Po-Hao Huang

447-301-5040 | k94155@gmail.com | linkedin.com/in/po-hao-sebastian-huang | github.com/zetacat

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*

Experience

Esri — Redlands, CA
Software Development Intern — *May 2025 – Aug 2025*

- Designed a unified geometry I/O architecture with a zero-copy parsing/building framework in Rust; laid groundwork for bidirectional builders/readers
- Optimize import time by **66%** by restored lazy imports; vectorized geometry operations for **250**× faster large Pandas DataFrame handling
- **Relevant Skills**: Python, Rust, PyO3, Python profiling and visualization, Pandas, NumPy, Design Patterns, OOP

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
- Designed a data augmentation mechanism to synthesize new signboards data and improve model scores
- **Relevant Skills**: Python, PyTorch, Machine Learning, Contrastive Learning, Metric Learning, Object Detection

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