

Tony Yiding Tian

Philadelphia, PA | (267)249-1202 | tonytg@seas.upenn.edu | github.com/tonytrt

EDUCATION

University of Pennsylvania - School of Engineering and Applied Sciences

Philadelphia, PA

B.S.E. in Computer Engineering, M.S.E. in Computer Graphics and Game Technology

May 2027

- GPA: 3.74 — Relevant Courses: GPU Programming, Advanced Rendering, Interactive Computer Graphics, Real-Time Rendering, Game Engine Programming, Data Structures & Algorithms, Operating Systems

EXPERIENCE

Product Development Researcher & UX Designer

Jan 2025 – May 2025

YesTech Corporation - Best Friends Network Social Platform

Remote

- Led user-centric product development for social media application with AR-inspired features targeting Gen-Z demographic with 10,000+ beta users, focusing on creative content tools
- Designed "Friendship Portal" interactive feature enabling real-time visual mood sharing between users, implementing UI/UX principles that drove 40% increase in user engagement
- Conducted A/B testing across 500+ users for visual effects and interaction patterns, iterating on design based on user feedback to optimize creative expression features
- Collaborated with mobile development team to implement intuitive creator tools, reducing content creation time by 35% through streamlined workflows

Beta Test Engineer & QA Analyst

Dec 2022 – Oct 2023

miHoYo - Genshin Impact (AAA Mobile Gaming)

Remote

- Selected as exclusive beta tester for Genshin Impact, a \$4B+ revenue game with 60M+ MAU featuring extensive visual effects and real-time rendering systems
- Tested 10+ character releases with unique particle effects, shaders, and animations, ensuring visual quality and performance optimization across iOS/Android platforms
- Evaluated open-world rendering performance including LOD systems, texture streaming, and post-processing effects, identifying optimization opportunities for mobile GPUs
- Provided detailed feedback on visual effects, animation systems, and UI/UX design that influenced character designs generating \$10M+ revenue

PROJECTS

Real-Time Physically Based Renderer | C++, GLSL, OpenGL

Jan 2025 – May 2025

- Engineered real-time PBR rendering pipeline achieving 60+ FPS with dynamic environment mapping, perfect for AR/VR applications requiring photorealistic materials
- Implemented advanced BRDF models supporting metallic/roughness workflows with texture mapping, enabling realistic material representation essential for immersive AR effects
- Developed custom post-processing effects including bloom, tone mapping, and depth-of-field using fragment shaders, similar to TikTok effect filters
- Built modular graphics API abstraction layer supporting OpenGL with extensibility for Vulkan/Metal backends
- Portfolio showcasing rendering capabilities: <https://github.com/tonytrt/TonyTianRenderDemo>

Mini Minecraft - Voxel Game Engine | C++, OpenGL, Qt, GLSL

Oct 2024 – Dec 2024

- Built complete 3D game engine from scratch featuring procedural world generation, real-time rendering pipeline, and physics simulation - core skills for effect creation tools
- Implemented post-processing visual effects system with custom GLSL shaders for underwater distortion, dynamic lighting, and particle effects similar to AR filter development
- Developed intuitive block manipulation system with ray-casting and immediate visual feedback, demonstrating strong UI/UX design sense for creative tools
- Optimized rendering performance through frustum culling and face culling, reducing draw calls by 80% while maintaining 60+ FPS with 1M+ rendered blocks
- Created procedural content generation using Perlin noise for 5 distinct biomes, showcasing algorithmic creativity applicable to effect generation
- Demo video: <https://youtu.be/jRb4EHV5KQI>

TECHNICAL SKILLS

Graphics/Rendering: OpenGL, WebGL, GLSL/HLSL shaders, Real-time rendering, Ray tracing, PBR

Game Dev/3D: Path Tracing, Deferred Rendering, Rasterization, Animation systems, Post-processing

Programming: C/C++ (advanced), Python, CUDA, Multi-threading, Memory management

Tools/Platforms: Git, Qt, Visual Studio, Cross-platform development (Windows, macOS, iOS, Android)