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 (Advisor: Prof. Gus Xia and Prof. Bhiksha Raj) — Aug 2023 – Present

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

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

WORKING EXPERIENCE

Machine Learning Department, MBZUAI — Abu Dhabi, UAE
Teaching Assistant — Jan 2024 – Present

- AI1010: *Introduction to AI—Thinking Machines* (First undergraduate cohort)
- ML711: *Intermediate Music AI* (First offering)
- ML801: *Foundations and Advanced Topics in Machine Learning*

School of Computer Science, Carnegie Mellon University — Pittsburgh, USA
Teaching Assistant — Aug 2022 – May 2023

- 11-755/18-797: *Machine Learning for Signal Processing*
- 15-322/15-622: *Introduction to Computer Music*

GEC Academy — Beijing, China
Teaching Fellow — Jul 2023 – Present

- Co-teaching *Computer Music Synthesis and Composition* with Prof. Roger Dannenberg

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, 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

Google PhD Fellowship 2025: University Nominee, MBZUAI

AI Song Contest 2022: 3rd Place – Team "3+i", song "A to I" (from the album *Fallen Florets*)

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

Think Youth Digital Creation Competition 2020: 3rd Prize – song "Feather" (from the album *Previous Track, Pause*)

SJTU Annual Singer Contest 2018: 3rd Place

SJTU Merit Student 2018

INVITED TALKS AND GUEST LECTURES

"Music Through the Lens of Machine and Intelligence", Chengdu University, July 2025

"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 - Que bec AI Institute, Feb 2023