Sara Adkins

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web & git
saraadkins.com
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research interests
AI-generated music, human-AI co-creation, machine learning for audio, ML optimization, embedded ML, digital instrument design

programming
C++, Python, C, SuperCollider, C#, TidalCycles, Assembly

frameworks
PyTorch, CUDA, JUCE, HuggingFace, vLLM, Tensorflow, AWS

software
Max MSP, Pure Data, MATLAB, Ableton Live, Logic Pro X, Pro Tools

hardware
ESP32, Raspberry Pi, Bela, Teensy, HoloLens, Leap Motion, oscilloscopes, soldering

music
classical & folk guitar, live coding, analog synthesizers, viola, mandolin

organizations
Live Code Boston, Audio Engineering Society, Phi Kappa Phi

work experience

2024-now **AI Music Technologist, Suno** — Boston, MA
Building music AI models and making music with AI models.

2023-2024 **Senior Machine Learning Engineer, Neural Magic** — Boston, MA
Developed open source software for high-performance LLM inference, focused on productionizing SOTA research in sparsification and quantization for deployment in vLLM.

2022-2023 **Generative Music and Audio Developer, Infinite Album** — Remote, USA
Built a real-time generative music engine with adaptive emotion, in beta use by over 600 Twitch streamers. Worked with artists and sound designers to create interactive, infinite versions of their songs using classical and deep machine learning methods.

2019–2021 **Machine Learning Engineer, Bose Health** — Boston, MA
Worked in an interdisciplinary research team designing ML algorithms for audio, integrating them into prototypes, and optimizing for production. Optimized an LSTM model for speech enhancement to run live on an embedded device using a neural accelerator chip. Technical lead for a research project developing generative & adaptive audio algorithms.

2018-2019 **Software & DSP Engineer, Bose Consumer Electronics** — Boston, MA
Designed signal chain for adjustable EQ feature released on NC700 headphones and developed a sensor fusion in-ear detection algorithm released on Soundsport earbuds.

education

2021–2022 **Queen Mary University of London** — London, UK
Master of Science in Sound & Music Computing, with Distinction

2014–2018 **Carnegie Mellon University** — Pittsburgh, PA
Bachelors of Computer Science & Arts in Computer Science & Music Technology
University Honors, Intercollege Honors, Sound Design Minor.

honors & awards

2021-2022 **US-UK Fulbright Postgraduate Award**
Full tuition grant and stipend to pursue music AI research and performance in the UK

2020 **Bose Key Talent Recognition Award**
Awarded by the Bose Health Director for exceptional contribution to the company

publications & presentations

2023 **Presentation, "Transformer-based Symbolic Music Generation: Fundamentals to Advanced Concepts"**
Led a 4-hour workshop at ISMIR 2023 on SOTA symbolic generation methods with hands-on examples, focusing on model architectures, datasets and style conditioning.

2023 **Publication, "LooperGP: A Loopable Sequence Model for Live Coding Performance"**
Outstanding Student Award at EvoMUSART 2023. Novel algorithm for generating loopable music phrases with a Transformer architecture. Results evaluated through a listening test.

2022 **Presentation, "Creative AI for Music Performance and Composition"**
Led a workshop at London Music Hackspace discussing high level concepts of RNNs and autoenconders, showcasing their uses in music composition and sound design.

2022 **Patent, "Audio processing using distributed machine learning model"**
Distributed audio processing between a wearable and wireless accessory device.

2020 **Patent, "Non-linear breath entrainment"**
Modulating a musical breathing stimulus based on bio-feedback in order to induce sleep.

2018 **Music Premiere, "Creating with the Machine: Algorithmic Composition for Live Performance"**
Designed three interactive generative music systems using Tensorflow and Max MSP. Led ensemble rehearsals and premiered the work in concert at the CMU School of Music.