

# Yueh-Po Peng

[✉ yuehpo.peng@gmail.com](mailto:yuehpo.peng@gmail.com) | [git y10ab1](https://github.com/y10ab1) | [in yueh-po-peng](https://www.linkedin.com/in/yueh-po-peng/) | [Yueh-Po Peng](https://yuehpo.peng)

## Experience

---

### Institute of Information Science, Academia Sinica

Taipei, Taiwan

RESEARCH ASSISTANT

Mar. 2022 - Present

#### Research Topics: Self-Supervised Learning, Medical Imaging

- 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 medical image (fMRI)** using **TWCC HPC**.
- Proposed a whole-brain feature selection method for decoding musical pitch from brain activity (fMRI) [2].

### Tomofun

Taipei, Taiwan

RESEARCH & DEVELOPMENT - AI INTERN

Mar. 2023 - Jul. 2024

#### Research Topics: Computer Vision, Large Language Models, Multimodal Learning

- Developed an automatic **short music video generation system** for daily pet clips.
- Surveyed **visual large language models (LLaVA)** variations with **llama.cpp** to generate image-caption pairs for knowledge distillation.
- Enhanced LLaVA image **inference speed by 250%** with only a 3% drop in accuracy.

## Education

---

### National Taiwan University

Taipei, Taiwan

M.S. IN DATA SCIENCE

Feb. 2023 - Jun. 2024

- Thesis topic: Whole-Brain Feature Selection Methods for Decoding from fMRI Data

### 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.
- Our model achieves **20% higher audio quality** than the best baseline, rated by 26 professional guitarists.
- 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.
- Analyzed pitch and fMRI correlations, showing our method outperforms ROI-based feature selection by **2-fold**.
- Published in ICASSP 2023 [2]. ([paper](#))

## 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," in Proc. Int. Conf. Digital Audio Effects 2024 (DAFx'24). (\* equally contributed)

[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," in Proc. IEEE International Conference on Acoustics, Speech and Signal Processing 2023 (ICASSP'23). (\* equally contributed)

## Skills

---

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

**Skillset** Machine Learning, Self-Supervised Learning, Medical Image, Music Information Research, Distributed Training