

# JINGWEI ZHAO

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## EDUCATION

### National University of Singapore (NUS)

Aug 2021 – Present

Ph.D. Student at Institute of Data Science (Integrative Sciences and Engineering Programme)

- Advisor: Ye Wang
- Teaching Assistant: CS5242 Neural Networks and Deep Learning (2022 Spring)

### Shanghai Jiao Tong University (SJTU)

Sept 2017 – Jun 2021

B.E. *with Honors* in Automation (Artificial Intelligence Track)

- Core Courses: Artificial Intelligence (94/100), Discrete Mathematics (99/100), Signals and Systems (93/100)

## PUBLICATION

- **J. Zhao**, and G. Xia, “AccoMontage: Accompaniment Arrangement via Phrase Selection and Style Transfer,” in *Proceedings of 22nd International Conference on Music Information Retrieval (ISMIR)*, Online, 2021.
- C. Liu, **J. Zhao (Co-First)**, G. Liu, Y. Gao, and X. Gao, “D2EA: Depict the Epidemic Picture of COVID-19.” *Journal of Shanghai Jiao Tong University (Science)* 25.2 (2020): 165-176.

## RESEARCH EXPERIENCE

### An Adversarial Approach to Music Representation Learning

Aug 2021 – Present

PhD Student | Prof. Ye Wang | Sound & Music Computing Lab, NUS

- Explore using domain adversarial training as an inductive bias to disentangle semantically meaningful features of symbolic music and control the generation process.
- Introduced an adversarial loss to be minimized by the discriminator and maximized by the VAE, during which the VAE is induced to disentangle intertwined features from the encoded representation.

### Algorithm Arrangement via Search and Style Transfer

Jul 2020 – July 2021

Research Assistant | Prof. Gus Xia | Music X Lab, New York University Shanghai

- Proposed a top-down hybrid approach to generative models, where deep generation and search-based generation are combined to complement each other and enhance the overall generation quality.
- Introduced *AccoMontage*, a system capable of generating well-structured and fine-grained accompaniments for full-length songs, with state-of-the-art quality over existing learning-based and search-based baselines.

### Real-Time Music-Driven Dance Generation for Humanoid Robot

Oct 2019 – Jul 2020

Research Assistant | Prof. Yue Gao | Artificial Intelligence Institute, SJTU

- Adopted unit selection methodology as a means of generating robot-executable dance, where the dance is rendered unit by unit through two selection criteria: semantic relevance and transition stability
- Applied online beat tracking with a feedback control loop to synchronize the dance to the music in real-time

### Cross Modality Learning for Sound and Visual Scene

Apr 2019 – Mar 2020

Research Assistant | Prof. Xu Zhao | Vision Lab, SJTU

- Put forward a novel idea to “watch and listen” for video understanding and proposed a CNN “listener” model using Mel-spectrogram of video soundtracks as input for video action recognition.
- Combined the “listener” model with Pseudo-3D (a SOTA traditional visual-based video classifier) by weighted average fusion, and obtained 1.5% accuracy gain on the Kinetics-600 Dataset

## MISCELLANEOUS

### Honors

- Zhiyuan Honor Degree of Bachelor of Engineering (Top 1%) Jun 2021
- Han-Ying-Ju-Hua Scholarship (Top 10 / 750) 2018-2020
- Zhiyuan Honors Scholarship (Top 5%) 2017-2021

### Music Performing

- Accordion (professional), piano, and bel canto (baritone)

### Activities

- Senior volunteer at 2021 New Interfaces for Musical Expression Conference (NIME 2021) Jun 2021
- Member of Shanghai Computer Music Association (SCMA) Feb 2019 – Present
- Baritone singer at SJTU Student Choir Dec 2017 – 2021