

About

I am a **Ph.D. student** in the **Graduate School of Culture Technology at KAIST** and a member of the **Ubiquitous Virtual Reality Lab**, advised by **Prof. Woontack Woo**. I believe **physical space can become a new medium for AR/VR/MR**, and my work explores how **spatial computing** can shape interaction, perception, and experience across heterogeneous physical environments.

RESEARCH INTERESTS

Augmented Reality · Ubiquitous Virtual Reality · Remote Collaboration · Spatial Computing

Publications

2026

Spatial Affordance-Aware Affine Transformation Between Heterogeneous Spaces for Mixed Reality Remote Collaboration

Seonji Kim, Dooyoung Kim, Selin Choi, Woontack Woo
IEEE TVCG 32(5), 2026

Sharing Augmented Reality Furniture across Heterogeneous Spaces: Asymmetric Effects of Unmatched Area Visualization

Seonji Kim, Jinwook Kim, Selin Choi, Minju Baeck, Boram Yoon, Jens Emil Grønbaek, Jae-eun Shin, Woontack Woo
TVCG submission, 2026

Task Breakpoint Generation using Origin-Centric Graph in Virtual Reality Recordings for Adaptive Playback

Selin Choi, Dooyoung Kim, Taewook Ha, Seonji Kim, Woontack Woo
IEEE TVCG 32(5), 2026

VR Zen Garden: Designing a Virtual Environment for Stress Relief

Hail Song, Jinseok Hong, Seonji Kim, Kyung Taek Oh, Woontack Woo, Sungyoung Kim
IEEE VR Workshops, 2026

2025

Architectural Elements Augmentation from 2D Artworks for Spatial Experience of AR Exhibition

Young Bin Kim, Suji Kang, Minju Baeck, Seonji Kim, Woontack Woo
IEEE ISMAR Adjunct, 2025

Human-Scene Interaction Data Generation with Virtual Environment using User-Centric Scene Graph

Taewook Ha, Selin Choi, Seonji Kim, Dooyoung Kim, Woontack Woo
IEEE VR Workshops, 2025

Meta-Objects: Interactive and Multisensory Virtual Objects Learned From the Real World for Use in Augmented Reality

Dooyoung Kim, Taewook Ha, Jinseok Hong, Seonji Kim, Selin Choi, Heejeong Ko, Woontack Woo
IEEE Computer Graphics and Applications 45(3), 2025

Mutual Space Representation Standardization for Mixed and Augmented Reality Remote Collaboration

Seonji Kim, Woontack Woo
IEEE ISMAR Adjunct, 2025

2024

Object Cluster Registration of Dissimilar Rooms Using Geometric Spatial Affordance Graph to Generate Shared Virtual Spaces

Seonji Kim, Dooyoung Kim, Jae-eun Shin, Woontack Woo
IEEE VR, 2024

Spatial Affordance-aware Interactable Subspace Allocation for Mixed Reality Telepresence

Dooyoung Kim, Seonji Kim, Selin Choi, Woontack Woo
IEEE ISMAR, 2024

2023

The Effects of Spatial Configuration on Relative Translation Gain Thresholds in Redirected Walking

Dooyoung Kim, Seonji Kim, Jae-eun Shin, Boram Yoon, Jinwook Kim, Jeongmi Lee, Woontack Woo
Virtual Reality 27(2), 2023

2022

Bring Store in My Room: AR Store Authoring System for Spatial Experience in Mobile Shopping

Seonji Kim, Hyuckjin Jang, Kyung Taek Oh, Seoyoung Oh, Dooyoung Kim, Woontack Woo, Jeongmi Lee, Jaehong Ahn, Sang Ho Yoon
IEEE ISMAR Adjunct, 2022

TranSlider: User-Controlled Augmented Content Presence Visualization in AR Collaboration

Boram Yoon, Seonji Kim, Woontack Woo
IEEE ISMAR Adjunct, 2022

Research Experience

2024–Present	Meta-Object Real-time XR Interface Technology Development for Environmental Adaptation Intelligent Platform Team · IITP, Ministry of Science and ICT
2021–2025	OpenXR: TranSpace 3.0 Development of Untact Realistic OpenXR Platform Technology Real-World Digital Twin Generation and Management Team

Education

2023–Present	Ph.D. Student · KAIST Graduate School of Culture Technology
2021–2023	M.S. · KAIST Graduate School of Culture Technology
2016–2021	B.S. · Sungkyunkwan University Computer Science and Engineering

Teaching

GCT445	Augmented Reality Teaching Assistant · Summer 2025
GCT600	Augmented Reality Project Teaching Assistant · Fall 2024

GCT555	3D Interaction Design Teaching Assistant · Spring 2024
GCT600	Augmented Reality Project Teaching Assistant · Fall 2023