

EUN JI OH

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OBJECTIVE

Seeking a PhD program in the field of Music Cognition and Neuroscience to leverage my expertise in musicology, psychology, and interdisciplinary research. Aiming to contribute to innovative projects at the intersection of communication and electrophysiology, and practical problem-solving, such as emotional well-being and intervention.


EDUCATION

- **Korea Advanced Institute of Science and Technology (KAIST)** Feb 2022 - Feb 2024
M.S. in Culture and Technology (Concentration in Music Cognition) Daejeon, Republic of Korea
 - Thesis: *Shared empathic process in music and social contexts: Exploring empathic accuracy and physiological responses across modalities and valence*
 - Advisor: Prof. Kyung Myun Lee
 - GPA: 3.88/4.3
- **Seoul National University** Mar 2017 - Feb 2022
B.M. in Musicology (Minor in Psychology) Seoul, Republic of Korea
Summa Cum Laude
 - GPA: 4.07/4.3
- **Seoul Arts High School** Mar 2013 - Feb 2016
Major in Music Composition Seoul, Republic of Korea

EXPERIENCE

- **KAIST, Center for Digital Humanities and Computational Social Sciences** May 2024 - Feb 2025
Research Associate in Music and Brain Lab Daejeon, Republic of Korea
 - Organizing a live music performance with Daejeon Arts Center by implementing **real-time EEG analysis**.
 - Conducted analysis on the relation between **music acoustic features, emotional responses of listeners, and emotional expressions of composers**.
- **KAIST, Graduate School of Culture Technology** Feb 2022 - Feb 2024
Research Assistant in Music and Brain Lab Daejeon, Republic of Korea
 - Examined **shared emotional processes in music and social contexts** based on performers-listeners interaction and dyadic communication as a master thesis.
 - Presented review of **theta brain activity as a neural indicator of musical pleasure** at ICMPC 2023 conference.
 - Participated in collaborative research in musicology, music cognition, and music informational retrieval to **evaluate AI-generated music based on human music cognition**.
- **KAIST** Jan 2021 - Feb 2022
Student Intern in Music and Brain Lab Daejeon, Republic of Korea
 - Conducted online music training program on preschool children to examine the effectiveness of music training on linguistic skills.
 - Reviewed and published the paper about music interventions to enhance children's linguistic skills.
- **Seoul National University** Jan 2019 - Feb 2019
Student Intern in Music and Audio Research Group (MARG) Seoul, Republic of Korea
 - Collected and pre-processed data to make a training dataset for the AI singing voice synthesis model.

PROJECTS

- **[X-Space] A live lab performance with Daejeon Arts Center** June 2024 - Sep 2024
Tools: EMOTIV EPOC+, EEG, inter-brain synchronization, phase locking value, Fourier fast transform, Python 
 - Directing the live lab performance, selecting EEG indicators and music.
 - Designed a system to analyze inter-brain synchronization between two performers and frequency ranges corresponding to the music's BPM using real-time EEG data.
 - Facilitated collaboration between lab members, visual production, performers, and Daejeon Arts Center, effectively communicating complex scientific concepts to a broad audience through the performance.
- **[Master Thesis] Empathic accuracy between music and socio-emotional situations** Mar 2023 - Jan 2024
Tools: continuous emotion ratings, Neuroscan, ECG, linear mixed effects model, Psychopy, Python, MATLAB, R

- Investigated real-time emotion inference accuracy across different contexts (music, social) and modalities (audio, visual, both). Studied the relationship between empathic accuracy in social situations and music performances.
 - Found a link between emotion inference in music and social situations only for anger-audiovisual stimuli.
 - Identified RMS as a key acoustic feature for interpreting composers' emotions in audio-only conditions.
 - Presented findings at KSMPC, SMPC, and ISMIR 2024; journal paper in preparation.
- **[Musical Flow] Electrophysiological index to measure musical flow during music listening** Feb 2023 -
Tools: exploratory factor analysis, R, EEG, Neuroscan, STIM
 - Published review paper about the definition of musical flow during music listening and the methodology to quantify musical flow at behavioral, physiological, and neuroscientific levels.
 - Developing a scale to assess musical flow during music listening by using exploratory factor analysis.
 - Assisted EEG experiments to investigate the neural index of musical flow.
- **[Music and AI] Evaluation of AI-generated music based on human music cognition** Mar 2022 - Dec 2023
Tools: music, Logic Pro
 - Selected Western classical music pieces from various eras and styles, and prepared audio samples for a continuation task, segmenting each piece at the 30-second mark for the AI music generation continuation task.
 - Assisted in designing and conducting an online experiment where participants listened to AI-generated music and evaluated their behavioral responses.
 - Participated in discussions on interpreting experimental results and findings.
- **[Music and Language] Online music training for preschoolers to develop linguistic abilities** Jan 2021 - Feb 2022
Tools: BASA-EL, K-WISC-V, KMAT, zoom, analysis of variance, R
 - Conducted a music training program for 7-year-old Korean children, assessing language and cognitive abilities before and after the program.
 - Observed an improvement in overall language abilities, though the lack of a control group limited the results if these changes were the direct effects of the music program. Presented the results as a poster at ICMPC 2024.
 - Contributed to creating a music education program tailored to the linguistic features of the Korean language.
 - Published a review paper on the effects of music programs on language development in preschool children.

PUBLICATIONS

- Oh, E.J., Park, J., Choi, Y., and Lee, K.M.*** (2023). **Understanding musical flow during music listening based on empirical observations.** *Music Theory Forum*, Vol. 30, Issue 2, pp. 101-140.
- Oh, E.J., and Lee, K.M.*** (2020). **Possibility of music training to promote Korean language development.** *Journal of Music and Theory*, Vol. 35, Issue 1, pp. 79-107.

CONFERENCE

• ORAL PRESENTATIONS

Oh, E.J., Kim, H., and Lee, K.M.* (2024, November). *Which audio features can predict the dynamic musical emotions of both composers and listeners?*. 25th International Society for Music Information Retrieval Conference (ISMIR), San Francisco, CA (accepted).

Oh, E.J., and Lee, K.M.* (2024, July). *Intermodal Analysis of Emotion Inference: Examining Shared Processes in Music and Social Contexts*. Conference of Society for Music Perception and Cognition (SMPC), Banff, AB.

• POSTER PRESENTATIONS

Oh, E.J., and Lee, K.M.* (2024, March). *Emotion inference during music and social situations through empathic accuracy*. 67th Conference of Korean Society for Music Perception and Cognition (KSMPC), Seoul.

Oh, E.J., and Lee, K.M.* (2023, August). *Musical pleasure revealed by electroencephalography theta oscillations: A systematic review*. 17th International Conference on Music Perception and Cognition (ICMPC), Tokyo.

Oh, E.J., Kim, Y., and Lee, K.M.* (2023, August). *Effect of online music class on linguistic, cognitive, and musical abilities in Korean preschool children: A pilot study*. 17th International Conference on Music Perception and Cognition (ICMPC), Tokyo.

Oh, E.J., Kim, Y., and Lee, K.M.* (2023, February). *The effect of online music program on the reading skills of children*. 66th Conference of Korean Society for Music Perception and Cognition (KSMPC), Seoul.

Oh, E.J., Park, J., Park, S., Kim, H., Kang, S., and Lee, K.M.* (2022, November). *Music genres and characteristics suitable for the image of business type*. Conference of Korean Society for Noise and Vibration Engineering (KSNVE), Jeju.

Oh, E.J., and Lee, K.M.* (2020, November). *Review of rhythm programs for the enhancement of literacy skills*. 64th Conference of Korean Society for Music Perception and Cognition (KSMPC), online.

• REFEREED PRESENTATIONS

- Park, S., Kang, S., Kim, H., Park, E., **Oh, E.J.**, and Lee, K.M.* (2024, March). *Correlations between music experience and EEG responses*. 67th Conference of Korean Society for Music Perception and Cognition (KSMPC), Seoul.
- Kim, H., Choi, E., **Oh, E.J.**, Nam, J., and Lee, K.M.* (2024, March). *Evaluation of AI-generated Music through Online Surveys*. 67th Conference of Korean Society for Music Perception and Cognition (KSMPC), Seoul.
- Kim, H., **Oh, E.J.**, Park, J., Chung, Y., Nam, J., and Lee, K.M.* (2023, August). *A Comparison of Melody Interpolation Performed by Human and Artificial Intelligence Based on Human Similarity Judgments*. 17th International Conference on Music Perception and Cognition (ICMPC), Tokyo.
- Kang, S., Park, S., Kim, H., **Oh, E.J.**, Park, J., and Lee, K.M.* (2023, February). *Emotional responses to music: Quantitative EEG study*. 66th Conference of Korean Society for Music Perception and Cognition (KSMPC), Seoul.
- Kim, H., **Oh, E.J.**, Chung, Y., Nam, J., and Lee, K.M.* (2023, February). *A study of melody similarity of AI composition with cognitive behavioral experiment*. 66th Conference of Korean Society for Music Perception and Cognition (KSMPC), Seoul.

SKILLS

- **Programming Languages:** Python (*Librosa, OpenCV*), MATLAB
- **Mathematical & Statistical Tools:** R
- **Experiment:** Psychopy, Compumedics Neuroscan CURRY 8
- **Music:** Logic Pro, Finale

HONORS AND AWARDS

- **Grant for In-Person Registration (\$650)** Nov 2024
International Society for Music Information Retrieval (ISMIR)
 - The 25th ISMIR Conference grant for in-person registration
- **Best Poster Award (1st)** Mar 2024
Korean Society for Music Perception and Cognition (KSMPC)
 - 1st Prize Best Poster Award at the 67th KSMPC Conference
- **Support Scholarship (₩35,236,000)** Spring 2022 - Fall 2023
KAIST
 - National support for admission fee (Graduate)
- **Scholarship (₩6,397,840)** Spring 2022 - Fall 2023
KAIST
 - National support for master course scholarship
- **Summa Cum Laude** Feb 2022
Seoul National University
 - Honors Degree
- **Work-Study Scholarship 1 (₩4,060,000)** Spring 2019 - Fall 2019
Seoul National University
 - Working in an office of composition major (40 hour/month)
- **Merit-based Scholarship(60%) (₩2,349,600)** Spring 2019
Seoul National University
 - 60% support for tuition fees for those with excellent grades
- **Seongnam City Foundation-College Student Scholarship (₩3,916,000)** Spring 2017
Seongnam City Foundation
 - For citizens GPA higher than 4.0/4.5

EXTRACURRICULAR ACTIVITIES

- **Mindfulness-Based Cognitive Therapy for Life (MBCT-L), KAIST** Nov 2023 - Feb 2024
- **Peer Counselor of Hug Program, KAIST** Mar 2023 - Feb 2024
- **TA of Da Vinci Point Program, KAIST** (for encouraging KAIST members in art events) Fall 2022
- **Executive Committee of YS, Photography Student Club, Seoul National University** Spring 2018 - Fall 2018

MUSICAL ACTIVITIES

- Free-lance Screen Operator (Seoul Arts Center, Gangnam Symphony Orchestra, Sumi Jo Concert) 2020 - 2023
- Free-lance Score Reader (Seoul Arts Center) 2020
- Project Team Jeje Musical <The Last Five Years> Music Assistant Director and Piano Performer 2018
- The 13th Jecheon International Music & Film Academy 2018
- The 13th KT&G Sangsang Madang Music in Frame (music video shoot) 2017