Yi-Cheng Hsiao

yi-cheng0101@tamu.edu | https://github.com/Yi-Cheng0101 | yicheng.tw | linkedin.com/in/yi-cheng-hsiao | (979)344-3947

EDUCATION

Texas A&M University College Station, TX
Master of Science in Visualization *Aug. 2023 - May 2025 (Expected)*
Concentration: Programming, Computer Graphics, Virtual Reality, Gaming, Physical Based Simulation
Award: Texas A&M PVFA School-level Scholarship/Texas A&M Visualization Program-level Scholarship

National Tsing Hua University Hsinchu, Taiwan
Bachelor of Computer Science *Sept. 2017 - Jun. 2021*
Award: Presidential Hsing Chien Award (Recognition of outstanding achievements in extracurricular activities)

SKILLS

Programming: C/C++, C#, Python, OpenGL, DirectX, Vulkan, GLSL Shading Language, Shell scripting, MPI, Openmpi
Deployment Tool: Gitlab CI/CD, Unity, Unreal, Blender, Singularity, Docker, GPUView, Linux
Fields: Computer Graphics, Virtual Reality, Mixed Reality, Augmented Reality, Cloud Computing, High-Performance Computing, Animation Simulation, Physical-based simulation, Computer Graphics Programming, Physical-based Simulation

WORK EXPERIENCE

Texas A&M University Soft Lab Aug. 2023 – Current
Research Assistant *College Station, TX*

- Developed an **AR ART Curation**, which provides a platform for artists to share their work in an innovative way
- Artists can upload, such as pictures, videos, and 3D models on the cloud and place them for other users to view, retaining in real world through **Hololens 2** and **Augmented Reality**
- Using **Spatial Anchor** in **Unity C#** programming to store the whole space's data, which allows object can palace on the walls and desk accurately

VIVE Feb. 2023 – July 2023
Graphics Software Engineer *New Taipei, Taiwan*

- Developed **VBS** (Vive Business Streaming), a streaming software designed for the **OpenXR** framework. VBS enables wireless or VIVE cable streaming of PC VR content from the computer to the headset
- Enhanced user experience by implementing the **ATW**(Asynchronous Time Warp) algorithm using **C++** and **DirectX** within the OpenXR runtime. Improvements included reduced latency, minimized judder, and mitigated players' discomfort
- Supported OpenXR runtime from Direx11 to **DirectX12** content with C++ and tuned performance with the **GPUView** tool
- Enhanced VR controller user experience by implementing **Pose Extrapolation** using C++. This improvement allowed for smoother and more accurate tracking of VR controllers
- Developed a Mixed Reality (MR) modification for **Beat Saber** with **Python and Unity**, showcasing its Mixed Reality functionality using the VIVE XR Elite headset

PROJECTS

Commercial Animation Aug 2023 – Ongoing
Project Leader

- Rebuild a short commercial using **Unreal Engine 5** to animate and using **C++** to control the movement of the objects
- Using **Maya** and **Blender** to modeling the model, texturing, lighting and building the avatar

Physically Based Simulation Animation - Cloth Simulation, Particle System, Kinematic algorithm Jun 2022
Project Leader

- Used **C++** and **OpenGL** to implement physical based simulation and using **Explicit Euler, Implicit Euler, Runge Kutta Fourth**
- Implement the collision of **Particle System**, and **Cloth Simulation Forward Kinematics**, **Inverse Kinematics** algorithms

Attack on Lazy VR Sports Game May 2022
Project Leader

- Led 5 people team in developing a sportsVirtual Reality game, Attack on Lazy using **Oculus**, from UI design, game design, and programming by creating a fitness solution using **Unity** and **C#** programming
- Developed an innovative algorithm to detect player movements and accurately calculate calorie expenditure during gameplay

LEADERSHIP & COMPETITION

ASC 20-21 Student Supercomputer Challenge | Champion Shenzhen, China

- Trained the NLP model on 2 GPU nodes using Horovod, tuned the performance make the accuracy higher to 89%

2020 APAC HPC-AI Competition | Second Award Singapore