Yun-Ning (Amy) Hung

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Education

M.S. in Music Technology, Georgia Institute of Technology, USA *'19 - '21*

B.S. in Electrical Engineering, National Cheng Kung University (NCKU), Taiwan *'12 - '16*

UW-Madison Exchange Program, University of Wisconsin-Madison, USA *Fall '15*

Work Experience

Sr Audio Machine Learning Researcher at Moises Systems Inc. *'24 - Present*
- Research, develop and deploy machine learning models for music/audio source separation.
- Research on light-weight models for on-device source separation

Research Engineer at TikTok Inc. *'22 - '24*
- Research and develop machine learning models to retrieve information (e.g. beat, chord, musical score, structure, etc) from music audio.
- Research on self-supervised and weakly-supervised learning for large-scale music information retrieval training
- Publish research findings and deploy deep learning models into production.

Research Intern at TikTok Inc. *'20 Summer*
- Develop novel transformer-based architecture for music structure analysis and beat/downbeat tracking, resulting in 12% improvement on boundary segmentation and downbeat tracking.

Audio Algorithm Intern at Netflix *'20 Fall*
- Built a large-scale (~1600hr) dataset for speech/music detection in production TV shows' audio. Develop a speech/music detector and deployed the detector as a python package used within the company.

Research Assistant at Georgia Institute of Technology *'19 - '22*
- Developed three novel deep learning models to automatically assess musical performance based on musical score and performance recording, resulting in 10+% improvement

Research Intern at Mitsubishi Electric Research Laboratories (MERL) *'20 Summer*
- Developed two novel source separation frameworks that leverages adversarial training to separate a mixture of music only with the guidance of weak labels.

Research Assistant at Academia Sinica, the National Academy of Taiwan *'17 - '19*
- Developed two novel models incorporating prior knowledge and multitask framework for automatic instrument recognition.
- Presented at several seminar talks, and one invited talk at the *6th Taiwanese Music and Audio Computing workshop.*

Research Assistant at KKBOX Inc., the largest online music streaming company in Taiwan *'17 - '19*
- Analyzed large-scale audio and lyrics data with Python framework (Numpy, Scikit-learn, Matplotlib, etc).
- Developed several music classification models, including instrument recognition, mood classification, and music scene classification, to assist music recommendation.
- Developed musical composition style transfer systems to assist controllable AI music creation tools.

Academic Experience

Journal Articles

1. **Y.-N. Hung**, C.-W. Wu, I. Orife, A. Hipple, W. Wolcott, and A. Lerch, “A large TV dataset for speech and music activity detection.” Journal on Audio, Speech, and Music Processing (**EURASIP**), 2022.

Peer-reviewed Conference Papers

2. **Y.-N. Hung**, I. Pereira, and F. Korzeniowski, “Moises-Light: Resource-efficient Band-split U-Net For Music Source Separation”, **WASPAA**, 2025
3. G. Plaja-Roglans, **Y.-N. Hung**, X. Serra, and I. Pereira, “Generating Separated Singing Vocals Using a Diffusion Model Conditioned on Music Mixtures”, **WASPAA**, 2025
4. G. Plaja-Roglans, **Y.-N. Hung**, X. Serra, and I. Pereira, “Efficient and Fast Generative-Based Singing Voice Separation using a Latent Diffusion Model”, **IJCNN**, 2025
5. W.-T. Lu, J.-C. Wang, Q. Kong, and **Y.-N. Hung**, "Music source separation with band-split rope transformer”, **ICASSP**, 2024
6. M. Won, **Y.-N. Hung**, and D. Le., "A Foundation Model for Music Informatics.", **ICASSP**, 2024.
7. **Y.-N. Hung**, C.-H. Yang, P.-Y. Chen, and A. Lerch, "Low-Resource Music Genre Classification with Cross-Modal Neural Model Reprogramming", **ICASSP**, 2023.
8. W.-T. Lu, J.-C. Wang, and **Y.-N. Hung**, "Multitrack Music Transcription with a Time-Frequency Perceiver", **ICASSP**, 2023.
9. **Y.-N. Hung**, and A. Lerch, "Feature-informed Embedding Space Regularization For Audio Classification”, **EUSIPCO**, 2022.
10. **Y.-N. Hung**, and A. Lerch, "Feature-informed Latent Space Regularization for Music Source Separation”, **DAFx**, 2022.
11. **Y.-N. Hung**, J.-C. Wang, X. Song, W.-T. Lu, and M. Won, "Modeling Beats and Downbeats with a Time-Frequency Transformer”, **ICASSP**, 2022.
12. J.-C. Wang, **Y.-N. Hung**, and J. B. L. Smith, "To catch a chorus, verse, intro, or anything else: Analyzing a song with structural functions”, **ICASSP**, 2022.
13. **Y.-N. Hung**, G. Wichern, and J. Le Roux, "Transcription Is All You Need: Learning to Separate Musical Mixtures with Score as Supervision”, **ICASSP**, 2021.
14. **Y.-N. Hung**, and A. Lerch, “Multitask learning for instrument activation aware music source separation”, **ISMIR**, 2020
15. J, Huang, **Y.-N. Hung**, A. Pati, S. Gururani, and A. Lerch, “Score-informed Networks for Music Performance Assessment”, **ISMIR**, 2020
16. **Y.-N. Hung**, I-T. Chiang, Y.-A. Chen, and Y.-H. Yang, "Musical Composition Style Transfer via Disentangled Timbre Representations”, I**IJCAI**, 2019 ***(17% acceptance rate)***
17. **Y.-N. Hung**, Y.-A. Chen, and Y.-H. Yang, “Multitask learning for frame-level instrument recognition”, **ICASSP**, 2019.
18. **Y.-N. Hung,** and Y.-H. Yang, "Frame-level Instrument Recognition by Timbre and Pitch”, **ISMIR**, 2018

Reviewed Journals/Papers

- IEEE International Conference on Acoustics, Speech and Signal Processing, **2023~2025**
- IEEE International Conference on Multimedia & Expo, **2022**
- IEEE Transactions on Audio, Speech and Language Processing, **2020~2025**
- International Society for Music Information Retrieval Conference, **2023~2025**
- INTERSPEECH, **2024~2025**
- NeurIPS 2025 Workshop Proposal on AI for Music, **2025**
- International Joint Conference on Neural Networks, **2023~2025**

Academic Service

- **Late-Breaking/Demo Chairs**, International Society for Music Information Retrieval Conference (ISMIR), 2025
- **Diversity and Inclusion Chairs**, IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA), 2025
- WIMIR/WiMIR Mentoring Program Organizers, 2025

Skills

Machine Learning	Language: Python Tools: PyTorch, Pytorch-lightning, Numpy, Scikit-learn, Matplotlib, Librosa
Musical Tools	Sonic Visualiser, Max/MSP, FFmpeg
Others	Git, Linux, Latex
Spoken	Chinese (mother tongue), English (fluent), Taiwanese (listen), Spanish (read & listen)
Musical Instruments	Piano, Flute, Guitar, Ukulele, Double Bass, Cajon

Awards

Government Scholarship to Study Abroad, Ministry of Education, Taiwan 2020-2021

WIMIR Travel Grant, International Society for Music Information Retrieval Conference *2018*

Study Abroad Scholarship, Electrical Engineering Department, National Cheng Kung University *Fall 2015*

Academic Excellence Award (Top 10% students in the department), National Cheng Kung University *2013 - 2014*