Yu-Cheng Hsieh

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Technical Skills

Programming Languages: Python, C/C++, HTML/CSS, JavaScript, MySQL, Kotlin, Matlab, Shell Script
Technologies/Frameworks: Linux, Git, Pytorch, VScode, Android Studio, GitHub, Hugging Face, LaTeX

Education

National Tsing Hua University **Sep. 2022 – August 2025 (Expected)**
Master of Electrical Engineering (GPA: 4.21/4.3) *Hsinchu, Taiwan*

- Vision science lab(VSlab), advised by Prof. **Min Sun**
- Exchange student for 2024 winter at **University of Padova**

National Tsing Hua University **Sep. 2018 – June 2022**
Bachelor of Engineering and System Science (GPA: 3.89/4.3, ranked 10/90) *Hsinchu, Taiwan*

Publications

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

- Develop a novel 360° indoor panorama augmentation technique that structurally mixes layout, style, and furniture from multiple sources to boost data diversity.
- Our augmentation demonstrated significant performance boosts on several indoor panoramic downstream tasks.

Work Experience

MediaTek Research **Dec 2023 – April 2024**
Deep Learning & Software Intern *Taipei Taiwan*

- Designed end-to-end NLP pipelines using LLM for structured extraction from LaTeX PDFs and token-level filtering of noisy web text.
- Implemented an LLM-integrated Android automation system in Kotlin, enabling natural language queries to control smartphone via the Android Accessibility Service for hands-free task execution. such as email access and web search.

Roku **May 2024 – August 2024**
Machine Learning Intern *Hsinchu Taiwan*

- Generate new scene classes to Roku's dataset, then train and fine-tune MobileNetV3 on scene classification tasks.
- Deploy the model on MediaTek NPU within Roku TV to classify screen content in real-time and apply different picture quality settings (contrast, clarity, color) based on the detected scene.

Projects

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.

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

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

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.

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).

Honors & Awards

Academic Excellence Award: Top 5 % ranking in department (one semester) **Spring 2020, Fall 2020**
International Academic Conference Scholarship: National Science and Technology Council (NSTC) **Fall 2023**
Oversea Study Scholarship: National Tsing Hua University (NTHU) **Fall 2024**

Teaching

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