

JINWOOK KIM

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RESEARCH INTEREST

Human-Computer Interaction

- Virtual / Augmented Reality (VR/AR)
- Spatial Interaction (Exploration, Manipulation, Multisensory Integration, Telepresence)

Cognition & Bio-sensor

- EEG (Event-related potential (ERP)), Eye tracking, Behavioral Analysis
- Brain-Computer Interface: Steady state visual evoked potential (SSVEP)

Research Goal: Augment human performance, perception, and immersive experience by using multimodal I/O in VR & AR

EDUCATION

Ph.D. KAIST, Graduate School of Culture Technology 2021-25

Thesis: Tailoring and Blending Functions on Natural Input based Hybrid Interaction for Enhanced Practicality in Controller-Free Extended Reality Environment

Advisor: Visual Cognition Lab, Prof. Jeongmi Lee

M.S. KAIST, Graduate School of Culture Technology 2019-21

Thesis: Multisensory Pseudo-Haptic Feedback for Weight Perception of Virtual Objects

Advisor: Visual Cognition Lab, Prof. Jeongmi Lee

B.S. Chungnam National University, Computer Science & Engineering 2014-18

Global SW Track member / CNU Eng. Student of the Year (Dean award)

PROFESSIONAL EXPERIENCE

Institute of Information Electronics, KAIST, Daejeon, Korea 2025.09 -

Postdoctoral Fellow (Advisor: Prof. Sangho Yoon)

- Alternative Military Service (1-Year after PhD) & Funded with KAIST Jang Young Sil Fellow Program (Postdoctoral Researcher Track)
- Conduct multimodal (Gaze, Hand) XR interaction design research and mentor master's and doctoral students at HCI Tech Lab, GSCT, KAIST

XI Research Group, Aarhus University, Denmark 2024.04 to 2024.07

Visiting Researcher (Advisor: Prof. Ken Pfeuffer)

- Conducted a study about designing and evaluating a novel gaze-based interaction (Gaze + Pinch) technique in XR

- ibs Center for Cognition & Sociality**, Daejeon, Korea 2020.01 to 2022.12
Research Assistant
- Learned basic EEG data analysis and conducted ERP experiment (e.g., P3, SSVEP) in virtual reality using dry electrodes
 - Conducted an experiment that probe an effect of multisensory vection on VR motion sickness with behavioral and EEG data analysis (e.g., Decoding, MVPA)
- ZER01NE**, Seoul, Korea 2021.05 to 2022.12
Researcher/Creator
- Creator supported program funded by HYUNDAI Motors
 - Developed Automatic Sonata (Future Mobility UX, 2021) and Holobot (XR Telepresence robot, 2022) and exhibit at ZER01NE Day 2021 ([link](#)) and 2022 ([link](#))
- Companoid Labs**, Suwon, Korea 2018.06 to 2018.12
Researcher
- Develop a social robot (Petbe) and published paper at HRI2020
 - Analyzed ‘Doctor Diary’ application user data for UX redesign

STUDY ABROAD

- Purdue University**, USA 2017.01 to 2017.02
CNU Global SW Capstone Project
- Conducted research about ‘Group Membership and Authentication’ (Intel)
 - Attend ‘Design & Innovation’, ‘Data mining & Machine Learning’ lecture
- Lakehead University**, Canada 2016.09 to 2016.12
CNU Global Talent Program (Exchange Student)
- Northern Arizona University**, USA 2016.01
CNU Honors Program (Short-term visiting student)

SELECTED AWARDS & SCHOLARSHIP

- KAIST Jang Young Sil Program** 2025.04
 Postdoctoral Researcher Track (\$35K)
- Young-Han Kim Global Leader Scholarship** 2024.07
 KAIST Scholarship (\$2.8K)
- IEEE VR Conference Best Paper** 2024.03
 Best Paper Award
- ACM CHI Play Student Game Design Competition** 2022.11
 Audience Choice Award

NCSOFT Ph.D. Scholarship NC-KAIST Scholarship (\$7K)	2021.06
NEXON Idea Challenge 1st Award (\$7K)	2017.08
2016 5th China SW Cup 2 nd Prize	2016.08
2016 Microsoft Imagine Cup TOP 7 – Semi Finalist	2016.03

GRANTS

KAIST Jang Young Sil Fellow Program (A0801026001) Development of XR Hybrid Interaction for Expanding Interoperability between 2D-3D Interfaces and Platforms (PI, \$35K)	2025
Hyundai ZER01NE Day Project 2022 Holobot: Hologram based Next Generation XR Social Interface Robot (PI, over \$35K)	2022
Hyundai ZER01NE Day Project 2021 Automatic Sonata: Blurring the Boundary of Mobility (Co-PI, over \$35K)	2021
National R&D Real Challenge Program, KIRD (N01200918) Enhancing Performance during AR-VR Remote Collaboration by Reducing Cognitive Load via Attentional Cue (PI, \$12.6K)	2020

PUBLICATIONS

(* co-first authors, these authors contributed equally to this work)

Under Review & Conditionally Accepted Papers

4 Paper plan to submit @ISMAR2026 (1 First Author, 2 Co-author, 1 Co-Corresponding Author)

Kim, J., Lee, C., Surale, H. B., Kang, S., Yoon, S.H., Lee, J., & Pfeuffer, K. (2026). AreaCatcher: Microgesture Based Quasi-mode Area Selection for Gaze+Pinch. *IEEE Transactions on Visualization and Computer Graphics*. (Under Review).

Kim S., **Kim, J.**, Choi, S., Baeck, M., Yoon, B., Grønbaek, J. E. S., Shin, J., & Woo, W. (2026). Sharing Augmented Reality Furniture across Heterogeneous Spaces: Asymmetric Effects of Unmatched Area Visualization. *Virtual Reality*. (Under Review).

Kim, M., **Kim, J.**, Pfeuffer, K., & Yoon, S.H. (2026). Align-to-Scale: Mode Switching Technique for Unimanual 3D Object Manipulation with Gaze-Hand-Object Alignment in Extended Reality. In *Proceedings of the 2025 Symposium on Eye Tracking Research and Applications*. (R&R)

Peer-reviewed Conference & Journal Papers

- [1] Kang, S., Yang, S., Song, H., Yoon, B., **Kim, J.**, Kim, K., & Woo, W. (2026). Streamlined Facial Data Collection based on Utterance and Emotional Data for Human-to-Avatar Reconstruction in Conversational Contexts. *IEEE Transactions on Visualization and Computer Graphics*.
- [2] Lee, J., **Kim, J.**, & Lee, J. (2025). Facilitating the Exploration of Linearly Aligned Objects in Controller-Free 3D Environment with Gaze and Microgestures. *IEEE Transactions on Visualization and Computer Graphics*. (**Honorable Mention @ IEEE ISMAR2025**) ([link](#))
- [3] Wagner, U., **Kim, J.**, Wu, Z., Zhou, Q., Romero, M., Iop, A., Feuchtner, T., Pfeuffer, K. (2025). Multimodal Pen and Gaze Interaction Techniques for Shape Point Translation. In *2025 IEEE International Symposium on Mixed and Augmented Reality (ISMAR)*. IEEE. ([link](#))
- [4] **Kim, J.**, Park, S., Zhou, Q., Gonzalez-Franco, M., Lee, J., & Pfeuffer, K. (2025). PinchCatcher: Enabling Multi-selection for Gaze+Pinch. In *Proceedings of the 2025 CHI conference on human factors in computing systems* (pp. 1-16). ([link](#))
- [5] Lee, C.*, **Kim, J.***, Yi, H., & Lee, W. (2024) Viewer2Explorer: Designing a Map Interface for Spatial Navigation in Linear 360 Exhibition Video. In *Proceedings of the 2024 CHI conference on human factors in computing systems* (pp. 1-15). ([link](#))
- [6] Jung, S., **Kim, J.**, & Lee, J. (2024). The Differential Effects of Multisensory Attentional Cues on Task Performance in VR Depending on the Level of Cognitive Load and Cognitive Capacity. *IEEE Transactions on Visualization and Computer Graphics*. (**Best Paper Award @ IEEE VR2024**) ([link](#))
- [7] Jang, H.*, **Kim, J.***, & Lee, J., (2024). Effects of Congruent Multisensory Feedback on the Perception and Performance of Virtual Reality Hand-Retargeted Interaction. *IEEE Access*. ([link](#))
- [8] Lee, S., **Kim, J.**, Lee, J., (2023). Effects of Reward Schedule and Avatar Visibility on Joint Agency During VR Collaboration Task. *IEEE Transactions on Visualization and Computer Graphics*. (**Nominated for Best Journal Paper @ ISMAR2023**) ([link](#))
- [9] Kim, D., Kim, S., Shin, J. E., Yoon, B., **Kim, J.**, Lee, J., & Woo, W. (2023). The effects of spatial configuration on relative translation gain thresholds in redirected walking. *Virtual Reality*, 27(2), 1233-1250. ([link](#))
- [10] **Kim, J.**, Kim, D., Jang, H., & Lee, J. (2023). Exploration of the Virtual Reality Teleportation Methods using Hand-tracking, Eye-tracking, and EEG. *International Journal of Human-Computer Interaction*, 1-14. ([link](#))
- [11] **Kim, J.**, Kim, S., & Lee, J. (2022). The Effect of Multisensory Pseudo-Haptic Feedback on Perception of Virtual Weight. *IEEE Access*, 10, 5129-5140. ([link](#))
- [12] Kim, D., **Kim, J.**, Shin, J. E., Yoon, B., Lee, J., & Woo, W. (2022, March). Effects of virtual room size and objects on relative translation gain thresholds in redirected walking. In *2022 IEEE conference on virtual reality and 3D user interfaces (VR)* (pp. 379-388). IEEE. ([link](#))
- [13] **Kim, J.***, Hwang, E.*, Shin, H., Gil, Y. H., & Lee, J. (2021). Top-down, bottom-up, and history-driven processing of multisensory attentional cues in intellectual disability: An experimental study in virtual reality. *PLOS One*, 16(12), e0261298. ([link](#))

Extended Abstracts, Posters, and Demo

- [1] Shin, H., Park, S., Kim, J., Lee, J., & Lee, J. (2025, October). Effect of Ceiling Height and Spatial Sharing Methods on Cognitive Load During Collaboration in Extended Reality. In *2025 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct)* (pp. 70-72). IEEE. ([link](#))
- [2] **Kim, J.**, Kim, T., & Lee, J. (2024, May). VR-SSVEPeripheral: Designing Virtual Reality Friendly SSVEP Stimuli using Peripheral Vision Area for Immersive and Comfortable Experience. In *Extended Abstracts of the 2024 CHI Conference on Human Factors in Computing Systems* (pp. 1-7). ([link](#))
- [3] **Kim, J.** (2024, March). [DC] Exploring and Designing VR Locomotion Method based on Bio-signal for Hands-free Context and its Improvement. In *2024 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)* IEEE. ([link](#))
- [4] **Kim, J.**, Lee, J., Kim, Y. J., & Lee, J. (2023, October). Influence of Cross-Modal Correspondence between Auditory and Visual Stimuli on Vection Perception in Virtual Reality. In *2023 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct)* (pp. 604-608). IEEE Computer Society. ([link](#))
- [5] Lee, J., **Kim, J.**, & Lee, J. (2023, October). Comparison of Virtual Reality Teleportation Targeting Method Performance depending on the Teleport Distance. In *2023 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct)* (pp. 742-745). IEEE Computer Society. ([link](#))
- [6] Seo, K., Vanichvoranun, N., Kim, Y., Jung, K., **Kim, J.**, Kim, H., & Yoon, S. H. (2023, October). GoGoHand+: Designing Haptic Feedback to Enhance the GoGoHand Interaction Technique. In *2023 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct)* (pp. 736-741). IEEE Computer Society. ([link](#))
- [7] **Kim, J.***, Kim, D.*, Kim, B., Kim, H., & Lee, J. (2023, March). Holobot: Hologram based extended reality telepresence robot. In *Companion of the 2023 ACM/IEEE International Conference on Human-Robot Interaction* (pp. 60-64). ([link](#))
- [8] **Kim, J.**, Koh, S., Kang, S., Jang, H., Lee, J., Nam, J., & Doh, Y. Y., (2022). Seung-ee and Kkaebi: A Cross-platform Game between Virtual Reality and Mobile. In *ACM CHI PLAY 2022 Interactivity*. (**Audience Choice Award**) ([link](#))
- [9] **Kim, J.**, & Lee, J. (2021, March). The Effect of the Virtual Object Size on Weight Perception Augmented with Pseudo-Haptic Feedback. In *2021 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)* (pp. 575-576). IEEE. ([link](#))
- [10] **Kim, J.**, Baek, K., & Jang, J. (2020, March). Petbe: Projecting a real being onto a social robot using contextual data for a pet monitoring method. In *Companion of the 2020 ACM/IEEE International Conference on Human-Robot Interaction* (pp. 290-292). ([link](#))
- [11] **Kim, J.**, Han, Y., Lee, S. H., Yoo, J., Song, J. (2018). Public IoT Service System using SNS Chatbot Application. In *HCI Korea Conference* 631-633.
- [12] Lee, S., **Kim, J.**, Han, Y., Lee, S., Kim, J., (2016). IoT Public Washing Machine Management System using Smart Meter. Proceedings of the Korean Information Science Society Conference, 171-173.

TECHNIQUES AND SKILLS

Programming & Data Analysis: Java, C/C++, Unity C#, Python, HTML, Pytorch, SPSS

IoT Applications: Sensors, Arduino & Raspberry Pi, Flask (REST API), Communication

EEG Data Acquisition & Analysis: Cognionics (EEG Quick-30), Emotiv, MNE, MATLAB (EEGLAB, ERPLAB)

ACADEMIC SERVICES

Invited Talk & Lecture

- HCI KOREA Outstanding Young Researcher Session, 2026.01.26
- Psychological Experiment Implementation with Unity 3D, CNU, 2024.02~03
- CSE333 Intro to Human-Computer Interaction, UNIST, 2023.06.01

Workshop Organizer

- IEEE ISMAR 2025 – 3rd Workshop on Gaze and Eye Movement in Interaction in XR (GEMNI)

Reviewer

- ACM Transactions on Computer-Human Interaction (TOCHI) - Distinguished Reviewer
- International Journal of Human-Computer Interaction
- IEEE Access
- EuroHaptics
- ACM CSCW, UIST, IMWUT
- ACM CHI, CHI LBW
- IEEE VR, VRST, ISMAR
- ACM/IEEE HRI LBW

Special Recognitions for Outstanding Reviews

- CHI 2025
- UIST 2025
- ISMAR 2024

Conference Contribution

- ACM CHI Poster 2026 (Associate Chair)
- ACM CHI LBW 2025 (Associate Chair)
- ACM TEI 2021 (Student Volunteer)

Mentoring

- Naver Connect Foundation (Python, C, Data Analysis)
- KAIST Gifted Youth Camp (Block Programming, Unity Basic)
- MODU Lab - LG ML/AI bootcamp
- 2020 Young-In Upcycling Hack-A-Thon Mentor
- 2021 ARKO Art Center ART TALK Program Mentor

Supervision Students

- Minyung Kim (PhD, KAIST, w/Prof.Sangho Yoon) 2025-
- Kyoungwhan Mheen (MSc, KAIST, w/Prof.Sangho Yoon) 2025-
- Sangmin Park (MSc, KAIST, w/ Prof. Jeongmi Lee) 2024-26
- Jihyeon Lee (MSc & PhD, KAIST, w/ Prof. Jeongmi Lee) 2022-26
- Sihyun Jeong (MSc & PhD, KAIST, w/ Prof. Jeongmi Lee) 2022-23
- Seungun Lee (MSc, KAIST, w/ Prof. Jeongmi Lee) 2022-23
- Hyunyoung Jang (MSc, KAIST, w/ Prof. Jeongmi Lee) 2021-22

Teaching material Produce @KAIST Cyber Talented Center

- Unity Game Programming with LEGO Course
- Unity Basic Programming with C# Course
- Unity Advance C# Game Development Programming Course

Article (Magazine, etc)

- J.Kim, [Paper Review] Increasing the sense of immersion in extended reality: A sensory augmentation system, Dongascience, 2023.10