Yuxuan Wu

AI Researcher & Music Artist

✉ Yuxuan.Wu@mbzuai.ac.ae | ⌂ Irislucent | ♫ BowOfAtlas

RESEARCH INTEREST

AI emerges not only for music but also from it. My research interest lies in *self-supervised learning* and *interpretable representation learning*, as well as their applications in audio and music. The core of my research is inspired by the hierarchical nature of human perception, thinking, and communication, with music as their most intriguing manifestation. Building on this, I am dedicated to researching AI that more closely resembles human intelligence, enhancing both AI systems' effectiveness and human artistry.

EDUCATION

Mohamed bin Zayed University of Artificial Intelligence — Abu Dhabi, UAE
Ph.D. in Machine Learning (Advised by Prof. Gus Xia and Prof. Bhiksha Raj) — Aug 2023 – Now

Carnegie Mellon University — Pittsburgh, USA
M.Sc. in Music and Technology (Advised by Prof. Roger Dannenberg) — Aug 2021 – Aug 2023

Shanghai Jiao Tong University — Shanghai, China
B.Eng. in Information Engineering (Advised by Prof. Jie Zhu) — Sep 2017 – Jun 2021

WORKING EXPERIENCE

Machine Learning Department, MBZUAI — Abu Dhabi, UAE
Teaching Assistant — Jan 2024 – Now
- Teaching Assistant of ML711: *Intermediate Music AI*
- Teaching Assistant of ML801: *Foundations and Advanced Topics in Machine Learning*

School of Computer Science, Carnegie Mellon University — Pittsburgh, USA
Teaching Assistant — Aug 2022 – May 2023
- Teaching Assistant of 11755/18797: *Machine Learning for Signal Processing*
- Teaching Assistant of 15322/15622: *Introduction to Computer Music*

GEC Academy — Beijing, China
Teaching Fellow — Jul 2023 – Now
- Teaching Fellow of *Computer Music Synthesis and Composition*

Speech, Audio and Music Intelligence, TikTok, ByteDance Inc. — Santa Clara, USA
Research Intern — May 2022 – Aug 2022
- Development of robust texture generation and constrained melody generation algorithms for AI-music products
- Development of in-house music rendering system

AI Lab Speech & Audio, ByteDance Inc. — Shanghai, China
Musician Intern — Jul 2020 – Jul 2021
- Development of the heuristic-based texture generation algorithm
- Composition, music production and studio monitoring
- Pipeline design of in-house versatile music generation systems

Publications

Ziyu Wang, **Yuxuan Wu**, Gus Xia, Roger B. Dannenberg: "Automatic Melody Reduction via Shortest Path Finding", Submitted to ISMIR 2025

Liwei Lin, Daniel Chin, Junyan Jiang, **Yuxuan Wu**, Gus Xia: "Cross-Modal Alignment of Music Language Models for Unified Understanding and Generation", Submitted to ISMIR 2025

Yuxuan Wu, Ziyu Wang, Bhiksha Raj, Gus Xia: "Unsupervised Disentanglement of Content and Style via Variance-Invariance Constraints", ICLR 2025

Fan Yang, Muqiao Yang, Xiang Li, **Yuxuan Wu**, Zhiyuan Zhao, Bhiksha Raj, Rita Singh: "A Closer Look at Reinforcement Learning-based Automatic Speech Recognition", Computer Speech and Language 2024

Yuxuan Wu, Roger B. Dannenberg, Gus Xia: "Motif-Centric Representation Learning for Symbolic Music", arXiv preprint arXiv:2309.10597 (2023)

Shuqi Dai, Siqi Chen, **Yuxuan Wu**, Ruxin Diao, Roy Huang, Roger B. Dannenberg: "SingStyle111: A Multilingual Singing Dataset with Style Transfer", ISMIR 2023

Yuxuan Wu, Yifan He, Xinlu Liu, Yi Wang, Roger B. Dannenberg: "TransPlayer: Timbre Style Transfer with Flexible Timbre Control", ICASSP 2023 (Oral)

Ruibin Yuan, **Yuxuan Wu**, Jacob Li, Jaxter Kim: "DeID-VC: Speaker De-identification via Zero-shot Pseudo Voice Conversion", INTERSPEECH 2022

Xia Liang, Yuan Wan, **Yuxuan Wu**, Bilei Zhu, Zejun Ma: "A Method for Music Texture Generation Based on Markov Chain", China Patent, 2022

Honors and Awards

2025 Google PhD Fellowship: MBZUAI University Nominee

2022 AI Song Contest: 3rd Place (Team "3+i", song "A to I")

2020 CSMT Music Exhibition: 2nd Prize (with Xinyue Zhu, project "Project Ming")

2020 Think Youth Digital Creation Competition (3rd Edition): 3rd Prize (song "Feather")

2018 SJTU Annual Singer Contest (22nd): 3rd Place

2018 SJTU Merit Student

Invited Talks

"Introduction to Music AI: Programmer's Perspective and Machine Composition", Nanjing University of the Arts, May 2025

"Emergent Content-Style Disentanglement via Variance-Invariance Constraints", Sound & Music Computing Lab, National University of Singapore, April 2025

"A Glimpse into Self-Supervised Music Concept Discovery", Nanjing University of the Arts, June 2024

"A to I: Music Cocreation with AI", Music AI Group, Mila - Quebec AI Institute, Feb 2023