Qixin (Lindsey) Deng

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TL;DR

I am a Master's student in Electrical Engineering at Northwestern University, focusing on AI for audio and music. My research aims to develop 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

- Adapting generative music models to align more closely with human perception and judgement.

PUBLICATIONS

Published

- **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.

Under Review

- **Q. Deng**, B. Pardo, T. N. Pappas,
"Do Joint Language-Audio Embeddings Encode Perceptual Timbre Semantics?" submitted to *ICASSP*, 2026.
- F. Cwitkowitz, C. Benetatos, **Q. Deng**, H. Yu, N. Pruyne, P. O'Reilly, H. Flores Garcia, Z. Duan, B. Pardo,
"HARP 3.0: Generalizing I/O and API Support for Machine Learning in Digital Audio Workstations" submitted to *NeurIPS 2025 Workshop on AI for Music*.
- C. Hao, R. Yuan, J. Yao, **Q. Deng**, X. Bai, W. Xue, L. Xie,
"SongFormer: Scaling Music Structure Analysis with Heterogeneous Supervision" submitted to *ICASSP*, 2026.

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