to DX12 renderer.
- Implemented features such as asset replacement at runtime, texture/environment mapping, and shadow ray casts.

CUDA GPU Pathtracer **October 2025**

- Built a GPU-accelerated pathtracer using CUDA and C++ that supports various material shaders, antialiasing, and more.
- Integrated bounding volume hierarchy acceleration to optimize loading .OBJ files, creating a 9x speedup for large meshes.
- Added the ability to make fast and complex renders with texture mapping, and stream compaction for path termination.

WebGPU Gaussian Splatting **October 2025**

- Built a real-time Gaussian Splat renderer using the WebGPU API to create realistic and fast interactive 3D scenes.
- Transformed point cloud data into blended ellipsoids with calculated position, color, opacity, and size attributes.
- Set up pipelines for GPU parallelism, including a compute shader for covariance, frustum culling, depth sorting, etc.

Experience

Berkeley Institute of Design **September 2024 - May 2025**

Undergraduate Researcher

- Assisted in conducting and writing a research paper about the creation of Noise Pilot — a tool that implements diffusion-based image generation in a node-based image processing interface — and its impact and usability for artists.
- Connected Noise Pilot with a drawing interface API to allow users to draw masks and shapes for their image generation.
- Implemented an inverse kinematics algorithm from a research paper to explore movement in VR environments.

LearnQ.ai **June 2023 - August 2023**

Fullstack Software Engineer Intern

- Implemented a complete UI for new AI chatbot feature and menu page using React Typescript and Tailwind CSS.
- Generated several AI chatbot modes using LangChain and OpenAI, and trained them on varying knowledge bases.
- Designed a framework for the chatbot to handle connections between frontend and backend modules.

Honors/Awards

Grace Hopper Celebration Student Scholarship **June 2023**

- Scholarship for women and non-binary undergraduates to attend the Grace Hopper Celebration and participate in various networking and skill building workshops.