Po-Hao Huang

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Education

University of Illinois Urbana-Champaign — Champaign, IL
Master of Computer Science (MCS) — *Aug 2024 – Dec 2025 (Expected)*

National Taiwan University — Taipei, Taiwan
Bachelor of Science in Computer Science and Information Engineering (CSIE) — *Sep 2017 – Jun 2021*

- **Honors**: Dean's List Award - 1st semester of 2020-2021 at EECS CSIE
- **Last Two Year GPA**: 4.02 / 4.3

Experience

Academia Sinica — Taipei, Taiwan
Research Assistant — *Apr 2024 – Jun 2024*

- Initiated research on 3D Gaussian splatting(3DGS) for deepfake generation and detection
- Proposed a novel representation to effectively distinguish whether a set of images was generated by 3DGS
- **Relevant Skills**: 3D Gaussian Splatting, 3D Avatar, Computer Graphics

Quantrend Technology — Taipei, Taiwan
Machine Learning Engineer — *Jun 2021 – Aug 2023*

- **Enhanced the online trading model's returns by 5%** by proposing a novel data sampling and labeling method, resulting in outputs more closely approximating real market performance
- Increased the R-squared score of certain features by **10x** by introducing a novel feature engineering method
- Designed **over 70%** of the company's Machine Learning metrics and **20%** of the features used in our models
- Independently designed the company's proprietary Rust implementation of TensorFlow Models
- **Relevant Skills**: Rust, Python, OOP, Machine Learning, Linear Algebra, Probability, Stochastic Processes

OmniEyes — Taipei, Taiwan
Research Assistant — *Sep 2020 – Jun 2021*

- Enhance the computer vision-based mapping system by detecting newly emerged signboards using Metric Learning
- Surveyed and experimented with Metric Learning techniques (Siamese, Triplet) for fine-tuning purposes
- Designed a data augmentation mechanism to synthesize new signboards data and improve model scores
- **Relevant Skills**: Python, PyTorch, Machine Learning, Contrastive Learning, Object Detection

CancerFree Biotech — Taipei, Taiwan
Intern — *Jul 2020 – Aug 2020*

- Developed a stained cell counting program using thresholding to replace existing paid software
- Designed a report generation pipeline with Python adhering to the open-closed principle
- **Relevant Skills**: Python, NumPy, Computer Vision, Thresholding

Projects

3D Reconstruction for Enhanced Intraoral Scanning — Feb 2024 – Present

- Exploring state-of-the-art 3D reconstruction techniques through ongoing research with Ma et al. from the University of Pennsylvania, aimed at enhancing intraoral scanning
- **Relevant Skills**: 3D Gaussian Splatting, NeRF, Structure from Motion, Computer Graphics

Periodontitis-Associated Cardiovascular Diseases Classification — Sep 2020 – Jan 2021

- Identify periodontitis and atherosclerotic cardiovascular disease (ASCVD) by analyzing panoramic radiographs
- **Publication:**
  Ma, K.S., Liou, Y.J., Huang, P.H., Lin, P.S., Chen, Y.W., Chang, R.F. (2021).
  "Identifying Medically-compromised Patients with Periodontitis-Associated Cardiovascular Diseases Using Convolutional Neural Network-facilitated Multilabel Classification of Panoramic Radiographs."
  Proceedings of the International Conference on Applied Artificial Intelligence, pp. 1-4.
- **Relevant Skills**: PyTorch, CNN, U-Net

Skills

Languages: C/C++, CUDA(C++), Python, Java, Rust, HTML/CSS, JS, php, SQL
DS/ML: Time Series, Contrastive Learning, 3D Reconstruction, PyTorch, TensorFlow, NumPy, Pandas, Matplotlib