

# NOYA CAI

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## SKILLS

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<b>Programming</b>	Proficient in C, C++, C#, GLSL, HLSL, Python, Swift, GPU programming
<b>CS Fundamentals</b>	Computer Architecture, Data Base, Data Structure and Algorithm, Networking
<b>Library</b>	OpenCV(Proficient), OpenGL(Proficient), DirectX, CUDA
<b>Software</b>	Visual Studio Code, Visual Studio, Xcode, Unity, Unreal Engine, Vivado
<b>Language</b>	English(Proficient), Chinese(Proficient), Cantonese

## WORK EXPERIENCE

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### 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

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### 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

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### 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

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- Rochester Institute of Technology Graduate Scholarship

2023-2025