# NOYA CAI

https://www.linkedin.com/in/noya-cai-124489292/

qimiaocai011110@gmail.com ◇ https://github.com/NoyaCai1110

+1-5853175388 ◇ 66 E Squire Dr, Rochester, NY, 14623, USA

## SKILLS

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|---|---|
| **Programming** | Proficient in C, C++, C#, GLSL, HLSL, Python, Swift, GPU programming |
| **Library** | OpenCV(Proficient), OpenGL(Proficient), DirectX, CUDA |
| **Software** | Visual Studio Code, Visual Studio, Unity, Unreal Engine, Vivado |
| **Language** | English(Proficient), Chinese(Proficient), Cantonese |

## WORK EXPERIENCE

**Augmented Reality Software Engineer**

Magic Spell Studio, Rochester Institute of Technology                    *02/2024-Present*

• Developing an AR windowed application prototype using Unity and C# for Apple Vision Pro to be used in medical fields.

• Using SwiftUI, ARKit, Compositor Services, and RealityKit to develop an AR immersive application for Apple Vision Pro to be used in medical research.

## PROJECTS

**Emotion Analysis and Reconstitution Application Based on AI Rendering**

Instructor: Rongde Lu. Laboratory of Visual Computing, USTC, Hefei, Anhui         *06/2021-05/2023*

• Built an HCI (Human-Computer Interaction) facial expression renderer based on machine learning and facial expression rendering

• Managed to train DL model with limited facial data and achieved correct recognition of up to six basic facial expressions

• Improved the accuracy of recognition via hyper-parameter searching

• Re-created the original video in animation form, based on the recognized facial expression via blend shapes, to achieve better-implied context reconstruction

**GPU-Based Global Illumination Renderer**

Instructor: Warren R. Carithers. Rochester Institute of Technology         *01/2024-05/2024*

• Implemented a path tracer using OpenGL that allows user defined primitive shapes including triangles and spheres.

• Implemented multiple tone-reproduction post effects in GLSL which can be selected for different image and screen brightness conditions.

• Based on this renderer, implemented an Ocean Simulator which includes Gerstner wave and Caustic in addition to realistic reflection and transmission.

## EDUCATION

**University of Science and Technology of China (USTC)**         *09/2019 - 06/2023*

Bachelor of Engineering in Computer Science and Technology

**Rochester Institute of Technology (RIT)**         *08/2023 - Present*

Master of Science in Game Design and Development

## AWARDS

• Rochester Institute of Technology Graduate Scholarship         *2023-2025*