

# 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 developing innovative and inclusive audio models and interfaces for creative audio applications, with a parallel emphasis on examining the cultural and social dimensions of audio technologies and their reciprocal influence on societal contexts.

*Research interests:* multimodal models & systems, intelligent audio production, human-AI co-creation, music information retrieval, accessible & inclusive audio interfaces, machine listening, ML for social good

## EDUCATION

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### Northwestern University, PhD

*Technology & Social Behavior (Dual CS + Communications)*

*Advisor: Bryan Pardo*

Evanston, IL

2023 - Present (expected 2028)

### Olin College of Engineering, B.S.

*Major: Electrical Engineering, Focus: Media Arts*

Needham, MA

2018 - 2022

## RESEARCH EXPERIENCE

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### Interactive Audio Lab – Northwestern University

*Graduate Researcher, Advisor: Bryan Pardo*

Evanston, IL

2023.09 - Now

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

### Lu Lab – Northwestern University

*Graduate Researcher, Advisor: Yingdan Lu*

Evanston, IL

2024.03 - Now

- Applying and developing a methodological framework for adapting audio models to address diverse social science and organizational communications research questions

### Music and Audio Research Lab (MARL) – New York University

*Research Assistant, SONYC*

New York, NY

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

*Undergraduate Researcher, Advisor: Andrew Davis*

Wellesley, MA

2021 - 2022

- Designed and implemented custom reverb algorithms in Python and JUCE

## PAPERS UNDER REVIEW

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1. **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*)
2. 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