Chung-Ho (Kenneth) Wu

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Education

National Yang Ming Chiao Tung University Hsinchu, Taiwan

M.S. *in Multimedia Engineering. Advisor: Yu-Lun Liu.* *Sep 2023 – Present*

Courses: XR Camp, Deep Learning, Perception and Decision Making in Intelligent Systems, Image Processing, Video streaming and tracking, Computer Animation and Special Effects.

National Yang Ming Chiao Tung University Hsinchu, Taiwan

B.S. *in Computer Science.* *Sep 2019 – June 2023*

Publications

Fast Few-shot NeRF Under Review

Chung-Ho Wu, Chin-Yang Lin, Changhan Yeh, Alex Yen, Cheng Sun, Yu-Lun Liu *CV, ML, AI*

- Presented a paper on "Fast Few-shot NeRF," currently under review.
- Proposed a 3D scene reconstruction method from sparse input images, achieving state-of-the-art quality. Significantly outperformed existing approaches with a 10x improvement in training times, while eliminating the need for pre-trained priors such as monocular depth.

Experience

3D Modeling Intern May 2023 – Aug 2023

ITRI *Python, PyTorch, NerfStudio*

- Contributed to high-quality 3D reconstructions for online shopping products, incorporating cutting-edge techniques.
- Researched and implemented methodologies for fast training, real-time rendering of Neural Radiance Fields (NeRF), and transformation into dynamic meshes and textures with spherical harmonic parameters, enhancing rendering speed.
- Focused on literature review, utilizing Python, PyTorch, and NerfStudio API.

Projects

PDM Project: Perception and Decision Making in Intelligent Systems Sep 2023 - Present

- Leading a project focusing on SLAM, 3D semantic reconstruction, indoor robot navigation, and robot manipulations framework.
- Key areas of expertise include Robotics, Computer Vision, Python, PyTorch, OpenCV, and Open3D.

FS-NeRF: Fast Sparse Input Neural Radiance Field w/ Visibility Priors July 2023 - Aug 2023

- Led the development of FS-NeRF, a model excelling in synthesizing novel views with limited data and effectively addressed overfitting in few-shot scenarios by leveraging pre-calculated visibility priors.
- Incorporated monocular depth into the model, enhancing hallucination abilities for generating views, even in regions not observed in any training views.
- Achieved accelerated training times while maintaining comparability to state-of-the-art methods by substituting Voxel for MLP in NeRF.

Under the lake: VR Horror Immersive Experience (XR-Showcase Silver Award) Apr 2023 - June 2023

- Led the design and implementation of "Under the Lake," a VR Horror Immersive Experience.
- Focused on utilizing SteamVR API, Unity, and C# scripting for scene mechanisms.

1A2B Game Oct 2022 - Dec 2022

- Designed a 1A2B Game server and client using C++ TCP/UDP sockets capable of handling multiple connections and receiving user commands from standard input.

Expiration Reminder Service Oct 2022 - Dec 2022

- Provide an expiration reminder service, which could remind the user of the expiration and detect the usage rate, by connecting an IoT box with an iOS app using ThingSpeak.
- Construct the IoT box by Arduino and 3D printing, and detect the item in the box using ML skills to update the corresponding data on ThingSpeak timely.

CS Union Loyalty Card Dec 2020 - Feb 2021

- A reward system using Line Bot API, Heroku, Flask to boost the activities participation.

Programming Skills

Programming Languages: C/C++, C#, Python, SQL, Swift, HTML, JS.

Tools: Git, Docker, Linux, Shell Script, Pytorch, TensorFlow, OpenCV, OpenGL, Open3D, Unity, Latex, Flask, Heroku.