# Raymond Feng

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## EDUCATION

**University of Pennsylvania, School of Engineering and Applied Science**, Philadelphia, PA *Expected May 2026*
Candidate for Bachelor of Science in Engineering
*Major:* Digital Media Design GPA: 3.31/4.00
*Relevant Coursework*: Data Structures and Algorithms; Calculus II; Computational Linear Algebra; Interactive Computer Graphics; Human-Computer Interaction; Advanced Rendering; Scalable and Cloud Computing; Intro to Algorithms

## SKILLS

**Languages**: Java, OCaml, JavaScript, HTML/CSS, Python, C#, C++, GLSL, HLSL
**Tools**: Maya, Blender, Unreal Engine 5, Unity, Jupyter Notebook, AWS, DynamoDB
**Frameworks & Libraries**: React, Node.js, QT, OpenGL, Tailwind CSS, PyQT5

## EXPERIENCE

**GRASP Laboratory** | Robot Design GUI Research Assistant, Philadelphia, PA *December 2023 – Present*
· Create an open-source joint pose editor in Python using PyQTGraph for creating kinematic chains from tubular origami in a team of 2, based on the unpublished Kinegami paper written by D. A. Feshbach, W.-H. Chen, and C. R. Sung.
· Design an intuitive and user-friendly UI allowing for customization and rigid transformation of origami joints in 3D.
· Supervised by PhD student Daniel Feshbach and Dr. Cynthia Sung in the Sung Robotics Lab.

**Children's Hospital of Philadelphia** | Game Developer Intern, Philadelphia, PA *May 2023 – Present*
· Develop an inclusive and accessible educational game using Unity and C# specifically tailored for children with Down's syndrome, promoting understanding of assent in research studies.
· Collaborate with a multidisciplinary team of psychologists, special educators, and researchers to ensure the game's content and interface met the unique needs of patients and caretakers.

**Engineering Summer Academy at Penn** | Residential Teaching Assistant, Philadelphia, PA *July 2023*
· Execute engaging lessons in 3D modeling using Autodesk Maya, introducing 30+ high school students to fundamental concepts and techniques.
· Provide hands-on guidance and personalized assistance to students during individual and group projects.
· Implement and execute exciting group activities, icebreakers, and outdoor activities using budgeting and planning skills.

## PROJECTS

**Monte Carlo Pathtracer** *February 2024*
· Develop a Monte Carlo path tracer from scratch using C++ and OpenGL based on the Physically Based Rendering textbook.
· Utilize ray tracing algorithms to simulate lighting with options for naive integration, direct lighting, and multiple importance sampling, supporting a variety of different material BSDFs such as diffuse and specular reflection.
· Implement cosine-weighted hemisphere sampling and probability distribution functions for use in ray tracing algorithms.

**Mini-Minecraft** *December 2023*
· Create a Minecraft-based 3D voxel game engine in C++ and OpenGL in a team of 3.
· Design and implement procedurally-placed assets, perlin noise-based cave systems, and animated post-processing effects.
· Additionally responsible for creating sin function water waves, efficient terrain rendering using a Minecraft-like chunk system, and ambient occlusion.

## LEADERSHIP/EXTRACURRICULARS

**U. of Pennsylvania Game Research and Dev. Environment** | Vice President, Philadelphia, PA *September 2022 – Present*
· Lead an art team in collaboration with UI programmers to design assets for an upcoming time management game in Unity.
· Collaborate with a team of 30+ to design concept art, create assets, and write code for a collection of minigames.
· Competed in UPGRADE's game jam, making UI, character art, and background assets to create a functional game within a 24-hour period in a team of 4. Won the overall award for most fun game.

**Pencilbite Studio** | Background Artist, Philadelphia, PA *September 2023 – Present*
· Illustrate visually stunning concept art for an upcoming animated short, "Thesis Defense".
· Design a variety of background assets to fit the theme of an alien planet, consulting with the production team to deliver high-quality artwork within project timelines.