Kevin Du

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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, Applied Machine Learning

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