

ANNIE CHU

anniejchu.github.io // anniechu@u.northwestern.edu

TL;DR

I develop deep learning-based audio models and interactive systems for creative sound design and audio production. My research aims to make these tools more expressive and controllable, supporting how people explore, shape, and refine sonic ideas.

Research interests: creative audio ML/AI, HCI, music information retrieval, computational musicology

EDUCATION

Northwestern University, Ph.D. <i>Technology & Social Behavior (Joint CS + Communications)</i>	Evanston, IL 2023–Present (expected 2028)
Olin College of Engineering, B.S. <i>Major: Electrical Engineering, Focus: Media Arts</i>	Needham, MA 2018–2022

RESEARCH

Adobe Research <i>Research Intern, Mentors: Prem Seetharaman, Oriol Nieto, Justin Salamon</i>	Summer 2025
Interactive Audio Lab @ Northwestern <i>Graduate Researcher, Advisor: Bryan Pardo</i>	Sep 2023–Present
Music Cognition & Perception Lab @ Northwestern <i>Graduate Researcher, Collab: Dan Shanahan</i>	Sep 2023–Present
Music and Audio Research Lab (MARL) – NYU <i>Research Assistant, Project: SONYC (Sounds of New York City)</i>	Summer 2022
DSP Research – Reverb Algorithms <i>Undergraduate Researcher, Advisor: Andrew Davis</i>	2021–2022

PUBLICATIONS

Smorph: Playable Sound Morphing with Diffusion Models

Annie Chu*, Hugo Flores García*, Johannes Imort, Oriol Nieto, Bryan Pardo, Jordan Rudess, Prem Seetharaman, Justin Salamon
ISMIR 2026

D-Composer: Language Modeling for Simultaneous Drum Transcription and Sound Event Decomposition

Patrick O'Reilly, Saumya Pailwan, Annie Chu, Jason Smith, Bryan Pardo
ISMIR 2026

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

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

WORKSHOPS & DEMOS

TimbreTune

Ben Cole, **Annie Chu**
ISMIR 2026 (Late-Breaking Demo)

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)

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

The Streamed Listening Index of Musical Experience: A 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

Workshop Instructor

Sound Design for Narrative Audio Yollocalli Arts Reach
October 2026

Instructor of Record

CS 352: Machine Perception of Music and Audio Northwestern University
Summer 2026

Teaching Assistant

CS 352: Machine Perception of Music and Audio Northwestern University
Spring 2025 & Winter 2026

Workshop Instructor

COMM ST 159: Computing Everywhere Northwestern University
2024–2026

- Intro to Coding with EarSketch (Fall 2026)
- Generative Modeling (Winter 2025, Winter 2026)
- Human-Computer Interfaces for Musicking (Spring 2024)

Workshop Instructor

Unpacking Organizational Communication through Computational Multimodal Analysis, co-taught with Dr. Yingdan Lu

OCMC 2024

Sep 2024

Teaching Assistant

ENGR 1125: Introduction to Sensors, Instrumentation, and Measurement

Olin College of Engineering

2018 & 2019

SERVICE

Student Volunteer Co-Chair

- CHI 2027 (with Jeongeon Park, Yimeng Wang, Shivani Kapania)
- CHI 2026 (with Tzu-Sheng Kuo, Yuki Onishi, Esen Tütüncü)

Program Committee

- NeurIPS 2025, AI for Music Workshop

Reviewer

- ICASSP 2027
- CHI 2027
- ISMIR 2026
- NIME 2026
- NeurIPS 2025, AI for Music Workshop

Book Reviewer

- IASPM Journal: Seth Long's *The Last Mixtape: Physical Media and Nostalgic Cycles* (2025)

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

EXTERNAL INVOLVEMENT

Lumpen Radio (WLPM 105.5 & HD1)

2026-now

Intern/Volunteer

Chicago, IL

CHIRP Radio (107.1 FM)

2025-2026

Associate Board Member

Chicago, IL

SKILLS

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