

# Annie Chu

[Website](#) // [GitHub](#)

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## TL;DR

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I am a researcher at the intersection of audio, machine learning, and human-centered design. My work focuses 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:* human-centered ML for creative audio workflows, multimodal learning, intelligent audio production, human-AI co-creation, music information retrieval, ethical & social implications of new audio technologies

## EDUCATION

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

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

## RESEARCH EXPERIENCE

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**Interactive Audio Lab – Northwestern University** Evanston, IL  
*Graduate Researcher, Advisor: Bryan Pardo* 2023.09 - Now

- Researching audio and multimodal ML models for intelligent audio production applications

**Music Cognition & Perception Lab – Northwestern University** Evanston, IL  
*Graduate Researcher, in collaboration with Dr. Dan Shanahan* 2024.09 - now

- Researching listening in the age of streaming; how users' perception and mental models of recommendation algorithms shape music discovery and listening behaviors on streaming platforms (examining algorithmic awareness, consumption patterns, etc)

**Lu Lab – Northwestern University** Evanston, IL  
*Graduate Researcher, in collaboration with Dr. Yingdan Lu* 2024.03 - 2024.10

- Developed a methodological framework for adapting audio models to address diverse social science and organizational communications research (paper in progress)

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

- Deployed and analyzed IoT sensor suite for noise pollution data collection on Sounds of New York City (SONYC) project, automating node deployment and data analysis for ML-based metric extraction and visualization

**DSP Research – Reverb Algorithms** Wellesley, MA  
*Undergraduate Researcher, Advisor: Andrew Davis* 2021 - 2022

- Designed and implemented custom reverb algorithms in Python and JUCE

## PAPERS UNDER REVIEW

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- A. Chu**, P. O'Reilly, J. Barnett, and B. Pardo. Text2fx: Harnessing clap embeddings for text-guided audio effects. In *Proceedings of 2025 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2025)* (*under review*)
- W. Agnew, J. Barnett, **A. Chu**, R. Hong, M. Feffer, R. Netzorg, E. Awumey, and S. Das. Sound check: Auditing audio datasets. In *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems (CHI 2025)* (*under review*)

## WORKSHOPS

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1. A. Chu, H. Garcia, P. O'Reilly, B. Pardo. "Text2EQ: Human-in-the-Loop Co-Creation Interface for EQ." *Accepted Late-Breaking Demo (LBD), ISMIR 2024*

## WORK EXPERIENCE

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### The Engine

Program Manager

2023

### Embr Labs

R&D, Hardware UI Engineer

2020-2021

### Weissman Foundry

Fellowship Manager, Design Technician

2019-2021

## TEACHING

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### Conference 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 of Engineering

2018 - 2019

Introduction to Sensors, Instrumentation, and Measurement

## TALKS

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### 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

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### National Merit Scholarship

National Merit Scholarship Corporation

2018-2022

### Olin Merit Tuition Scholarship

Olin College of Engineering

2018-2022

### Women in Music Information Retrieval (WiMIR) Conference Grant

ISMIR 2022

2022

## SKILLS

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- **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