

NADA HUSSEIN

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<https://github.com/nadah09>
Cambridge, MA

EDUCATION

Massachusetts Institute of Technology

Master of Engineering in Electrical Engineering and Computer Science

Cambridge, MA

Sept 2020 – Sept 2021

Bachelor of Science in Electrical Engineering and Computer Science

Sept 2016 – June 2020

- **Master's Thesis:** Machine Audition Tools for Real-Time Music Processing and Accompaniment in Scratch, advised by Dr. Cynthia Breazeal at MIT Media Lab

WORK EXPERIENCE

Google DeepMind, PAIR (People + AI Research)

Cambridge, MA

Software Engineer III

Dec 2021 – Present

- Full stack engineer on open-source platforms including [LIT](#), an interactive machine learning model understanding tool, [Lumi](#), an AI-augmented platform for reading and understanding research papers, and [Deliberate Lab](#), a social science experiment platform for studying human-AI interactions.
- Tech lead of [AI Explorables](#), interactive articles covering latest AI research featuring bespoke D3 visualizations.
 - o [Can Large Language Models Explain Their Internal Mechanisms?](#) Best Submission, IEEE VISxAI 2024.
 - o [Do Machine Learning Models Memorize or Generalize?](#) Best Submission, IEEE VISxAI 2023.

Whisper AI

Audio Machine Learning Engineer

San Francisco, CA

Sept 2021 – Dec 2021

- Implemented digital signal processing algorithms for smart hearing aids.
- Improved audio machine learning models to modify hearing aid amplification based on environment, user preference, and power consumption considerations.

Personal Robots Group, MIT Media Lab

Cambridge, MA

Graduate Student Researcher

Sept 2020 – Sept 2021

- Designed, implemented, and piloted Scratch extensions for middle school machine audition curriculum.
- Implemented digital signal processing and machine learning backend in JavaScript for Scratch such that users can create, analyze, and generate accompaniments for music.
- Designed and implemented text rendering and dynamic plotting Scratch capabilities for visualizing waveforms, sheet music, Fourier transforms, and spectrograms based on user's music creation input.

Audible - Amazon

Software Development Engineer Intern

Cambridge, MA

June 2019 – Aug 2019

- Developed full-stack feature in Audible Android app that allows audio recording and playback.
- Consulted with users and UX designers to design, implement, and test feature's user interface.
- Developed back-end microservice using AWS Lambda, API Gateway, and S3 that interfaced with Android app to enable cloud storage and reception of audio recordings.

PUBLICATIONS

1. **Hussein, N.**, Raval, S., Reif, E., Wilson, J., Alberich, A., Nanda, N., Dixon, L., Thain, N. (2025). [Mapping LLMs with Sparse Autoencoders](#).
2. Qian, C., Liu, M., Reif, E., Simon, G., **Hussein, N.**, Clement, N., Wexler, J., Cai, C., Terry, M., Kahng, M. (2025). **LLM Adoption in Data Curation Workflows: Industry Practices and Insights**, CHI Extended Abstracts.
3. **Hussein, N.**, Ghandeharioun, A., Mullins, R., Reif, E., Wilson, J., Thain, N., Dixon, L. (2024). [Can Large Language Models Explain Their Internal Mechanisms?](#), IEEE VISxAI (Best Submission)
4. Pearce, A., Ghandeharioun, A., **Hussein, N.**, Thain, N., Wattenberg, M., Dixon, L. (2023). [Do Machine Learning Models Memorize or Generalize?](#), IEEE VISxAI (Best Submission)
5. **Hussein, N.** (2021). Machine Audition Tools for Real-Time Music Processing and Accompaniment in Scratch, MIT Media Lab.