

# ANNIE CHU

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## TL;DR

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My research explores how computational tools shape the ways people create and experience sound. Working at the intersection of audio, generative modeling, 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 responsible.

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

## EDUCATION

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**Northwestern University, Ph.D.** Evanston, IL  
*Technology & Social Behavior (Joint CS + Communications)* 2023 - Present (expected 2028)

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

## RESEARCH

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**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

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### **FXplorer: A Map-Based Interface for Exploratory Audio Effects Design**

Annie Chu, Jason Brent Smith, Bryan Pardo  
*NIME 2026*

### **Mix2Morph: Learning Sound Morphing from Noisy Mixes**

Annie Chu, Hugo Flores García, Oriol Nieto, Justin Salamon, Bryan Pardo, Prem Seetharaman  
*ICASSP 2026*

### **Ethics Statements in AI Music Papers: The Effective and the Ineffective**

Julia Barnett, Patrick O'Reilly, Jason Brent Smith, Annie Chu, Bryan Pardo  
*NeurIPS 2025 (AI4Music Workshop)*

### **The Rhythm In Anything: Audio-Prompted Drums Generation with Masked Language Modeling**

Patrick O'Reilly, Julia Barnett, Hugo Flores García, Annie Chu, Nathan Pruyne, Prem Seetharaman, Bryan Pardo  
*ISMIR 2025*

### **Using Co-Design to Investigate Affordances of an Expressive CS Learning Environment for Students who are BVI**

Jason Brent Smith, Annie Chu, Noel Alben, Shi Ding, Kevin Gautier, Stephen Garrett, Brian Magerko, Jason Freeman, Bryan Pardo, Stephanie Ludi, Taneisha Lee, Tom McKlin  
*ASSETS 2025*

### **Sound Check: Auditing Audio Datasets**

William Agnew, Julia Barnett, Annie Chu, Rachel Hong, Michael Feffer, Robin Netzorg, Harry H. Jiang, Ezra Awumey, Sauvik Das

AIES 2025

### **Text2FX: Harnessing CLAP Embeddings for Text-Guided Audio Effects**

Annie Chu, Patrick O'Reilly, Julia Barnett, Bryan Pardo

ICASSP 2025

### **Text2EQ: Human-in-the-Loop Co-Creation Interface for EQ**

Annie Chu, Hugo Flores García, Patrick O'Reilly, Bryan Pardo

ISMIR 2024 (*Late-Breaking Demo*)

## **TALKS**

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**The Streamed Listening Index of Musical Experience: A new measure of algorithmically mediated music listening** Upcoming / July 2026

*SMPC 2026 (Conference Talk)*

**Listening in the Age of the Algorithm: Bridging Musicology and HCI** Mar 2026

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

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

*NSF Sound Travels*

**Algo-Rhythms: How Music Recommendation Systems Keep You in Tune** May 2024

*Scientists for Migrant Learning & Education*

## **TEACHING**

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**Instructor of Record** Upcoming / Summer 2026

Northwestern University

*CS 352: Machine Perception of Music and Audio*

**Teaching Assistant** Spring 2025 & Winter 2026

Northwestern University

*CS 352: Machine Perception of Music and Audio*

**Workshop Instructor** 2024–2026

Northwestern University

*COMM ST 159: Computing Everywhere*

- Generative Modeling (Winter 2025, Winter 2026)
- Human-Computer Interfaces for Musicking (Spring 2024)

**Workshop Instructor** Sep 2024

OCMC 2024

*Faces to Soundwaves: Unpacking Organizational Communication through Computational Multimodal Analysis, with Dr. Yingdan Lu*

**Teaching Assistant** 2018 & 2019

Olin College of Engineering

*ENGR 1125: Introduction to Sensors, Instrumentation, and Measurement*

## **SERVICE**

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### **Student Volunteer Co-Chair**

- CHI 2027
- CHI 2026 (*with Tzu-Sheng Kuo, Yuki Onishi, Esen Tütüncü*)

### **Program Committee**

- NeurIPS 2025, AI for Music Workshop

### **Reviewer**

- ISMIR 2026
- NIME 2026
- NeurIPS 2025, AI for Music Workshop

## HONORS AND AWARDS

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

## SKILLS

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- **Programming Languages** - Python, MATLAB
- **Machine/Deep Learning** - PyTorch, Scikit-learn, TensorFlow
- **Audio Production** - Logic Pro X, Ableton,
- **Design Methods & Prototyping Tools** - Adobe Creative Suite (Illustrator, Photoshop, Premiere Pro, XD), Figma, Wireframing, User Journey Mapping, Participatory Design, Speculative Design, Usability Testing
- **Qualitative Research Methods** - Grounded Thematic Analysis, Interview Coding, Survey Design