Yueh-Po **Peng**

yuehpo.peng@gmail.com | y10ab1 | yueh-po-peng | Yueh-Po Peng

Experience

Institute of Information Science, Academia Sinica — *Taipei, Taiwan*

Research Assistant — *Jul. 2024 - Present*

- Surveyed end-to-end self-supervised learning methods for decoding mental states from brain activity (fMRI).
- Conducted distributed training experiments on large-scale, high-resolution 4D fMRI data using TWCC HPC.

Tomofun — *Taipei, Taiwan*

Research & Development - AI Intern — *Mar. 2023 - Jul. 2024*

- Developed an automatic short music video generation system for daily pet clips.
- Surveyed various strategies of visual language models (LLaVA) to generate image-caption pairs as training data for knowledge distillation.

Institute of Information Science, Academia Sinica — *Taipei, Taiwan*

Research Assistant — *Mar. 2022 - Feb. 2023*

- Proposed a whole-brain feature selection method for decoding musical pitch from brain activity (fMRI) [2].

Education

National Taiwan University — *Taipei, Taiwan*

M.S. in Data Science — *Feb. 2023 - Jun. 2024*

National Taiwan University — *Taipei, Taiwan*

B.S. in Computer Science and Information Engineering (CSIE) — *Sep. 2019 - Jan. 2022*

Research & Project

Guitar Effect Removal — *Pytorch, Lightning*

Machine Learning Research on Removing Distortion Effect from Electric Guitar

- Proposed a two-stage method to remove distortion effects from guitar recordings using Positive Grid VST plugins.
- Analyzed baseline models on synthetic and VST-rendered effects, demonstrating superior performance.
- Published in DAFx 2024 [1]. (**paper**, **demo**)

Whole Brain fMRI Features Selection — *Pytorch, Scikit-learn*

Machine Learning Research to Find Correlation Between FMRI and Musical Pitch

- Proposed a two-stage method to extract fMRI features and predict musical pitch.
- Evaluated ML models' performance and analyzed correlation between pitch and fMRI patterns.
- Published in ICASSP 2023 [2]. (**paper**)

Publications

[1] Ying-Shuo Lee*, **Yueh-Po Peng***, Jui-Te Wu, Ming Cheng, Li Su and Yi-Hsuan Yang, "Distortion recovery: A two-stage method for guitar effect removal," in Proc. Int. Conf. Digital Audio Effects (DAFx), 2024. (* equally contributed)

[2] Cheung, V. K.*, **Peng, Y. P.***, Lin, J. H., & Su, L. (2023, June). "Decoding Musical Pitch from Human Brain Activity with Automatic Voxel-Wise Whole-Brain FMRI Feature Selection," in ICASSP 2023-2023 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) (pp. 1-5). IEEE. (* equally contributed)

Skills

Languages/Frameworks Python, Pytorch, Tensorflow, Pandas, Sklearn, Slurm, Flask, HTML, Javascript, C++, C, Linux

Skillset Machine Learning, Self-Supervised Learning, Neuroscience, Music Information Research, Distributed Training