Hi! I'm Hyuna Seo

I'm a PhD student at the Human-Centered Computing Systems Lab, Department of Computer Science and Engineering, Seoul National University, since 2021.02 under the guidance of Youngki Lee.

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Research Interest

My research is focused on designing **Mixed Reality systems** that allow users to remain deeply immersed in virtual environments while seamlessly interacting with the physical (real) world according to their needs. Balancing the immersion of virtual environments with the usability of physical world interactions is crucial to enhancing the user experience. To address this, I have been exploring a **context-aware** approach, gradually integrating physical world information into the virtual environment based on the user's interaction state. Recently, I have extended this research to Social VR scenarios, investigating ways to modify avatars to provide a heightened sense of social presence. My another primary interest lies in **integrating Generative AI with MR development and evaluation**, aiming to leverage this rapidly advancing technology to create more efficient and impactful MR experiences. Additionally, I am intrigued by the challenge of balancing everyday actions, such as taking a simple sip of beer🍻

Education

Seoul National University — Seoul, Republic of Korea

Ph.D in Computer Science and Engineering — March 2021 - Present

Advisor: Youngki Lee

Hanyang University — Seoul, Republic of Korea

B.S. in Computer Science an Engineering — March 2016 - Feb 2021

Publications

GradualReality: Enhancing Physical Object Interaction in Virtual Reality via Interaction State-Aware Blending

Hyuna Seo, Juheon Yi, Rajesh Balan, Youngki Lee

ACM Symposium on User Interface Software and Technology 2024 (UIST'24)

LIVE: Life-Immersive Virtual Environment with Physical Interaction-Aware Adaptive Blending (Poster)

Hyuna Seo, Juheon Yi, Youngki Lee

ACM International Conference on Mobile Systems, Applications, and Services 2022 (MobiSys'22)

Simultaneous Sporadic Sensor Anomaly Detection for Smart Homes

Hyunwoo Jung, Wootak Kim, Hyuna Seo, Youngki Lee

ACM International Conference on Embedded Networked Sensor Systems 2022 Workshop (DATA'22)

Ongoing Projects

ALIVE: Manipulating Social Virtual Reality Avatar during Physical Object Interaction in Virtual Meeting — December 2023 - Present

TaleTrain: Improving Preschool Children's Korean Speaking through LLM-Powered Video Retelling Framework — February 2024 - Present

Patents

Application Number: 10-2024-0077055 Application Date: June 13, 2024

Title: Method and Apparatus for Supporting Interaction Between Virtual Environments and the Real World

Inventors: Youngki Lee, Hyuna Seo, Juheon Yi

Grants

Scholarship for Academic Excellence for 1 Semester Spring Semester 2019

Skills

Programming Languages: C, C++, C#, Python, Java, JavaScript

Frameworks & Tools: Unity, Android, iOS, Git

Language: English (fluent), Korean (native)

Teaching Experiences

SNU & Samsung Data Science Course: Machine Learning April 2024

SNU & LG Data Science Course: Machine Learning February 2024

Computer Programming Seoul National University

Lead TA: managed 6 TAs, over 150 students Fall Semester 2021, 2022

Work Experiences

Human-Centered Computer Systems Lab @ SNU Seoul, Republic of Korea

Research Intern July 2020 - Feb 2021

Visual Intelligence Lab @ HYU Seoul, Republic of Korea

Research Intern March 2020 - June 2021