Chung-Ho (Kenneth) Wu

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Education

National Yang Ming Chiao Tung University Hsinchu, Taiwan
Master of Science in Multimedia Engineering. Advisors: Prof. Yu-Lun-Liu. *Sep 2023 – Preent*
***Course**: XR Camp, Deep Learning (Lab), 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
Bachelor of Science in Computer Science *Sep 2019 – June 2023*

Publications

Fast Convergence for Few-shot Novel View Synthesis w/o Learned Priors CVPR 2024
Chung-Ho Wu, Chin-Yang Lin, Changhan Yeh, Alex Yen, Cheng Sun, Yu-Lun Liu *under review*

- 3D scene reconstruction from sparse input images. Achieved state-of-the-art quality, while also demonstrated faster training times and did not require any pre-trained priors such as monocular depth.

Experiences

3D Modeling Intern Python, Pytorch, nerfstudio
ITRI *Sep 2023 – Preent*

- Perform high-quality 3D reconstruction of products for online shopping with nerfstudio API.
- Conducted research on state-of-the-art techniques for fast training and real-time rendering of Neural Radiance Fields (NeRF). Transformed NeRF-based reconstructions into meshes and textures for real-time rendering, incorporating spherical harmonic parameters.

Projects

PDM-F23 Project: Perception and Decision Making in Intelligent Systems Project Aug 2023 - Present

- This is the semester project for NYCU PDM-F23, comprising four assignments: reconstructing an indoor scene from a sequence of images, creating a 3D semantic map, developing an indoor robot navigation system, and establishing a robot manipulations framework.
- And a final projectfinal project tackles the Habitat Rearrangement Challenge 2022 organized by NeurIPS. It emphasizes applying knowledge from the preceding four assignments, particularly in mobile manipulation, low-level control, and task planning.

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

- Led the development of FS-NeRF, a model excelling in synthesizing novel views with limited data and effectively addressing 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) June 2023

- Modeling real campus scenes as point clouds, incorporating long-standing ghost stories on campus, and utilizing VR devices to create an immersive experience.
- Using the SteamVR API, enable players to navigate within the VR space using HTC Vive Pro controllers. Additionally, develop a C# script for Unity to initiate scene mechanisms.

Expiration Reminder Service 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 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.
- Build the iOS app using SwiftUI and CoreData, and update the data in the app by querying the data on ThingSpeak.

Programming Skills

Programming Languages: C/C++, C#, Python, SQL

Tools: Git, Docker, Linux, Shell Script, Pytorch, TensorFlow, OpenCV, OpenGL, Unity