Sophia Kaltsouni Mehdizadeh

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EDUCATION

University of Colorado Boulder — Boulder, CO
Ph.D. in Creative Technology & Design, Neuroscience, Cognitive Science — May 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
- GPA: 3.35 / 4.00
- Concentration: analog/digital signal processing, analog circuits, interactive musical interfaces

PROFESSIONAL EXPERIENCE

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 EMBC ’23.

Georgia Institute of Technology, School of Music — Atlanta, GA
Graduate Research Assistant, Brain Music Lab — Jan 2020 – June 2022
- Developed interactive stimulus (audio, text, animated visuals) presentation scripts using PsychoPy and LSL.
- Designed and conducted human-subjects research to study interactions of music, mood, and memory.
- 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 review) Ren, Y., **Mehdizadeh, S. K.**, Brown, T. I., & Leslie, G. (2023). Affective Music During Episodic Memory Recollection Modulates Subsequent False Emotional Memory Traces: An fMRI Study. *Cognitive, Affective, & Behavioral Neuroscience*.

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 of 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.

EXHIBITIONS & PERFORMANCES

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

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

AWARDS

- Center for Advanced Brain Imaging MRI seed grant recipient (*Using Music to Modulate Emotional Memory*) Apr 2021
- Winner of 2021 Moog Music Hackathon (*Magnebacus*) Feb 2021

SKILLS

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

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

Languages
- Fluent in Greek, moderate knowledge of Spanish

Research & Experimental Design
- ECG, PPG, respiration, EMG, EEG, temperature, GSR, fMRI, eye tracking
- PsychoPy, Lab streaming layer (LSL), MNE, AFNI, 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)