

PATRICK O'REILLY

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BIO

I am a second-year doctoral student in the Department of Computer Science at Northwestern University and a member of the Interactive Audio Lab. I am interested in adversarial robustness for audio interfaces, music information retrieval, and machine learning techniques for controllable audio generation.

EDUCATION

Northwestern University <i>PhD in Computer Science. GPA 3.92/4.00</i>	Sep 2020 – Present <i>Evanston, IL</i>
University of Illinois at Chicago <i>MS in Computer Science. GPA 4.00/4.00</i>	Jan 2018 – Jun 2020 <i>Chicago, IL</i>
Carleton College <i>BA in Mathematics and Music, Magna Cum Laude. GPA 3.91/4.00</i>	Sep 2013 – Jun 2017 <i>Northfield, MN</i>

RESEARCH EXPERIENCE

Northwestern University <i>Interactive Audio Lab, Adv. Bryan Pardo</i>	Sep 2020 – Present
University of Illinois at Chicago <i>Caterpillar 'CAT' Lab, Adv. Mark Hallenbeck</i>	Jun 2019 – Sep 2020
Carleton College <i>Department of Mathematics, Adv. Rob Thompson</i>	Jun 2017 – Aug 2017

PUBLICATIONS

- **Patrick O'Reilly**, Pranjali Awasthi, Aravindan Vijayaraghavan, and Bryan Pardo. Effective and Inconspicuous Over-the-Air Adversarial Examples with Adaptive Filtering. *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*. May 2022.
- Ethan Manilow, **Patrick O'Reilly**, Prem Seetharaman, and Bryan Pardo. Unsupervised Source Separation by Steering Pretrained Music Models. *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*. May 2022.

PAPERS UNDER REVIEW

- **Patrick O'Reilly**, Andreas Bugler, Keshav Bhandari, Max Morrison, and Bryan Pardo. VoiceBox: Privacy through Real-Time Adversarial Attacks with Audio-to-Audio Models. *Submitted to NeurIPS 2022*. November 2022.

TALKS

Adversarial Attacks in the Audio Domain with Adaptive Filtering <i>Bay Innovative Signal Hackers (BISH) Bash</i>	Oct 2021
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ACADEMIC AWARDS

Data Science Fellowship <i>Northwestern University</i>	2020
Cognitive Science Incoming Graduate Fellowship <i>Northwestern University</i>	2020
Phi Beta Kappa <i>Carleton College</i>	2017
Honors in Music Performance <i>Carleton College</i>	2017
Distinction in Comprehensive Exercise in Music <i>Carleton College</i>	2017

TEACHING

Teaching Assistant | *Northwestern University*

Fall 2021

- COMP_SCI 349 Machine Learning
- COMP_SCI 396 Deep Learning

Adjunct Lecturer | *Lake Forest College*

Spring 2020

- CSCI 112 Computer Science I

Teaching Assistant | *University of Illinois at Chicago*

Fall 2019

- CS 440 Software Engineering