




NOAH SCHAFFER

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Bio

I graduated with a BS/MS in Computer Science from Northwestern University. My research interests lie at the intersection of Machine Learning and Digital Signal Processing, specifically source separation, generative models for audio, and sound event detection

Education

Northwestern University

B.S./M.S. Computer Science

Sept. 2018 - June 2022

- GPA: 3.93/4.00 (Magna Cum Laude)
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Professional Experience

Associate Software Engineer

Caterpillar Inc.

July 2022 – Present

Chicago, IL

- Member of the Systems Engineering team, which focuses on exploring new technology and optimizing existing technology within CAT Digital

Research Assistant

Northwestern University - Interactive Audio Lab

Apr. 2021 – June 2022

Evanston, IL

- Conducts research in audio source separation under the supervision of Professor Bryan Pardo
- Uses Generative Adversarial Networks to improve the quality of source separation output

Software Engineering Intern – Digital Architecture

Caterpillar Inc.

June 2020 – Mar. 2021

Remote

- Built the backend framework for a telematics visualization application used by Caterpillar data scientists to detect anomalies and identify trends in truck data
 - Built a data pipeline to automatically ingest and update telematics data from an S3 bucket into a Snowflake database
 - Built a Cloudwatch dashboard for visualizing ingestion metrics from the Snowflake data pipeline
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Publications

Noah Schaffer, Boaz Cogan, Ethan Manilow, Prem Seetharaman, Max Morrison, Bryan Pardo. Music Separation Enhancement with Generative Modeling In *Proceedings of the International Society of Music Information Retrieval (ISMIR)*, 2022

Projects

Music Separation Enhancement with Generative Modeling

May 2021 – May 2022

- Created the Make it Sound Good (MSG) post-processor for source separation. Leveraged generative modeling to reconstruct missing frequencies and remove noise from output of widely-used source separation models
- Work accepted to the 2022 International Society for Music Information Retrieval (ISMIR) conference

Teaching

- Undergraduate Teaching Assistant** Spring 2021, Fall 2021
Northwestern University - CS 349 (Machine Learning) Evanston, IL
- Holds weekly office hours for students, grades weekly assignments, responds to questions on online forum
- Coding Camp Director and Instructor** Jul. 2019 – Aug. 2021
Beyond Limits Academic Program Stamford, CT
- Designed and taught an introductory coding course for 6th to 9th graders that focused on web development in HTML and CSS and computer programming in Python
 - Provided guidance to future instructors of the course, which was taught again the following school year

Awards

- McCormick School of Engineering Summer Research Grant** 2021
Northwestern University
- McCormick School of Engineering High Honors** Fall 2018, Winter 2021-Spring 2022
Northwestern University
- Given to students who receive a 4.0 GPA in a given quarter
- McCormick School of Engineering Honors** Fall 2018 - Spring 2022
Northwestern University
- Given to students who receive above a 3.75 GPA in a given quarter

Skills

Languages: *Expert:* Python, *Intermediate:* Java, C++, JavaScript, SQL, MATLAB
Machine Learning: *Expert:* PyTorch, Numpy, Scipy, Pandas, *Intermediate:* Scikit-learn
Web Development: *Intermediate:* React Native, React.js, Flask
Developer Tools: AWS (Mechanical Turk, Lambda, S3, EC2, EMR, DynamoDB, API Gateway), Snowflake

Extracurriculars

- Northwestern University Marching Band** Sept 2018 – present
Member, Percussion Captain (2021)
- Performs at every home football game as well as many University-sponsored events
- Phi Mu Alpha Sinfonia Music Fraternity** Jan 2019 – Present
Philanthropy Chair
- Responsible for organizing events where chapter choir sings for patients at local hospitals
 - Organized and managed chapter Relay for Life team