Yueh-Po Peng

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Experience

AI Engineer **Oct 2024 – Present**
Gate.io **Taipei, Taiwan (Remote)**

- Developed an anomaly detection system for fund flows, leveraging LLMs and tree-based models for enhanced financial security.
- Built a Text-to-SQL system to streamline internal data queries, improving query efficiency by 20%.

Research Assistant **Mar 2022 – Oct 2024**
Institute of Information Science, Academia Sinica | MCTLAB | Supervisor: Dr. Li Su **Taipei, Taiwan**
Research Topics: Self-Supervised Learning, Medical Imaging

- Proposed a Transformer-based end-to-end self-supervised learning method for decoding brain signals (fMRI), achieving an 77% reduction in memory footprint.
- Conducted distributed training experiments on high-resolution 4D medical images (fMRI) using TWCC HPC.
- Proposed a whole-brain feature selection method for decoding musical pitch from fMRI [2].

AI Engineer Intern **Mar 2023 – Jul 2024**
Tomofun - World's leading pet technology company **Taipei, Taiwan**
Research Topics: Computer Vision, Large Language Models, Multimodal Learning

- Developed an automatic short music video generation system for daily pet clips.
- Fine-tuned visual language models (e.g., BLIP), achieving a 20.6% improvement in visual question answering.
- Enhanced LLaVA image inference speed by 250% with only a 3% accuracy reduction.
- Developed APIs for visual language models using llama.cpp/ollama for image-caption pair datasets.

Education

National Taiwan University **Feb 2023 – Jun 2024**
- M.S. in Data Science **Taipei, Taiwan**
- Thesis topic: Whole-Brain Feature Selection Methods for Decoding from fMRI Data

National Taiwan University **Sep 2019 – Jan 2022**
- B.S. in Computer Science and Information Engineering (CSIE) **Taipei, Taiwan**

Research & Projects

Guitar Effect Removal **Collaboration with Positive Grid ML Team**

- Proposed a two-stage method to remove distortion effects from guitar recordings using Positive Grid VST plugins.
- Achieved 20% higher audio quality than the best baseline, rated by 26 professional guitarists.
- Published in DAFx 2024 [1].

Whole Brain fMRI Feature Selection

- Proposed a two-stage method to extract fMRI features and predict musical pitch.
- Demonstrated 2-fold improvement over ROI-based feature selection in fMRI-music analysis.
- Published in ICASSP 2023 [2].

Publications

[1] Lee, Y. S.*, **Peng, Y. P.***, Wu, J. T., Cheng, M., Su, L., & Yang, Y. H. "Distortion Recovery: A Two-Stage Method for Guitar Effect Removal," Proc. Int. Conf. Digital Audio Effects 2024 (DAFx'24). **(* equally contributed)** Paper | Demo

[2] Cheung, V. K.*, **Peng, Y. P.***, Lin, J. H., & Su, L. "Decoding Musical Pitch from Human Brain Activity with Automatic Voxel-Wise Whole-Brain FMRI Feature Selection," Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing 2023 (ICASSP'23). **(* equally contributed)** Paper

Skills

- **Languages/Frameworks**: Python, PyTorch, TensorFlow, Pandas, Scikit-learn, Slurm, Go, HTML, JavaScript, C++, C, Linux.

- **Skillset**: Machine Learning, Self-Supervised Learning, Medical Imaging, omputer Vision, Music Information Research, Distributed Training.