

Kevin Du

kevinwd2401@gmail.com | (848) 259-2864 | github.com/kevinwd2401

EDUCATION

University of Pennsylvania, School of Engineering and Applied Science, Philadelphia, PA

May 2027

B.S.E, DMD Computer Science and Computational Graphics Program

M.S.E, Computer Graphics and Game Technology

Cumulative GPA: 4.0

RELEVANT COURSEWORK

Data Structures and Algorithms, Machine Perception, Interactive Computer Graphics, Path Tracing and Physically Based Rendering, Procedural Computer Graphics & Design Systems, Computer Animation

EXPERIENCE

Penn Medicine, University of Pennsylvania Health System

May 2025 - August 2025

Virtual Reality Software Engineering Intern

Philadelphia, PA

- Developed a **Virtual Reality Surgical Airway Training Simulator** with Unity Engine, to be run on **Oculus Quest** headsets
- Contributed to system design, debugging, and iterative testing
- Collaborated with surgical residents to create accurate replications of surgical procedure steps and ensure user-friendliness

UPenn Game Research and Development Environment

Sep 2023 - Present

Game Design & Project Lead

Philadelphia, PA

- Managed a team of 20+ people as the lead of the main 2024-2025 project **published** on Steam and Itch.io, responsible for implementing AI behavior systems and HLSL visual effects shaders as lead programmer
- Oversaw multiple teams in the design and development of UpgradeKart semester project, a multiplayer racing game

PROJECTS

Monte Carlo Pathtracer

C++, OpenGL, QT Creator

- Developed a naive Monte Carlo path tracer supporting global illumination, naive integration, and MIS direct lighting
- Implemented various BSDFs for diffuse, transmissive, and specular microfacet surfaces

Mini Minecraft

C++, OpenGL, QT Creator

- Developed a **3D voxel game engine** as part of a team of three, added to course's Hall of Fame for technical creativity
- Implemented procedural asset generation/placement, procedural landscape textures, post-processing shaders, FBM water displacement shaders, and player movement/physics

3D Deferred Rendering Engine

C++, OpenGL

- Developed a real-time physically-based rendering engine with OpenGL to render photo-realistic images
- Utilizes PBR models, precomputed HDR image-based environment lighting, as well as post-process screen space reflection

Game Development Projects

C#, C++, HLSL, Blender, Unity, Unreal Engine 5, Godot

- Led the development of **Catanks**, the 2024-2025 UPGRADE top-down arcade tank shooter; worked on game design planning, enemy AI behavior and **pathfinding** systems programming, **VFX shaders**, game asset pipeline coordination
- Developed **Big Boat Battle**, a top-down combat game with **interactive volumetric fog** and **water ripple shaders**

SKILLS

Languages: C++, C#, GLSL, HLSL, Java, Python, JavaScript, TypeScript, Swift, HTML/CSS

Frameworks and Tools: Unity, Unreal Engine 5, Git, IntelliJ, QT Creator, OpenGL, Node.js, Jira, Maya, Houdini