Meng-Lun Yu

Computer Science Graduate Student

- Has experience in **Python**, **C++**, **Fullstack development** and **AI-related research**.
- During my master's program, I work as a **Software Engineering intern at Synopsys**,
- My graduate thesis focused on **Image matting**.
- The master's thesis is currently accepted as a conference paper by **IEEE ICME2025**

Contact

Email

allen.yu1216@gmail.com

Linkedin

menglun's Linkedin

GitHub

menglun's Github

Education

2022-2024

Master

National Yang Ming Chiao Tung University,
Institute of Computer Science and Engineering

2018-2022

Bachelor

National Ilan University,
Department of Computer science and information engineering

Expertise

- Python
- Pytorch framework
- C++
- Computer vision
- Machine Learning
- Javascripts
- WebAssembly

Work Experience

July 2023 - Aug 2023

Synopsys I Zhubei, Taiwan

Software Engineer Intern @ TCAD team

C++, Javascripts, Git, emscripten, WebAssembly

- **Objective:** Use Emscripten, a WebAssembly tool, to transform a CPP library into WebAssembly and use Javascript to import it to frontend web .
- **Contribution:** Assisted the team in exploring and implementing the process of converting an internal C++ library to WebAssembly .

Feb 2023 - Oct 2023

National Yang Ming Chiao Tung University I Hsinchu, Taiwan

Research Assistant,
Automated Abandoned Object Monitoring System

Python, Pytorch, PyQt, Background Subtraction algorithm

- **Objective:** Use Background Subtraction , Re-Identification and Object detection to developing a system for automated detection of lost items.
- **Contribution:**
  - Reid Model Training & Application: Trained and applied reid models to recognize and track items within the system.
  - PyQt Integration: Employed PyQt to connect backend functionalities with the frontend, creating an intuitive and functional user interface.

Master thesis

Sep 2022 - Sep 2024

National Yang Ming Chiao Tung University I Hsinchu, Taiwan

Automatic Natural Image Matting via
Dual Encoder Aggregation

- Accepted as conference paper by **IEEE ICME 2025**
- A completely **new method** of **Image Matting** that does not require any auxiliary input.
- Base on the end-to-end network of **Hybrid Encoder**, combines the advantages of **CNN and Transformer** as the backbone.
- Two **additional fusion module** is designed to fuse the two different model features.
- Experimental results show that it produces **excellent alpha masks** on four mainstream datasets.

Projects & Competition

Sep 2019- Jun 2020

College project, AIoT system for goose management

Python, Resfulapi, Javascript, Pytorch, Flask, MongoDB

- A real-time warning system using object detection and analysis technology for breeding goose management.
- Responsible for Object detection, front-end development in this project.

Jan 2020 - Jan 2020

Competition, 2018 NASA SPACE APPS challenge Taipei

C#, Python

- Build an educational puzzle game by using C#.
- Combining Hubble telescope photos provided by NASA.
- This project was selected as a semifinalist.

Dec 2020 - Jul 2021

College Projects, Industry-Academy Cooperation

Python, Javascript, Flask

- Build the website that can monitor the solar system.
- Responsible for frontend development, backend socket application in the project.

Mar 2023- Apr 2023

Side-Project, Face Recognition System

Python, Pytorch, C++, Pybind11

- Developing a Face Recognition System Using C++, Python and Pybind11
- Combines the strengths of C++ and Python and use deep learning to achieve high accuracy and efficiency.

Sep 2022- Jan 2023

Side-Project, Data analysis & Web design

D3.js, Python, Javascript

- Use d3.js to draw some plot for analysising the relationship between coding skill and salary.
- Use bootstrap framwork to build a web to show the data analysis plot.