Sophia Kaltsouni Mehdizadeh

EDUCATION

University of Colorado Boulder
Boulder, CO
Ph.D. in Creative Technology & Design, Neuroscience, Cognitive Science
Dec 2026
- ATLAS Institute, Brain Music Lab
- GPA: 4.00 / 4.00

Georgia Institute of Technology
Atlanta, GA
M.S. in Music Technology
Dec 2021
- Thesis: Using Music to Modulate Emotional Memory
- GPA: 4.00 / 4.00

University of Michigan
Ann Arbor, MI
B.S.E. in Electrical Engineering, Music Minor
Apr 2018
- Concentration: analog/digital signal processing, analog circuits, interactive musical interfaces
- GPA: 3.35 / 4.00

EMPLOYMENT

University of Colorado Boulder, ATLAS Institute
Boulder, CO
Research Assistant, Brain Music Lab
Aug 2025 – Present
Jan 2023 – Dec 2024

- Designed and conducted both lab-based and ecological music neuroscience experiments, including research in live concert environments.
- Analyzed mixed-methods human-subjects data, including survey, music/audio, behavioral, interview, and fMRI data.
- Implemented quantitative methods for individualized music stimulus selection for research participants.

Teaching Assistant
Jan – May 2025
- Mentored students on wearable technology projects, sensor integration, signal processing, and sensor mapping.

Microsoft Research
Redmond, WA
Research Intern, Brain Computer Interfaces
June – Sept 2022
- Designed a human-subjects experiment and developed interactive stimulus presentation interface using PsychoPy.
- Collected behavioral and physiological (32-ch EEG and eye tracking) data with Lab Streaming Layer (LSL).
- Conducted statistical analysis and hypothesis testing of participant responses, EEG (ERPs), and eye tracking (pupil dilation) using Python MNE and PANDAS libraries.
- Published results as a full conference paper at IEEE EMBC '23.

Georgia Institute of Technology, School of Music
Atlanta, GA
Teaching Assistant
Sept – Dec 2022
- Lectured on data analysis, hypothesis testing, and reproducibility using Python, Jupyter Notebook, PANDAS, and Scikit-Learn.
- Managed electronic/audio requirements for ~10 student-designed musical performance systems for end-of-semester concert.

Research Assistant, Brain Music Lab   Jan 2020 – June 2022
- Developed interactive stimulus (audio, text, animated visuals) presentation scripts using PsychoPy and LSL.
- Performed signal processing and statistical analysis of multimodal datasets, including physiological (EEG, fMRI, ECG, respiration) data.

Mitsubishi Electric Automotive America   Northville, MI
Audio Engineer, Advanced Development   June 2018 – Jan 2020
- Managed custom interior electrical and mechanical modification of Consumer Electronics Show demo vehicle.
- Performed ITU-T hands-free parameter tuning for infotainment production projects.
- Communicated with customers, 3rd party suppliers, and team members locally and internationally.

CONFERENCES & PUBLICATIONS

(In Progress) **Mehdizadeh, S. K.,** & Leslie, G. (2026). Neural mechanisms of music appreciation and reward in late adolescents and young adults.

(In Progress) **Mehdizadeh, S. K.,** & Leslie, G. (2026). *"Finding this song was part of becoming who I am now:"* A mixed-methods investigation of social and non-social rewarding music listening in young adults.

(SMPC Student Research Award) **Mehdizadeh, S. K.,** Ren, Y., Leslie, G., Brown, T. I. (2024). Emotional Music Modulates Episodic Memory During Recollection and Induces False Traces. *2024 Biennial Meeting of the Society for Music Perception and Cognition (SMPC '24)*, July 25-28, Banff, Alberta, CA.

Ren, Y., **Mehdizadeh, S. K.,** Leslie, G., & Brown, T. I. (2024). Affective Music During Episodic Memory Recollection Modulates Subsequent False Emotional Memory Traces: An fMRI Study. *Cognitive, Affective, & Behavioral Neuroscience, 24*(5), 912-930. https://doi.org/10.3758/s13415-024-01200-0

Mehdizadeh, S. K., Cutrell, E., Winters, R. M., Djuric, N., Cheng, Y., Tashev, I. J., & Wang, Y. T. (2023). EEG and Eye-Tracking Error-Related Responses During Predictive Text Interactions: A BCI Case Study. *45th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC '23)*, July 24-27, Sydney, Australia. https://doi.org/10.1109/EMBC40787.2023.10340598

Mehdizadeh, S. K., & Leslie, G. (2023). The Physiology of Musical Preference: A Secondary Analysis of the *Study Forrest* Dataset. *Music Perception, 40*(5), 395-409. https://doi.org/10.1525/mp.2023.40.5.395

Mehdizadeh, S. K., Ren, Y., Brown, T. I., & Leslie, G. (2022). Using Music to Modulate Human Emotional Memory. *2022 Biennial Meeting of the Society for Music Perception and Cognition (SMPC '22)*, August 4-7, Portland, OR, USA.

Roque, T. R., Rajagopalan, N., Jain, S., **Mehdizadeh, S. K.,** & Leslie, G. (2022). Multimodal, Musical Hyperscanning to Promote Empathy in HCI. *Empathy-Centric Design At Scale Workshop at CHI 2022*, April 26, 2022, Virtual Event.

Mehdizadeh, S. K., & Leslie, G. (2021). Novel Methodologies for Secondary Analyses of Physiological and Musical Preference Data. *International Conference on Music Perception and Cognition (ICMPC '16)*, July 28-31, Virtual Meeting.

EXHIBITS & PERFORMANCES

"Idiophone: A Resonant Sound Installation," as part of MediaLive: Technology as   Oct 2023 – Jan 2024
Healing, *Boulder Museum of Contemporary Art* (Boulder, Colorado).

"Global Pandemic" (An EEG Biofeedback Performance Piece), *Georgia Institute of*   Dec 2022
Technology School of Music (Atlanta, Georgia).

AWARDS

- Graduate student research grant awardee ($850): CU Boulder Graduate School, Beverly Sears Graduate Student Research Grant Program *(Mechanisms of Music Appreciation and Shared Listening)* — Feb 2025

- Graduate student seed grant awardee ($1,200): CU Boulder Center to Advance Research and Teaching in the Social Sciences *(Mechanisms of Music Appreciation and Shared Listening)* — Dec 2024

- Student research grant awardee ($800): CU Boulder Institute of Cognitive Science *(Mechanisms of Music Appreciation and Shared Listening)* — Oct 2024

- Student research award winner: Society for Music Perception & Cognition *(Emotional Music Modulates Episodic Memory During Recollection and Induces False Traces)* — July 2024

- Seed grant awardee (20 hours of MRI scanning): GSU/Georgia Tech Center for Advanced Brain Imaging *(Using Music to Modulate Emotional Memory)* — Apr 2021

- Winner of 2021 Moog Music Hackathon *(Magnebacus)* — Feb 2021

PROFESSIONAL DEVELOPMENT

NextProf Nexus, UC Berkeley — Sept 2025
- Navigating the academic job market and succeeding as early career faculty.

NeuroHackademy, UW eScience Institute — July 2024
- Best practices for analysis and reproducibility in human neuroscience.

VOLUNTEER & LEADERSHIP EXPERIENCE

University of Colorado Boulder, Institute of Cognitive Science — Boulder, CO
Grants Committee Representative — Jan 2024 – present
- Review student research and travel grant applications as part of a multidisciplinary panel.

University of Colorado Boulder, Brain Music Lab — Boulder, CO
Independent Study Mentor — Oct 2024 – May 2025
- Mentored undergraduate student in design and manufacturing of a multi-user human-computer interface for large-scale, human-subjects data collection.

International Science & Engineering Fair — Boulder, CO
Science Research Mentor — Sept 2023 – Feb 2024
- Mentored local high school student on science research fair project.
- Worked 1-on-1 teaching experimental design, research ethics, data collection, and analysis.

Women in Music Technology @ Georgia Tech — Atlanta, GA
Treasurer & Chartering Leader — Aug 2021 – Dec 2022
- Create a community for women to network and find support as a minority in the academic and professional field of Music Technology.
- Acquire funding and manage organization budget and spending.

Michigan Project Music — Ann Arbor, MI
Vice President — Apr 2016 – Apr 2018
- Led a multidisciplinary team of students through design and manufacturing of experimental musical instrument projects.
- Organized project demos and concerts as part of University outreach events.

SKILLS

Computer Applications
- MATLAB, C/C++, Python, JUCE, Visual Studio, Minitab, SPSS, R, Bash
- Ableton, Logic, Reaper, MaxMSP, ChucK
- Microsoft Office (Word, Excel, PowerPoint)

Electronic Test/Measurement Equipment
- Digital Multimeter, Oscilloscope, Function Generator

Languages
- Greek (fluent), Spanish (intermediate)

Research & Experimental Design
- EEG, fMRI, ECG, PPG, Respiration, EMG, Temperature, GSR, Eye Tracking
- PsychoPy, Lab Streaming Layer (LSL), MNE, AFNI, FSL, EEG Lab, SPM12, OpenBCI

Design, Fabrication & Prototyping
- Basic shop tools, Mill, Lathe, Laser Cutting, 3D Printing, Soldering, Arduino, Raspberry Pi
- PCB design (Eagle, Altium), CAD (SolidWorks, AutoCAD)