YingXuan (Jennifer) Liao   Software Engineer

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Available to work after **June 29th, 2023**.

SKILLS
Programming: C++, Lua, C#, python, Tensorflow, Java web development, Xml/Html/CSS/JavaScript
Game Engine: Unity, Unreal   **Graphics:**   DX12; DX11; OpenGL (GLSL); RenderDoc; Sketch/Figma

EDUCATION
Carnegie Mellon University (CMU)- Master of Entertainment Technology   *2021.08 – Expected 2023.05*
Entertainment Technology Center, Major in Entertainment Technology (Computer Graphics)
Wuhan University (WHU) - Bachelor of Engineering   *2015.09 - 2019.06*
School of Computer Science, Major in Software Engineering

EXPERIENCE
Lilith Games Company | Software Engineer | Lua, In-house game engine, Metaverse   *2020.03 - 2021.05*
- Worked on **io games, RPG, and chatroom** in a Metaverse game platform project using **Lua**.
- **Gameplay programming** like cameras, FSM, NPC behaviors, Object Pool in the **In-house game engine**.

Neusoft Ruidao Company | Software Engineer (Intern) | Java web dev, MySQL   *2018.07 - 2018.08*

PROJECTS
Real-time Path tracer | DirectX12(HLSL), C++ 17, DirectX Raytracing   *2022.11 – Expected 2023.04*
- A **Real-time GPU Path tracer** using DirectX12 and DXR, as an implementation of a Siggraph 2022 Paper: Generalized Resampled Importance Sampling for ReSTIR, including **multi-threading**.
- Develop abstractions over DirectX12 using modern C++ features.

Cloth and Fluid Simulation | Graphics Engineer | Compute shader (HLSL), Unity   *2022.09 – 2022.11*
- Using **PBD (Position based dynamics)** to implement 2D cloth and its interactions.
- **Fluid simulation** using **SPH** (based on PBD) to create **150k particles** at **30 FPS** on an RTX 3070.
- Using **GPGPU/compute shader** in Unity and **RenderDoc** to optimize the performance.

Ray tracer & Soft Rasterizer | Graphics Engineer | C++ 14, GLSL   *2022.02 - 2022.05*
- **See in https://www.yingxuanliao.com/computergraphics**
- Writing 3D **CG software toolsets** including path trace, IK, mesh edit, based on CMU 15-662 / Nori.
- Using **PCF, PCSS** to improve the **shadow map** and implement the **soft shadows** in GLSL.
- Using **PRT** (including **Spherical Harmonics**) to implement **real-time environment lighting**.

Telepathway, Google | General Engineer (Graphics) | CG, C#, Unity, XR   *2022.02 - 2022.05*
- An Academic Team Project with Google to make students interested in Machine Learning.
- Visualizing K-means clustering and Reinforcement machine learning.
- Write **procedural generating map** in Unity using Delaunay triangles and mesh editing.

Build Virtual World, CMU | General Engineer | Shader graph, C#, Unity, VR/AR   *2021.09 - 2021.12*
- Built each game with the other programmer, 2 artists, and a sound designer every 2 weeks. Including **Unity, XR technology (AR, VR)** and so on.
- Created **particle systems** like fire, fog effects and **shader graph** to make water and thunder.
- Implemented game logics like **Singleton Pattern, NPC behaviors, Object pools, GUI.**