

Ke Wang

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EDUCATION

Master of Science in Electrical Engineering, University of Southern California (USC) 3.8/4.0 09/2023-06/2025
Bachelor of Engineering in Space Information and Digital Technology, Xidian University 3.7/4.0 09/2018-07/2022

SKILLS

C/C++/Python/Linux/Assembly Language/Computer Network/ Unreal Engine/Game Design & Development/
Git/CMake/OpenGL/Computer Graphics/Parallel & Distributed Computation/CUDA/Multi-thread Programming

PROFESSIONAL EXPERIENCE



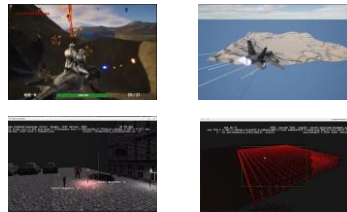
Game Client Development Intern, PUBG Mobile Team, Tencent LightSpeed Studio 05/2024-08/2024

- Conduct thorough research on Unreal Engine 5's Gameplay framework, network synchronization mechanisms, and UObject structure, while documenting the engine's initialization process.
- Created a third-person multiplayer shooter, implementing systems such as the weapon system, damage system, multiplayer mount system, and network latency compensation.
- Develop a physics-based fighter jet vehicle with core features including flight, destruction, and network synchronization.

Student Worker, Ray Tracer CUDA Implementation, WiDeS Lab, USC 02/2024-Present

- Implemented a C++ ray tracing algorithm using a 3D spatial model constructed from point clouds, including bounding box construction, visibility matrix creation, and calculations for various light reflections and diffractions.
- Recorded all reflected segments to compute signal parameters during light propagation, including energy attenuation, wavelength, and the feasibility of traveling from the emission point to the reception point.
- Applied the algorithm to CUDA for computational acceleration, leveraging parallel processing capabilities to enhance the efficiency of ray tracing and signal parameter calculations.

PROJECTS

Unreal Engine 5 Action-RPG		08/2023-01/2024
<ul style="list-style-type: none">• Implemented character behaviors, enabling weapon equipping, directional hit reactions, and combat strategies in C++.• Used the Chaos destruction system to design breakable objects, spawning treasure and loot upon destruction, and a HUD displaying gold counts and experience points are created.• Developed arrow and bow shooting system, multi-weapon mechanics, parkour system and AI enemies in C++.		
	GitHubRepo Demo	
Designing and Implementation of Parallel Rendering Engine		09/2023-12/2023
<ul style="list-style-type: none">• Implemented parallel computing algorithms for complex effects in OpenGL such as lighting, shadows and different materials, ensuring accurate rendering results in parallel processing.• Utilized CUDA as GPU acceleration and OpenMp as CPU multithread acceleration, while rewriting data structures to enhance performance by 954% compared to single thread version.		
	GitHubRepo	
More Projects&Demos Jet/Raider/Network/Physics/PrimeEngine Jet: Physical fight jet in UE5 Raider: UE5 TPS multiplayer game PrimeEngine: Unpublished game engine		
		Portfolio