Yu-Cheng Hsieh

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Technical Skills

Languages: Python, C/C++, HTML/CSS, JavaScript, Matlab
Technologies/Frameworks: Linux, Git, GitHub, Pytorch, LaTeX

Education

National Tsing Hua University **Sep. 2018 – June 2022**
Bachelor of Engineering and System Science *Hsinchu, Taiwan*

- **Overall GPA :** 3.89/4.30, ranked 10/90
- **Undergraduate Research :** Utilizing bio-convolution and first order difference on identification and verification of electrocardiogram.

National Tsing Hua University **Sep. 2022 – June 2024 (Expected)**
Master of Electrical Engineering *Hsinchu, Taiwan*

- **Overall GPA :** 4.21/4.30
- **Vision science lab(VSlab)**
- **Current research:** 360 Indoor scene understanding.

Publication

PanoMixSwap Panorama Mixing via Structural Swapping for Indoor Scene Understanding **BMVC 2023**
[Paper] [Code] [Website]
Yu-Cheng Hsieh, *Cheng Sun, Suraj Dengale, Min Sun*

- Introduce a novel panoramic data augmentation method that improves performance on panoramic downstream tasks

Experience

MediaTek Research **Dec 2023 – April 2023 (Expected)**
Deep Learning & Software Intern *Taipei Taiwan*

- Working with colleagues from MediaTek Research Cambridge.
- (Expected) Developing and Testing tools using software fuzzing techniques to help hardware ASIC design verification.

Awards

Academic Achievement Award **Spring 2020, Fall 2020**

- The award for achieving a 5% ranking in the semester.

National Science and Technology Council Scholarship **Fall 2023**

Teaching

Teaching Assistant, Computer Vision (EE6485) **Fall 2023**
Dept. of Electrical Engineering, National Tsing Hua University

Projects

Introduction to Programming: Room Escape+Shooting Game | *C/C++* [Code] [Website] | **Spring 2021**

- Design a game where the character is shot into a house by enemies. Control the character to collect jet pieces (similar to room escape games) to assemble a jet, then use the jet to engage in combat with the enemies (like a shooting game).

Image Processing: Photoshop-like Application | *Python/Matlab* **Fall 2021**

- Leverage Seam Carving algorithm to beautify selfies, make faces and legs much slimmer, and remove a mole.

Artificial Intelligence: Course Selector | *Python* [Code] | **Fall 2021**

- Apply the Genetic Algorithm to train a course selector that helps students to choose courses optimally.

Music Information Retrieval: Audio Mosaicing | *Python* **Spring 2022**

- Employ audio mosaicing to blend casually hummed vocals with popular songs, creating the illusion of singing those popular tunes.

Robotic Navigation and Exploration: Control JetBot | *Python* **Spring 2022**

- Train a ResNet-based model that enables the JetBot to navigate designated tracks while evading obstacles.

Computer Vision: Real-time Fighting Game | *Python* [Code] | **Fall 2022**

- Develop a two-player fighting game using real-time human pose estimation for avatar control through poses.
- Utilize GAN-based face morphing for avatars to shift between different looks smoothly.