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
- Concentration: analog/digital signal processing, analog circuits, interactive musical interfaces
- GPA: 3.35 / 4.00

PROFESSIONAL EXPERIENCE

University of Colorado Boulder   Boulder, CO
Research Assistant   Jan 2023 – present
- Designed human-subjects research protocols to study music appreciation in social and non-social contexts.
- Conducted literature reviews of 60+ papers in psychology, cognitive neuroscience, and music cognition.

Georgia Institute of Technology, School of Music   Atlanta, GA
Graduate 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.

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
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

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*. 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.

EXHIBITIONS & 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

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

- Seed grant awardee: Center for Advanced Brain Imaging (*Using Music to*   Apr 2021
Modulate Emotional Memory)

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

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.

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.

Humane Society of Huron Valley Ann Arbor, MI
Foster Volunteer, Dog Walker June 2018 – Oct 2019
- Experience working with reactive/fearful dogs.
- Dog playgroup handler certified.
- 500+ total volunteer hours.

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.

Michigan Science Olympiad Ann Arbor, MI
Event Supervisor Mar 2015, Feb 2018
- Ran middle school bottle rocket event at regional competition.
- Ran high school Mousetrap Vehicle competition for first University of Michigan Science Olympiad invitational.
- Led teams of supporting volunteers to streamline specification checking and scoring process.

SKILLS

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

Research & Experimental Design
- ECG, PPG, respiration, EMG, EEG, temperature, GSR, fMRI, eye tracking
- PsychoPy, Lab Streaming Layer (LSL), MNE, AFNI, EEG Lab, SPM12, OpenBCI

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

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

Languages
- Greek (fluent), Spanish (intermediate)