

# Shr-Ruei Tsai

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## EDUCATION

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### National Yang Ming Chiao Tung University (NYCU)

B.S. in Computer Science

GPA : 4.07/4.3

Major GPA : 4.17/4.3

Relevant Courses : Introduction to Database Systems, Introduction to AI, Introduction to ML, Introduction to Network Programming, Computer System Administration, Computer Vision, Operating System Capstone

Hsinchu, Taiwan

Jul. 2021 - Present

## RESEARCH EXPERIENCES & INTERNSHIPS

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### Undergraduate Research Assistant in Comp Photo Lab

Advisor : Prof. Yu-Lun Liu

Research Topics : Neural Radiance Fields, Flare Removal

Jul. 2023 - Present

### Undergraduate Research Assistant

#### in Frontier Materials & Engineering Alloys Laboratory (FMEAL)

Advisor : Prof. E-Wen Huang

Research Topics : Machine Learning in Shape Memory Alloys

Oct. 2023 - Aug. 2024

### Internship in B.D. Mobile

Deep learning algorithm on ECG data.

Jul. 2024 - Present

## PUBLICATION

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### BoostMVSNeRFs:

#### Boosting MVS-based NeRFs to Generalizable View Synthesis in Large-scale Scenes

Chih-Hai Su, Chih-Yao Hu, [Shr-Ruei Tsai](#), Jie-Ying Lee, Chin-Yang Lin, Yu-Lun Liu

*This work has been accepted at SIGGRAPH 2024.*

BoostMVSNeRFs aims to enhance the rendering quality of MVS-based NeRFs in large-scale scenes, and our method shows significant rendering quality improvements in large-scale scenes and unbounded outdoor scenarios.

## PROJECTS

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### Bare metal OS (ARM Assembly, C, Python)

This is the project for the Operating System Capstone, Spring 2024. The labs focus on designing and implementing operating system kernels on the Raspberry Pi 3, incorporating essential features such as virtual memory, virtual filesystem, context switching, timer interrupts, and process forking. [Link](#)

Jun. 2024

### Cross-Ray Neural Radiance Fields in the Wild via Monocular Depth Guidance

(Python, Pytorch)

Final project for Computer Vision: We integrated two prior works, CR-NeRF and ZoeDepth, to enhance the performance of NeRF handling unconstrained images. [Link](#)

Jun. 2024

### Fine-Grained Image Classifier (Python, Pytorch)

This is my machine learning final project which aims to classify images into subcategories in a class. I achieved a rank of 22 out of 111 participants in the Kaggle competition. [Link](#)

Jan. 2024

### Personal Website (Vue.js, JavaScript, HTML)

I am using Vue.js for a side project to create my personal website. [Link](#)

Aug. 2023

### NYCU++ (Python, Django, PostgreSQL, AWS)

A basic website designed for students to upload and search for course recommendations. [Link](#)

Jan. 2023

## EXTRACURRICULAR ACTIVITY

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### Manager of Equipment Section in NYCU Computer Science Student Association

Lead a team responsible for managing and maintaining equipment essential for association events and activities.

Jun. 2023 - Jun. 2024