

ANNIE CHU

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TL;DR

My research explores how computational tools shape the ways people create and experience sound. Working at the intersection of audio, machine learning, and human-centered design, I develop novel audio models and interactive systems grounded in creative practice while studying their practical and broader cultural impacts. I aim to design audio systems that are expressive, inclusive, and socially responsible.

Research interests: creative audio ML, music information retrieval, practitioner-centered design/HCI, computational musicology

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
Music Cognition & Perception Lab (in collab. with Dan Shanahan)

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

Music and Audio Research Lab (MARL) – New York University Summer 2022
Research Assistant, Project: SONYC (Sounds of New York City)

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

PUBLICATIONS

- A. Chu**, J. B. Smith, and B. Pardo. A map-based interface for exploratory audio effects design. In *NIME 2026*
- A. Chu**, H. Flores García, O. Nieto, J. Salamon, B. Pardo, and P. Seetharaman. Mix2morph: Learning sound morphing from noisy mixes. In *ICASSP 2026*
- A. Chu**, P. O'Reilly, J. Barnett, and B. Pardo. Text2fx: Harnessing clap embeddings for text-guided audio effects. In *ICASSP 2025*
- 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*
- 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*
- 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*
- 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*
- 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*

TALKS

The Streamed Listening Index of Musical Experience: A new measure of algorithmically mediated music listening
SMPC 2026 (Conference Talk) July 2026

Listening in the Age of the Algorithm: Bridging Musicology and HCI

Clouds, Streams, and Ground Truths 2026 (Conference Talk)

Mar 2026

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

TEACHING & SERVICE

Student Volunteer Co-Chair — CHI 2026

2026

with Tzu-Sheng Kuo, Yuki Onishi, Esen Tütüncü

Teaching Assistant — Northwestern University

Spring 2025 & Winter 2026

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

- NIME 2026
- NeurIPS 2025, AI for Music Workshop

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