Seo Young Oh

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RESEARCH INTERESTS

Interaction Techniques, 3D User Interfaces, Augmented Reality, Ubiquitous Virtual Reality, Human-Computer Interaction

EDUCATION

Korea Advanced Institute of Science and Technology (KAIST) Daejeon, Republic of Korea

Ph.D. Candidate, *Graduate School of Culture Technology* Mar 2020 – Present

M.S., *Graduate School of Culture Technology* Mar 2014 – Mar 2016, Mar 2019 – Feb 2020
· Thesis: "Finger Contact in 3D Gesture Interaction to Improve Temporal Input Accuracy in HMD-based Augmented Reality"

B.S., *Mechanical Engineering* Feb 2009 – Feb 2014

WORK EXPERIENCE

Naru EMS Inc. Daejeon, Republic of Korea
Research Engineer Apr 2016 – Feb 2019
· Ported engineering system simulation algorithms to C and implemented user interfaces.
· Developed an AR-based demo for a spatial audio system.

TECHNICAL SKILLS & LANGUAGES

Programming: C#, Python, C++ **Development Tools:** Unity, OpenXR, Meta XR SDK, Mixed Reality Toolkit

Design & Graphics: Illustrator, Photoshop, Premiere Pro **Languages:** Korean (Native), English (Proficient)

SELECTED PROJECTS

Real-time XR Interface Technology Development for Environmental Adaptation Apr 2024 – Present
Funded by Institute for Information and Communications Technology Promotion (IITP)
· Currently developing a finger-level virtual object control technique for realistic interaction in XR.

WISE AR UI/UX Platform Development for Smartglasses Jan 2022 – Dec 2023
Funded by Institute for Information and Communications Technology Promotion (IITP)
· Contributed to developing a multi-device system and hand interaction for an adaptive smartglasses interface.

Human Reconstruction for Telepresent Interaction Mar 2019 – Dec 2020
Funded by National Research Foundation (NRF)
· Contributed to developing a hand interaction system focusing on usability and presence in remote collaboration systems.

Full project list available upon request.

SELECTED PUBLICATIONS

Seo Young Oh, Junghoon Seo, Boram Yoon, Sang Ho Yoon, and Woontack Woo, 2025."ForceCtrl: Hand-Raycasting with User-Defined Pinch Force for Control-Display Gain Application," *IEEE Transactions on Visualization and Computer Graphics*. DOI: 10.1109/TVCG.2025.3647547.

Sunyoung Bang, Hyunjin Lee, **Seo Young Oh**, and Woontack Woo, 2025. "AReading with Smartphones: Understanding the Trade-offs between Enhanced Legibility and Display Switching Costs in Hybrid AR Interfaces," *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems*. DOI: 10.1145/3706598.3713879.

Juyoung Lee, **Seo Young Oh**, Minju Baeck, Hui Shyong Yeo, Hyung-Il Kim, Thad Starner, and Woontack Woo, 2024. "Whirling Interface: Hand-based Motion Matching Selection for Small Target on XR Displays," *2024 IEEE International Symposium on Mixed and Augmented Reality (ISMAR)*. DOI: 10.1109/ISMAR62088.2024.00046.

Hyung-il Kim, Boram Yoon, **Seo Young Oh**, and Woontack Woo, 2023."Visualizing Hand Force with Wearable Muscle Sensing for Enhanced Mixed Reality Remote Collaboration," *IEEE Transactions on Visualization and Computer Graphics*. DOI: 10.1109/TVCG.2023.3320210.

Hui-Shyong Yeo, Erwin Wu, Daehwa Kim, Juyoung Lee, Hyung-il Kim, **Seo Young Oh**, Luna Takagi, Woontack Woo, Hideki Koike, and Aaron John Quigley, 2023. "OmniSense: Exploring Novel Input Sensing and Interaction Techniques on Mobile Device with an Omni-Directional Camera," *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*. DOI: 10.1145/3544548.3580747.

Boram Yoon, Jae-eun Shin, Hyung-il Kim, **Seo Young Oh**, Dooyoung Kim, and Woontack Woo, 2023."Effects of Avatar Transparency on Social Presence in Task-centric Mixed Reality Remote Collaboration," *IEEE Transactions on Visualization and Computer Graphics*. DOI: 10.1109/TVCG.2023.3320258.

Boram Yoon, Hyung-il Kim, **Seo Young Oh**, and Woontack Woo, 2020. "Evaluating Remote Virtual Hands Models on Social Presence in Hand-based 3D Remote Collaboration," *2020 IEEE International Symposium on Mixed and Augmented Reality (ISMAR)*. DOI: 10.1109/ISMAR50242.2020.00080.

Jae-eun Shin, Hayun Kim, Callum Parker, Hyung-il Kim, **Seo Young Oh**, and Woontack Woo, 2019. "Is Any Room Really OK? The Effect of Room Size and Furniture on Presence, Narrative Engagement, and Usability During a Space-Adaptive Augmented Reality Game," *2019 IEEE International Symposium on Mixed and Augmented Reality (ISMAR)*. DOI: 10.1109/ismar.2019.00-11.

HONORS AND AWARDS

Best Implementation Award - Student Design Competition Oct 2022
The International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI)

ACADEMIC SERVICES AND EXPERIENCES

Teaching Assistant at KAIST
· Undergraduate Research Participation Program — Spring 2015, Spring 2022, Spring 2025
· CTP445 Augmented Reality — Fall 2020, Spring 2022
· GCT565 Augmented Humans — Fall 2021
· GCT700 Topics in Culture Technology Project Planning: AR Project — Spring 2021
· ID216 Product Design Engineering — Fall 2013, Fall 2014

Graduate Mentor at Korea Science Academy of KAIST
· High School Research Participation Program — Fall 2015

Volunteering
· Reviewer: CHI, CHI Late-Breaking Work, Korea Software Congress
· Academic Event Assistant: ISMAR (2025 Best Student Volunteer), KAIST GSCT Post-Metaverse Forum

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