

Zhen FANG

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Education

LaSalle College Vancouver

BC, Canada

Bachelor of Science in Game Programming; GPA: 3.8/4.0

07/2019-06/2022

Core Courses: Algorithms and Data Patterns, Concurrency & Parallel Programming, Geometry & Linear Algebra, Network Programming, 3D Graphics & Applications, Artificial Intelligence, Real Time GPU Programming, etc.

Award: Spring 2022 Outstanding Achievement Award

The University of Manchester (QS Ranking: 40th)

Manchester, UK

Master of Science in Advanced Engineering Materials; Pass with Merit

09/2016-11/2017

Core Courses: Surface Engineering and Materials Design, Advanced Composite Materials, Industrial Processing of Materials, Introduction to Materials Science, Functional and Engineering Ceramics

Dissertation: *Correlation between the density of fibre breaks in 3D and composite microstructure*

Northwestern Polytechnical University (NPU) (A Project 985 Institution)

Xi'an, China

Bachelor of Engineering in Composite Materials and Engineering; GPA: 3.1/4.1

09/2012-06/2016

Core Courses: Advanced Mathematics, Linear Algebra, Probability and Mathematical Statistics, Basis of Computer Engineering, Programming in C Language, Computational Materials Science, Mechanics of Materials, Principles and Technics of Composites

Capstone Project: *Controllable Synthesis of Flexible Graphene/Nanocellulose Composite Electrodes*

Award: 2013 China Aeromodelling Design Challenge Solar Aeromodelling - Champion

Research Interests

Aim to explore the integration of computer graphics and large-scale generative AI, with a particular focus on neural rendering, 3D/4D content generation, world modeling, and interactive virtual environments.

Project Experiences

STORM, Custom Game Engine, C++/Direct3D 11

10/2020-12/2021

- Developed core engine modules in C++ and Direct3D 11, contributing to the design and implementation of a custom real-time game engine.
- Built an asset pipeline to import and process 3D models, skeletal hierarchies, and animation data for runtime integration.
- Implemented a real-time rendering pipeline featuring dynamic lighting, shadow mapping, post-processing effects, and skeletal animation.
- Designed a component-based game object architecture with JSON-driven templates to support flexible object creation and scene management.
- Developed a particle physics and rendering system supporting collision constraints and sprite billboard effects for dynamic visual simulations.

Water Simulation, Unreal Niagara

01/2022-03/2022

- Developed a real-time water simulation system in Unreal Engine using Niagara, configuring emitters, simulation stages, and runtime parameters.
- Implemented Smoothed Particle Hydrodynamics (SPH)-based fluid simulation to model particle interactions and dynamic fluid behavior.
- Developed custom shaders to control particle attributes based on spatial density, enhancing the realism and visual fidelity of water rendering.

TYRANT, 2D Top-Down Tower Defense Shooter, PC, Unity/C#

04/2021-03/2022

- Collaborated with a six-member programming team throughout a 12-month development cycle to deliver a fully playable Unity-based tower defense shooter.
- Designed and implemented the core tower and trap combat systems, enabling modular gameplay mechanics and player interactions.
- Developed a data-driven architecture using ScriptableObjects to manage configurable attributes and behaviors for towers and traps.
- Created real-time visual effects with Unity Particle System and Shader Graph to enhance gameplay feedback and visual presentation.

FLAME HUNTER: ZHONG KUI, Action-Adventure Game, PC/Steam, Unity/URP

09/2024-Present

- Designed and implemented a character occlusion-handling system combining ray-based visibility detection, transparency fading, and outline rendering to dynamically maintain character readability in complex environments.
- Designed and standardized VFX rendering-layer conventions, defining consistent rules for Sorting Layer, Order in Layer, and Render Queue to manage rendering relationships among characters, visual effects, and environmental elements.
- Developed Unity Editor tools for batch particle Sorting Order processing and parameter transfer, reducing repetitive resource configuration and improving VFX authoring and iteration efficiency.
- Developed and optimized real-time gameplay and environmental effects using Particle System, VFX Graph, Shader Graph, and custom rendering techniques, balancing visual quality and real-time performance constraints.

Work Experiences

TAIKO Studios (Wuhan)

08/2024-Present

Technical Artist / VFX Lead

- Responsible for technical art and real-time VFX production for *Flame Hunter: Zhong Kui*, covering character abilities, gameplay interactions, and environmental effects in Unity URP.
- Established and maintained VFX production standards and technical workflows, coordinating asset standards, rendering-layer conventions, and effect integration across the project.
- Led VFX task planning, allocation, progress tracking, and technical review, collaborating with programmers, artists, and level designers to resolve production and rendering issues.

Qitmeer Network

04/2023-09/2023

Unity 3D Developer

- Rapidly mastered the TopDown Engine from the Unity Asset Store and leveraged it to accelerate game prototyping and development.
- Developed a 3D roguelike shooter in Unity, implementing core gameplay mechanics and integrating engine-based systems.
- Built and deployed playable versions for external playtesting, incorporating user feedback to refine gameplay and improve the overall player experience.

Yangtze Memory Technologies Co., Ltd.

01/2018-06/2019

Failure Analysis Engineer

- Designed and executed reliability testing and failure analysis workflows to investigate product performance and identify root causes of technical issues.
- Collaborated with cross-functional engineering teams to analyze test results, optimize validation processes, and improve product reliability.
- Trained team members in laboratory equipment operation and standardized testing procedures to support efficient experimental workflows.

Leadership and Campus Engagements

Co-founder, University of Manchester North Campus Union

12/2016-05/2017

- Co-founded the union with students from diverse backgrounds and managed publicity for its official WeChat account.
- Assisted in designing the society logo and organizing recruitment campaigns and social events such as Movie & Pizza Night.

Awards and Honors

- 2013 China Aeromodelling Design Challenge Solar Aeromodelling - Champion *10/2013*
- Outstanding Student of the School of Materials Science and Engineering, NPU *12/2014*

Skills & Languages

Programming: C++, C#

Graphics & Engines: Unity, Unreal Engine, HLSL, Shader Graph, VFX Graph, Niagara

Tools: Git, Maya, Photoshop, ComfyUI

Languages: Mandarin (Native), English (Fluent)