ANNIE CHU

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TL;DR

I am a researcher at the intersection of audio, machine learning, and human-centered design. My work centers on (1) developing innovative and inclusive audio models & interfaces for creative audio applications, with a parallel focus on (2) investigating how audio technologies shape and are shaped by cultural practices, user perceptions, and broader societal contexts.

Research interests: practioner-centric audio models, HCI, music information retrieval, ethical & social implications of new audio technologies

EDUCATION

Northwestern University, PhD — Evanston, IL
Technology & Social Behavior (Dual CS + Communications) — *2023 - Present (expected 2028)*

Olin College of Engineering, B.S. — Needham, MA
Major: Electrical Engineering, Focus: Media Arts — *2018 - 2022*

RESEARCH

Northwestern University — Sep 2023 – Present
Interactive Audio Lab, Advisor: Bryan Pardo

Adobe Research — Summer 2025
Research Intern, Mentors: Prem Seetharaman, Oriol Nieto, Justin Salamon

Northwestern University — Sep 2024 – Present
Other Research Collaborations
- Music Cognition & Perception Lab (collaboration with Dan Shanahan)
- Lu Lab (collaboration with Yingdan Lu, Summer/Fall 2024)

Music and Audio Research Lab (MARL) – New York University — Summer 2022
Research Assistant, SONYC

DSP Research – Reverb Algorithms — 2021 – 2022
Undergraduate Researcher, Advisor: Andrew Davis

PUBLICATIONS

1. **A. Chu**, P. O'Reilly, J. Barnett, and B. Pardo. Text2fx: Harnessing clap embeddings for text-guided audio effects. In *ICASSP 2025*
2. P. O'Reilly, J. Barnett, H. Flores García, **A. Chu**, N. Pruyne, P. Seetharaman, and B. Pardo. The rhythm in anything: Audio-prompted drums generation with masked language modeling. In *ISMIR 2025*
3. W. Agnew, J. Barnett, **A. Chu**, R. Hong, M. Feffer, R. Netzorg, H. H. Jiang, E. Awumey, and S. Das. Sound check: Auditing audio datasets. In *AIES 2025*
4. J. B. Smith, **A. Chu**, N. Alben, S. Ding, K. Gautier, S. Garrett, B. Magerko, J. Freeman, B. Pardo, S. Ludi, T. Lee, and T. McKlin. Using co-design to investigate affordances of an expressive cs learning environment for students who are bvi. In *ASSETS 2025*
5. J. Barnett, P. O'Reilly, J. B. Smith, **A. Chu**, and B. Pardo. Ethics statements in AI music papers: The effective and the ineffective. In *NeurIPS 2025 AI for Music Workshop*
6. **A. Chu**, H. Flores García, P. O'Reilly, B. Pardo. "Text2EQ: Human-in-the-Loop Co-Creation Interface for EQ." *Accepted Late-Breaking Demo (LBD), ISMIR 2024*

TEACHING & SERVICE

Student Volunteer Co-Chair — CHI 2026 2026
with Tzu-Sheng Kuo, Yuki Onishi, Esen Tütüncü

Teaching Assistant — Northwestern University Spring 2025
CS352: Machine Perception of Music and Audio

Instructor — Northwestern University Winter 2025
Generative Modeling (with Julia Barnett)

Workshop Instructor — OCMC 2024 Sep 2024
Faces to Soundwaves: Unpacking Organizational Communication through Computational Multimodal Analysis (with Dr. Yingdan Lu)

Instructor — Northwestern University Spring 2024
Human-Computer Interfaces for Musicking (with Hugo Flores García)

Teaching Assistant — Olin College 2018 & 2019
Introduction to Sensors, Instrumentation, and Measurement

Reviewer
- NeurIPS 2025, AI for Music Workshop

TALKS

Leveraging ML to Understand the Digital Soundscape of Social Movements on TikTok
NSF Sound Travels *Sep 2024*

Algo-Rhythms: How Music Recommendation Systems Keep You in Tune
Scientists for Migrant Learning & Education *May 2024*

HONORS AND AWARDS

NSF Graduate Research Fellowship Program Honorable Mention 2025
WiMIR Conference Grant 2022
National Merit Scholarship 2018–2022
Olin College Merit Tuition Scholarship 2018–2022

SKILLS

- **Programming Languages** - Python, MATLAB
- **Machine Learning** - PyTorch, Scipy, Numpy, Scikit-learn, TensorFlow
- **Audio Production** - Logic Pro X
- **Design Methods & Prototyping Tools** - Figma, Adobe XD, Wireframing, User Journey Mapping, Participatory Design, Speculative Design, Usability Testing
- **Qualitative Research Methods** - Grounded Thematic Analysis, Interview Coding, Survey Design