Tony Yiding Tian

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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

Monte Carlo Path Tracer & Real-Time PBR Renderer | *C++, GLSL* Jan 2025 – May 2025

- Implemented Monte Carlo path tracer supporting Cornell Box, glass refraction, microfacet materials, and environment mapping
- Developed physically-based rendering (PBR) shader pipeline with albedo/metallic/roughness maps achieving real-time ray tracing on modern GPUs with 60+ FPS real-time performance
- Engineered custom BRDF models for materials including chrome, plastic, and complex surface properties
- Demo: https://github.com/tonytgrt/TonyTianRenderDemo

Mini Minecraft - Voxel-based 3D Game | *C++, OpenGL, Qt, GLSL* Oct 2024 – Dec 2024

- Collaborated in team of 3 to develop fully-featured voxel game engine in C++ using OpenGL, generating infinite worlds with 1M+ blocks and maintaining 60+ FPS performance
- Engineered procedural terrain generation system using layered 2D/3D Perlin noise algorithms, creating 5 distinct biomes (Grassland, Mountain, Desert, Islands, Caves) with biome-specific block distributions and procedurally placed vegetation assets
- Implemented post-processing rendering pipeline with custom GLSL fragment shaders, featuring dynamic underwater/lava distortion effects using UV coordinate manipulation and real-time crosshair overlay rendering
- Developed dual physics simulation system: gravity-based collision detection with terrain for ground movement, and buoyancy calculations for water/lava interaction, plus creative fly-mode with 6-DOF movement
- Built efficient chunk-based world management system with frustum culling and LOD optimization, reducing draw calls by 80% through face culling of adjacent blocks
- Implemented real-time block manipulation (mining/placing) with ray-casting intersection testing and immediate mesh updates, supporting 16 different block types with unique textures and properties
- Project demo showcasing all features: 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)