MING-CHIEH, HU

— **mingchiehhu@gmail.com** — **https://MCHU-1999.github.io** —

Education

Delft University of Technology (TU Delft) — Delft, Netherlands
MSc Geomatics — Sep. 2024 — present
MSc Thesis: *Gaussian Splatting to Piecewise-Planar Surfaces for 3D Building Reconstruction*

National Yang Ming Chiao Tung University (NYCU) — Hsinchu, Taiwan
B.S. in Electronics Engineering — Sep. 2017 — Jun. 2021
Innovative Technology and Art Program — Sep. 2019 — Jun. 2021

Academic Projects

Solar Decathlon Europe 21/22 — Wuppertal, Germany
Student Electrical Engineer, team TDIS — Sep. 2020 – Jul. 2022

- Designed and implemented the power plan for the two story house demonstration unit, integrating photovoltaic panels, inverters, batteries, and home appliances. Using parametric modeling techniques such as Grasshopper 3D.
- Led the transportation research of Taipei and innovative design for urban mobility. Engaged in in-depth discussions with the juries, articulating our design and strategies.
- Awarded 1^{st} Prize for architecture, 3^{rd} Prize for innovation among 18 international teams.

Learning-based Voice Conversion — Hsinchu, Taiwan
Member of the Artificial Intelligence and Multimedia Laboratory — Sep. 2019 – Jun. 2020

- Enhanced the voice conversion results of a Variational Auto Encoder by integrating MOSNet and subsequently yielded a new loss metric, resulting in a significant improvement in the ratings of the converted voice.
- Modified a neural network using the MFCC algorithm to incorporate a WORLD vocoder, making it able to perform back propagation.

Work Experience

Readar — Utrecht, Netherlands
Intern Developer — Jul. 2025 – Oct. 2025

- Proposed a hybrid method to solve a zonal statistics problem that is 4.5 - 7× faster than baseline for a post-processing bottleneck, with reasonable memory consumption.
- Investigated raster I/O bottlenecks in a dataloader for deep learning models. Conducted a systematic evaluation of modern raster file formats (e.g., GeoTIFF, COG, Zarr) to benchmark their performance for random-access tasks in cloud environment.
- Developed a GUI and CLI tool for data creation, inspection, and quality control (specifically, footprint calculation and misalignment detection). This tool utilizes optimal file formats and parallel processing methods to replace the existing, obsolete script.

TORIII Technology — Taipei, Taiwan
Project Manager / Full Stack Developer / UI Designer — Sep. 2022 – Nov. 2023

- Planned, designed, and developed a customer relationship management system that served thousands of users on LINE, Taiwan's most widely used social platform. Including features such as monthly charges, copy-trade automation, and a dashboard, using Figma, Node.js, React, MongoDB and GCP.
- Collaborated with Aiii, an AI marketing company, to develop an NFT membership management system and a centralized wallet that operates on both the Ethereum and Polygon chains within the LINE framework.
- Developed a data visualization-based trading strategy optimization method with an concise user interface, which helps company's trading strategies make consistent profits month after month.
- Conducted an in-depth investigation into the performance of various deep learning models applied to cryptocurrency trading using PyTorch. Such as transformers, LSTM, and ResNet, and analyzed their effectiveness in optimizing trading strategies.
- Planned and coordinated a customized development of a ticketing platform, working with designers, front-end and back-end engineers in a project manager role.

Skills

- **Relevant Coursework:** Algorithms, Data Structures, OOP, Machine Learning, Calculus I-II, Probability and Statistics, Linear Algebra, Sensing Technologies, GIS and Cartography, Geo Database Management Systems, Digital Terrain Modelling, Photogrammetry and 3D Computer Vision, Wind Modelling
- **Programming:** C, C++, JavaScript, Python, HTML, CSS, SQL
- **Libraries:** PyTorch, Express, React, CGAL, GDAL, Rasterio
- **Software:** QGIS, GRASS GIS, FME, Rhinoceros 3D, Grasshopper 3D, Git, GCP, MongoDB, PostgreSQL
- **TOEFL:** 102/120 (R: 29, L: 28, S: 22, W: 23)