

Dajin Lee, Ph. D Candidate

Curriculum Vitae

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Current Position and Contact Information

Position	Ph. D. Candidate Department of Convergence IT Engineering Pohang University of Science and Technology (POSTECH)
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Laboratory	https://interaction.postech.ac.kr/



Research Interests

Audio-Tactile Perception & Rendering

- Spatial Audio-Tactile Alignment (TVCG'25)

Haptic Perception & Rendering

- Magnitude Estimation Across Upper Body (TOH'24a)
- Heart Activity Modulation (UIST'24)
- Body Penetrating Phantom Sensation on Feet (WHC'21)

Human-Computer Interaction

- Embodied and Tangible Learning for Children (IJHCS'25)
- Haptic Exhibit for Learning Physics (TOH'24b)
- Authoring Tool for Vibrotactile Warning (Eurohaptics'24)

Education

2021.03 - Present	Ph. D. Candidate, Interaction Laboratory Computer Science and Engineering Pohang University of Science and Technology (POSTECH) Advisor: Prof. Seungmoon Choi
2013.03 - 2020.02	Bachelor of Science Industrial Management and Engineering Pohang University of Science and Technology (POSTECH) Advisor: Prof. Chihyuk Jun

Publications

International Journal Articles

- [J1] **Dajin Lee**, Gyeore Yun, and Seungmoon Choi, "Effects of Contact Force on Vibrotactile Perceived Intensity Across the Upper Body," *IEEE Transactions on Haptics*, 2024 (Also presented in the IEEE Haptics Symposium 2024; **Candidate for the Best Paper Award**).
[Paper](#), [Preview Video](#)
- [J2] **Dajin Lee**, Daehyeon Nam, Jinhyuk Yoon, Dukchan Yoon, Seokwon Jeong, Keehoon Kim, and Seungmoon Choi, "A Comparative Study of Physical and Haptic Exhibits in an Informal Learning Environment," *IEEE Transactions on Haptics*, 2024.
[Paper](#), [Demo Video](#)
- [J3] **Dajin Lee** and Seungmoon Choi, "Perceptual Alignment of Spatial Auditory and Tactile Stimuli for Effective Directional Cueing," *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 2025 (Accepted; Also presented in the 2025 *IEEE Conference on Virtual Reality and 3D User Interfaces*).
- [J4] **Dajin Lee**, Daehyeon Nam, and Seungmoon Choi, "Augmenting Outdated Museum Exhibits with Embodied and Tangible Interactions for Prolonged Use and Learning Enhancement," *International Journal of Human-Computer Studies (IJHCS)*, 2025.

International Conference Papers

- [C1] **Dajin Lee**, Seungjae Oh, Seungmoon Choi, and Bum-Jae You, "Vibrotactile Metaphor of Physical Interaction Using Body-Penetrating Phantom Sensations: Stepping on a Virtual Object," *IEEE World Haptics Conference (WHC)*, 2021.
[Paper](#), [Presentation Video](#)
- [C2] **Dajin Lee**, Jaejun Park, Jeonggoo Kang, Taekun Yun, Dong-Chul Park, and Seungmoon Choi, "Participatory Design for In-Vehicle Vibrotactile Warnings on Driver's Seat," *EuroHaptics*, 2024.
[Paper](#), [Presentation Video](#), [Demo Video](#)
- [C3] Andreia Valente, **Dajin Lee**, Seungmoon Choi, Mark Billingham, and Augusto Esteves, "Modulating Heart Activity and Task Performance Using Haptic Heartbeat Feedback: A Study Across Four Body Placements," *ACM Symposium on User Interface Software and Technology (UIST)*, 2024.
[Paper](#), [Presentation Video](#)

Domestic Conference Papers (Republic of Korea)

- [DC1] Dong Yeong Jeong, Sung H. Han, Seungmoon Choi, Mingyu Lee, Haewoo Kang, Sangyoon Han, Gyeore Yun, Hyo Seung Lee, Jiwan Lee, and **Dajin Lee**, "Motion and Haptic Effects Classification of a 4D Cinema Seat," *Ergonomics Society of Korea*, 2019.
- [DC2] Daehyeon Nam, **Dajin Lee**, and Seungmoon Choi, "Improving the Design of Science Museum Exhibits Through Digital Augmentation," *Korea Software Congress (KSC)*, 2022.

- [DC3] **Dajin Lee**, Gyeore Yun, and Seungmoon Choi, "Effects of Contact Force on Vibrotactile Perceived Intensity Across Upper Body," *Korea Haptics Conference (KHC)*, 2023.
- [DC4] **Dajin Lee** and Seungmoon Choi, "Differential Thresholds of Azimuth between Auditory and Tactile Stimuli," *Korea Haptics Conference (KHC)*, 2024 (**Best Paper Award**).

Posters & Demonstrations

- [P1] **Dajin Lee**, Daehyeon Nam, Seokwon Jeong, Keehoon Kim, and Seungmoon Choi, "A Comparative Study of Physical and Haptic Exhibits in Informal Learning Environment," *IEEE World Haptics Conference (WHC)*, 2023 (Work in Progress).
- [D1] **Dajin Lee**, Jaejun Park, Jeonggoo Kang, Taekun Yun, Dong-Chul Park, and Seungmoon Choi, "Participatory Design for In-Vehicle Vibrotactile Warnings on Driver's Seat," *EuroHaptics*, 2024.
[Paper](#), [Presentation Video](#), [Demo Video](#)

Honors & Awards

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| 2024 | Differential Thresholds of Azimuth between Auditory and Tactile Stimuli
Best Paper Award (2nd place)
Korea Haptics Conference |
| 2024 | Effects of Contact Force on Vibrotactile Perceived Intensity Across the Upper Body
Best Paper Award (Finalist)
IEEE Haptics Symposium |
| 2023 | HapCinema: Multimedia Haptic Rendering Using In-Vehicle Haptic Interfaces
Hyundai Student Innovation Challenge (Participation Award)
Korea Haptics Conference (KHC) |
| 2019 | Homepage for Stary Cats at POSTECH
POSTECH Hackathon (Popularity Award) |
| 2018 | StairX: Automatic Stair Recognition and Map Service Using User's Walking Data
POSTECH Hackathon (2nd Place) |
| 2018 | Prediction of Swell Wave Events Using Deep Learning Analysis of Time Series Data
Student Innovation Challenge (2nd Place)
Korean Institute of Industrial Engineers (KIIE) |

Research Experiences

Research Internships

- 2017.12 - 2018.02 **Ship Routing Problem with Split Delivery and Time Windows**
Logistics Laboratory, Industrial Management Engineering Department
Pohang University of Science and Technology (POSTECH)
Advisor: Prof. Byung-In Kim
- 2019.01 - 2019.06
2020.03 - 2020.08 **Motion and Haptic Effects Classification of a 4D Cinema Seat**
Interaction Laboratory, Computer Science and Engineering Department
Pohang University of Science and Technology (POSTECH)
Advisor: Prof. Seungmoon Choi
- 2019.06 - 2019.08 **3D Graphical User Interface in Virtual Reality**
Center for Intelligent & Interactive Robotics
Korea Institute of Science and Technology (KIST)
Advisor: Dr. Jung-Min Park
- 2020.09 - 2020.12 **Laboratory Rotation**
Medical Assistant Robotics and Cognitive Haptics (MARCH) Laboratory,
Mechanical Engineering
Pohang University of Science and Technology (POSTECH)
Advisor: Prof. Keehoon Kim

Fund Projects

- 2019.01 - 2019.06 **Automatic Authoring of Physical and Perceptual/Affective Motion Effects for Virtual Reality**
Samsung Research Funding & Incubation Center for Future Technology
- 2021.01 - 2022.12 **Development and Validation of Real-Virtual Blended Exhibits for In-Depth Embodied Learning of Scientific Principles (Team Leader)**
Support Program for Reinforcement of Science Culture Exhibition Service, National Research Foundation (NRF)
- 2022.7 - 2023.6 **Research on Function Advancement to Improve the Marketability of Vibration Seat (Team Leader)**
NGV (Hyundai Automobile Company)
- 2022.9 - Present **Semantic Sound-to-Haptic Automatic Conversion: Metaverse, Full-body Haptic Effects, and Accessibility**
Mid-Career Researcher Program, National Research Foundation (NRF)
- 2023.9 - Present **Development of Nonwearable Visual-Tactile Digital Twin Platform Technology to Provide Various Interpretations of Digital Objects**
Institute for Information and Communication Technology Promotion (IITP)

Teaching Experiences

2019.09 - 2021.09	Introduction to Statistics for Data Science (Teaching Assistant) POSTECH & POSCO Group University
2024.09 - Present	Introductions to Haptics (Teaching Assistant) Pohang University of Science and Technology (POSTECH)

Academic Service

Reviewer	Eurohaptics (2024)
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Skills

Haptic Interaction	Tactile rendering/perception, Embodied learning, Authoring tool
Multisensory Perception	Spatial audio-tactile perception, Visuo-haptic illusion
Programming	C/C++/C#, MATLAB, Python, R
Statistics	Statistical analysis, esign of experiment