

HSIAO-TZU HUNG

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EDUCATION

National Taiwan University *March 2020 - Feb. 2022*
M.S @ Computer Science (Focus: AI) | Advisor: Dr. Yi-Hsuan Yang & Prof. Roger Jang
National Tsing Hua University *September 2010 – June 2014*
B.S @ Physics

COURSES AND PROGRAMMING SKILLS

AI/ML: Python, PyTorch, TensorFlow, Sci-kit learn
Data Visualization: Matplotlib, seaborn
User Interface: PyQt5 Fullstack : Flask, HTML, Docker
Engineering: Git, Linux, C++
Course: Machine learning, Deep Learning for Computer Vision, Algorithm design and analysis, Operating system, Computer architecture

WORK EXPERIENCE

MediaTek, Taiwan *Aug 2022 - current*
Machine Learning develop engineer

- Collaborate with the hardware design verification team to optimize the IC design flow with machine learning techniques. The deployed ML-based model saved 20% simulation time.

Amazon Ring, Taiwan *June 2021 - Aug. 2021*
Acoustic engineering Intern

- Implemented a Deep CNN-Self-Attention Model for automatic audio quality assessment

Research Center for IT Innovation, Academia Sinica, Taiwan *March 2020 - Feb. 2022*
Part-time Machine Learning Research Assistant; supervised by Dr. Yi-Hsuan Yang

- Collected a dataset and proposed EMOPIA, an emotion-controlled piano music generation model based on a Transformer framework, published in ISMIR 2021[1](acceptance rate: 40% - 50%), incorporated with the team in KAIST, Korea

Taiwan AI Labs, Taiwan *Feb. 2019 – Feb. 2020*
Full-time Machine Learning Research Internship; supervised by Dr. Yi-Hsuan Yang

- Crafted RNN-based VAE Jazz melody generation models; investigated Multi-tasking and Fine-tuning techniques to deal with small-sized dataset[2]
- Applies the VQ-VAE model to the music emotion recognition task[3]

Institute of Information Science, Academia Sinica, Taiwan *July 2018 – July 2019*
Full-time Research Assistant; supervised by Dr. Hsin-Min Wang

- Acquired hands-on experiences in speech processing and natural language processing

COURSE PROJECT

Deep Learning for Computer Vision

Overall score: A+

- 3rd place (3/10) in Final project: Long-Tailed Fine-Grained image recognition competition
- Applied BERT-based embedding and contrastive learning to tackle the Fine-Grained problem
- Applied resampling to deal with the unbalanced data

Machine Learning

Overall score: A+ (top 9.8%)

- 62/127 in Final project: Customer Churn Prediction competition, a score of 91 on the analysis project
- Applied KNN algorithm to handle the missing data
- Used oversampling strategy during training to tackle the imbalanced data
- Applied XGboost/Logistic Regression for the classification task

PUBLICATIONS

1. Hsiao-Tzu Hung, Joann Ching, Seungheon Doh, Nabin Kim, Juhan Nam and Yi-Hsuan Yang, EMOPIA: A Multi-Modal Pop Piano Dataset For Emotion Recognition and Emotion-based Music Generation, in *Proc. International Society for Music Information Retrieval (ISMIR)*, 2021.
2. Hsiao-Tzu Hung, Chung-Yang Wang, Yi-Hsuan Yang, Hsin-Min Wang, “Improving automatic Jazz melody generation by transfer learning techniques,” in *Proc. Asia Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC)*, 2019.
3. Hsiao-Tzu Hung, Yu-Hua Chen, Maximilian Mayer, Michael Vtter, Eva Zangerle, Yi-Hsuan Yang “MediaEval 2019 Emotion and Theme Recognition task: A VQ-VAE based approach”, in *Proc. MediaEval Benchmarking Initiative for Multimedia Evaluation (MediaEval)*, 2019.

SOFT SKILL

Ownership. I consider myself to be a good team player and have being part of diverse projects with a variety of people.(See Publications [1,3])

Good communication skills. Developed through my teaching career. Students think I am a good lecturer that deliver concepts that are easy to understand.

Bias for Action and Adaptability. Specially strengthened when I switch my career to computer science.