

Yueh-Po Peng

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Experience

Institute of Information Science, Academia Sinica

Taipei, Taiwan

RESEARCH ASSISTANT

Mar. 2022 - 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 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

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

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)

Awards

- 2020 **5th Place (Team) and 6th Place (Individual) out of 22 Teams**, Quantitative Trading Contest, Crypto Arsenal
2020 **32nd / 146 teams**, AICUP Singing Transcription Contest
2018 **19th (top 3%)**, National Cheng Kung University Calculus Competition

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