

GIST actively researches virtual reality interfaces... Won the Best Paper Award at an international academic conference (ISMAR 2023)

- Professor SeungJun Kim's research team presented two papers at 'ISMAR 2023', the most prestigious academic conference in the field of virtual and augmented reality, and demonstrated the technology to general audiences at COEX KMF 2023
- Collaboration with Carnegie Mellon University Robotics Research Institute, expected to expand artificial intelligence-based metahuman research

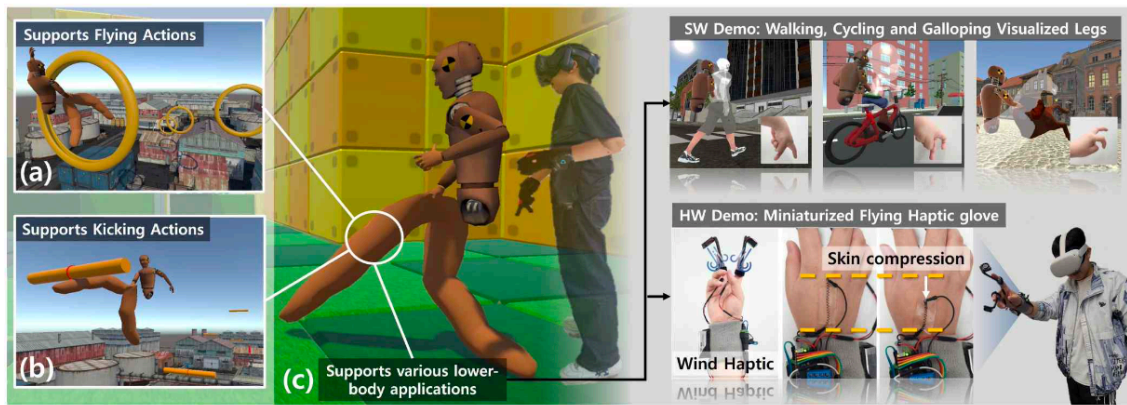


▲ ISMAR 2023 Conference Outstanding Paper Award Announcement

A domestic research team developed an ultra-realistic user interface technology that expands the sense of space and mobility of virtual reality and won an excellent paper award at an international academic conference (ISMAR 2023).

Professor SeungJun Kim's research team in the School of Integrated Technology at the Gwangju Institute of Science and Technology (GIST, President Kichul Lim) is conducting research on a user interface that allows users to enjoy and move around in infinite virtual reality spaces even in limited real spaces.

By augmenting the sense of equilibrium and proprioception (the sensation of using muscles and joints) through the body's vestibular system, the researchers demonstrated a technology that extends the detection threshold of turning gait by more than 20 percent, allowing users to experience virtual reality spaces without interrupting their gait in an environment about the size of a regular room.



▲ Virtual reality walking interface through finger proprioception transfer

The team presented two papers at ISMAR 2023 (IEEE International Symposium on Mixed and Augmented Reality), the most prestigious international conference in the field of virtual and augmented reality. One of the papers, "Enhancing Seamless Walking in Virtual Reality: Application of Bone-Conduction Vibration in Redirected Walking," received an Honorable Mention Award, which is given to one paper out of 400 submitted papers.



▲ Virtual reality orientation gait interface via bone conduction vibration

Researcher Seokhyun Hwang said, "It seems to have received high praise for its ultra-realistic technology and its applicability, which allows users to experience an expanded virtual space in a narrow real space."

The results of this research were exhibited at the 'Korea Metaverse Festival (KMF 2023)' held at COEX through the 'Metaverse Lab' project of the Korea Radio Promotion Association. It received great attention in the field by providing an opportunity for ordinary citizens to directly demonstrate and experience the metamobility virtual reality platform research results and contents.



▲ KMF 2023 exhibition and demonstration

Currently, Professor SeungJun Kim's research team is conducting research in cooperation with the Content Application Research Center of the Korea Electronics Technology Institute (KETI), and both organizations are using the results of this research in a virtual space that is being jointly researched with Carnegie Mellon University (CMU). They plan to expand into 'metahuman' research. To this end, four student researchers were dispatched to Carnegie Mellon University's Robotics Institute and are actively conducting research on creating digital humans.

Professor SeungJun Kim said, "In the future, we will not only strive to produce excellent research results through active international cooperation, but we will also continue to conduct research that the general public can experience, such as technology demonstration and commercialization."

Meanwhile, two papers conducted under the guidance of GIST Professor SeungJun Kim (corresponding author) were led by researcher Seokhyun Hwang (GIST master's student) and doctoral student Seongjun Kang, respectively. It received support from the National Research Foundation of Korea's basic research laboratory project, the GIST-MIT international joint research project, and the Research and Development Special Zone Promotion Foundation's 'Science and Technology Project Project to Open the Future of the Region'.