Qixin (Lindsey) Deng

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TL;DR

I am currently pursuing a master's degree in Electrical Engineering at Northwestern University, researching the perceptual semantics of timbre to create more intuitive, perceptually grounded AI tools for sound design and music creation.

Research Interest: Computer Audition, Music Information Retrieval, Audio Signal Processing, Deep Learning

EDUCATION

Northwestern University, Evanston, IL — *Sep 2024 – Dec 2025*
Master of Science in Electrical Engineering (GPA:3.86/4.00)

University of Rochester, Rochester, NY — *Aug 2021 – May 2024*
Bachelor of Science in Audio and Music Engineering | *Minor in Computer Science*
GPA: 3.96/4.00 | Magna Cum Laude | Highest Distinction

RESEARCH EXPERIENCE

Interactive Audio Lab, Northwestern University — *Sep 2024 – Present*
Graduate Researcher |Advisor: Bryan Pardo and Thrasyvoulos N. Pappas

- Investigating the perceptual semantics of timbre and developing methods to examine and align deep learning-based audio embeddings with human perception.
- Contributing as a software development engineer to HARP, a sample editor app that integrates audio deep learning models.

Multimodal Art Projection + Hong Kong University of Science and Technology — *Sep 2023 – Present*
Research Collaborator |Advisor: Wei Xue

- Researching generative models for music(YuE), fine-tuning them to better align with human perceptual judgments.

Bocko Lab, University of Rochester — *Jan 2024 – Apr 2024*
Undergraduate Researcher |Advisor: Michael Heilemann

- Collected and processed datasets from a Fender Telecaster distortion pedal to train an guitar pedal emulation model using WaveNet architecture, and achieved high fidelity in capturing and reproducing audio characteristics.

Senior Design, University of Rochester — *Sep 2023 – Apr 2024*
Undergraduate Researcher |Advisor: Michael Heilemann

- Design and built WheelTalks, an embedded system to control electric wheelchairs using voice commands. Implemented a speech recognition algorithm using Arduino Uno and ELECHOUSE VR3 modules and designed a hardware joystick interface attachment to enable voice controllability for electric wheelchairs.

PUBLICATION

Q. Deng, Q. Yang, R. Yuan, Y. Huang, Y. Wang, X. Liu, Z. Tian, J. Pan, G. Zhang, H. Lin, Y. Li, Y. Ma, J. Fu, C. Lin, E. Benetos, W. Wang, G. Xia, W. Xue, Y. Guo,
"ComposerX: Multi-Agent Symbolic Music Composition with LLMs" in *Proceedings of the 25th International Society for Music Information Retrieval (ISMIR) 2024*.

AWARDS & HONORS

Phi Beta Kappa Academic Honor Society — Spring 2024
Tau Beta Pi Engineering Honor Society — Fall 2023
Whipple Science and Research Scholarship, $12000/year, University of Rochester — Fall 2021 – Spring 2024

SKILLS AND INTERESTS

Programming languages	Python, C/C++, MATLAB
Audio Programming Language	Faust, MaxMSP
Tools	NumPy, PyTorch, LaTEX, Git, JUCE
Acoustical Measurement	CLIO, Room EQ Wizard
Hardware Design	LTSPICE, KiCad
Audio Engineering	studio recording, mixing, mastering in Logic Pro and Pro Tools
Music Instrument	piano, guitar