Jingyue Huang

yuer867.github.io | jih150@ucsd.edu | Yuer867

Research Directions: Controllable Music Generation · Music Representation Learning · Singing Voice Synthesis

EDUCATION

University of California San Diego *California, USA*
· *Ph.D. in Computer Science*, advised by Professor Julian McAuley Sept 2024 - Present

New York University *New York, USA*
· *M.S. in Data Science*, GPA 3.97/4.0 Sept 2022 - May 2024
· Courses: Deep Learning for Media, Digital Signal Processing, Natural Language Processing

Fudan University *Shanghai, China*
· *B.S. in Data Science*, GPA 3.7/4.0, Rank: 10/84 Sept 2018 - June 2022
· Courses: Machine Learning, Fusion of Music and Computer Science, Database System

EXPERIENCE

Smule, Inc. *Salt Lake City, USA*
· Research Intern | Smule Labs June 2025 - Sept 2025
· The modeling of style-following performance curves for versatile singing tasks.

Music and AI Lab, National Taiwan University *Taiwan*
· Research Assistant supervised by Professor Yi-Hsuan Yang Mar 2023 - Aug 2024
· The development of an emotion-conditioned music generation framework.

HPC-AI Lab, National University of Singapore *Singapore*
· Research Assistant supervised by Professor Yang You Apr 2021 - Sept 2021
· The design of a weakly supervised learning method for Textbook Question Answering.

Knowledge Works Research Laboratory, Fudan University *Shanghai, China*
· Research Assistant supervised by Professor Deqing Yang Sept 2020 - June 2022
· The design of concept extraction and concept generation models for knowledge graphs.

PUBLICATIONS

[1] **J. Huang**, Q. Yang, F. Chen, J. McAuley, R. Leistikow, P. Cook, and Y. Zang, "StylePitcher: Generating Style-Following and Expressive Pitch Curves for Versatile Singing Tasks", in *Proceedings of the International Conference on Acoustics, Speech, and Signal Processing, ICASSP 2026, submitted*.

[2] **J. Huang**, Z. Novack, P. Long, Y. Hou, K. Chen, T. Berg-Kirkpatrick, and J. McAuley, "MuseTok: Symbolic Music Tokenization for Generation and Semantic Understanding", in *Proceedings of the International Conference on Acoustics, Speech, and Signal Processing, ICASSP 2026, submitted*.

[3] **J. Huang**, Q. Yang, F. Chen, R. Leistikow, and Y. Zang, "StylePitcher: Generating Style-Following and Expressive Pitch Curves for Versatile Singing Tasks", in *Proceedings of the 39th Annual Conference on Neural Information Processing Systems (NeurIPS), Workshop on Artificial Intelligence for Music, 2025*.

[4] W. Xu, Y. Ma, **J. Huang**, Y. Li, W. Ma, T. Berg-Kirkpatrick, J. McAuley, P. Liang, and H. Dong, "REGen: Multimodal Retrieval-Embedded Generation for Long-to-Short Video Editing", in *Proceedings of the 39th Annual Conference on Neural Information Processing Systems, NeurIPS 2025*.

[5] **J. Huang**, K. Chen, and Y. Yang, "Emotion-Driven Piano Music Generation via Two-stage Disentanglement and Functional Representation", in *Proceedings of the 25th International Society for Music Information Retrieval Conference, ISMIR 2024*.

[6] **J. Huang** and Y. Yang, "Emotion-Driven Melody Harmonization via Melodic Variation and Functional Representation", *arXiv preprint arXiv:2407.20176*, 2024.

[7] J. Ma, Q. Chai, **J. Huang**, J. Liu, Y. You, and Q. Zheng, "Weakly Supervised Learning for Textbook Question Answering", *IEEE Transactions on Image Processing*, vol. 31, pp. 7378–7388, 2022.

[8] S. Yuan, D. Yang, J. Liang, Z. Li, J. Liu, **J. Huang**, and Y. Xiao, "Generative Entity Typing with Curriculum Learning", in *Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing, EMNLP 2022*.

[9] S. Yuan, D. Yang, J. Liang, J. Sun, **J. Huang**, and K. Cao, "Large-scale Multi-granular Concept Extraction Based on Machine Reading Comprehension", in *Proceedings of the 20th International Semantic Web Conference, ISWC 2021*.

PROJECTS

StylePitcher (♫)
- *Mentor: Yongyi Zang | Smule, Inc.*
- Proposed a pitch curve generator that learns singer style from reference audio, supporting diverse singing tasks including pitch correction, singing voice synthesis and singing voice conversion.
- Introduced a flow matching architecture for curve generation and an inpainting mechanism for flexible task adaptation.

MuseTok (⏻)
- *Advisor: Julian McAuley, Professor | University of California San Diego*
- Proposed a tokenization framework of symbolic music, applicable to both generation and semantic understanding tasks.
- Analyzed how music tokens learn underlying musical concepts, such as key, interval, time signature, and texture.

EMO-Disentanger (⏻)
- *Advisor: Yi-Hsuan Yang, Professor | National Taiwan University*
- Developed a two-stage framework for emotion disentanglement in piano performance generation, modeling valence through lead sheet composition and arousal via performance-level attributes.
- Proposed a novel functional representation for symbolic music, encoding both melody and chords with Roman numerals relative to musical keys, to consider the interactions among notes, chords and tonalities.

Music Recommender System
- *Advisor: Brian McFee, Assistant Professor | New York University*
- Developed a distributed system in Spark employing collaborative filtering to recommend music on the ListenBrainz.
- Compared the distributed system with a single-machine implementation regarding efficiency and accuracy.

WSTQ (⏻)
- *Advisor: Yang You, Presidential Young Professor | National University of Singapore*
- Developed weakly supervised learning methods to investigate deep semantic comprehension of both text and diagrams for Textbook Question Answering (TQA), achieving the state-of-the-art results on CK12-QA and AI2D datasets.

MRC-CE (⏻)
- *Advisor: Deqing Yang, Associate Professor | Fudan University*
- Built a concept extraction framework with machine reading comprehension model based on BERT to tackle concept shortage of knowledge graphs, resulting in 7,053,900 new entity-concept pairs for CN-DBpedia.

SCHOLARSHIPS AND LEADERSHIPS

- **Outstanding Student Scholarship : 2021 - 2022, 2020 - 2021, 2019 - 2020**
- Vice President of Technology Education: Connecting Cultures (TECC), Fudan University

SKILLS

- **Programming**: Python, SQL, C, R, and Matlab
- **Framework**: PyTorch, PyTorch Lightning
- **Language**: Native in Chinese; Fluent in English
- **Instrument**: Guitar, Guzheng