

# 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

CVPR 2024

*Chung-Ho Wu, Chin-Yang Lin, Changan Yeh, Alex Yen, Cheng Sun, Yu-Lun Liu*

*under submission*

- 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 – Present*

- 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 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 project final 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

July 2023 - 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)

April 2023 - 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

Oct 2023 - 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