

# HSIAO-TZU HUNG

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Hsiao-Tzu Hung is currently a second-year graduate student in computer science, focusing on research on automatic music generation using NLP techniques under supervision of Dr. Yi-Hsuan Yang and Dr. Jyh-Shing Roger Jang. She has two-year full-time experience in deep learning research, with two first-author publications. Ms. Hung is an extremely communicative person, an independent researcher and also a team player, who has experienced in international cooperation. She looks forward to acquiring hands-on system building experience and code review process during internship.

## EDUCATION

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**National Taiwan University**

*March 2020 - present*

M.S. in Computer Science

**National Tsing Hua University**

*September 2010 – June 2014*

B.S. in Physics

## PROGRAMMING SKILLS AND COURSES

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Machine learning: Python, PyTorch, TensorFlow

Engineering: Git, Linux, MongoDB, Docker, verilog, C++

## WORK EXPERIENCE

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**Research Center for IT Innovation, Academia Sinica, Taiwan**

*March 2020 - present*

*Part-time Machine Learning Research Assistant; supervised by Dr. Yi-Hsuan Yang*

- Building an emotion-based automatic piano composition model using self-attention based Transformers, within a joint project with Dr. Juhan Nam's group at KAIST, South Korea.

**Taiwan AI Labs, Taiwan**

*Feb. 2019 – Feb. 2020*

*Full-time Machine Learning Research Internship*

- Investigated means to speed up Transformer-based language models for music generation.
- Crafted RNN-based Jazz melody generation models; investigated two different transfer learning techniques for pre-train/fine-tuning for improving the diversity of the generated music.
- Wrote a crawler and compiled a dataset with 200,000+ songs.
- Investigated various deep learning architectures to classify music by emotion automatically; learned to deal with data imbalanced issues in multi-label classification.

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

*July 2018 – July 2019*

*Full-time Research Assistant; supervised by Dr. Hsin-Min Wang*

- Acquired hands-on experience in automatic music generation using recurrent neural nets (RNNs).
- Acquired hands-on experiences in speech processing and natural language processing.

## PUBLICATIONS

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**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.

**Hsiao-Tzu Hung**, Yu-Hua Chen, Maximilian Mayer, Michael Vötter, 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.