

Yuxuan Wu

AI Researcher & Music Artist

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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 <i>Ph.D. in Machine Learning (Advised by Prof. Gus Xia and Prof. Bhiksha Raj)</i>	Abu Dhabi, UAE <i>Aug 2023 – Now</i>
Carnegie Mellon University <i>M.Sc. in Music and Technology (Advised by Prof. Roger Dannenberg)</i>	Pittsburgh, USA <i>Aug 2021 – Aug 2023</i>
Shanghai Jiao Tong University <i>B.Eng. in Information Engineering (Advised by Prof. Jie Zhu)</i>	Shanghai, China <i>Sep 2017 – Jun 2021</i>

WORKING EXPERIENCE

Machine Learning Department, MBZUAI <i>Teaching Assistant</i> <ul style="list-style-type: none">Teaching Assistant of AI1010: <i>Introduction to Artificial Intelligence</i>Teaching Assistant of ML711: <i>Intermediate Music AI</i>Teaching Assistant of ML801: <i>Foundations and Advanced Topics in Machine Learning</i>	Abu Dhabi, UAE <i>Jan 2024 – Now</i>
School of Computer Science, Carnegie Mellon University <i>Teaching Assistant</i> <ul style="list-style-type: none">Teaching Assistant of 11755/18797: <i>Machine Learning for Signal Processing</i>Teaching Assistant of 15322/15622: <i>Introduction to Computer Music</i>	Pittsburgh, USA <i>Aug 2022 – May 2023</i>
GEC Academy <i>Teaching Fellow</i> <ul style="list-style-type: none">Teaching Fellow of <i>Computer Music Synthesis and Composition</i>	Beijing, China <i>Jul 2023 – Now</i>
Speech, Audio and Music Intelligence, TikTok, ByteDance Inc. <i>Research Intern</i> <ul style="list-style-type: none">Development of robust texture generation and constrained melody generation algorithms for AI-music productsDevelopment of in-house music rendering system	Santa Clara, USA <i>May 2022 – Aug 2022</i>
AI Lab Speech & Audio, ByteDance Inc. <i>Musician Intern</i> <ul style="list-style-type: none">Development of the heuristic-based texture generation algorithmComposition, music production and studio monitoringPipeline design of in-house versatile music generation systems	Shanghai, China <i>Jul 2020 – Jul 2021</i>

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

- 2025 Google PhD Fellowship:** University Nominee of MBZUAI
- 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 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 - Quebec AI Institute, Feb 2023