

GIST operates a living lab to demonstrate realistic visualization content to help the hearing impaired listen to music

- Implementation of music appreciation/education/writing program services based on visual and tactile conversion technology for the hearing impaired to experience music
- Signed a Memorandum of Understanding (MoU) with 'Sori Clinic'... Supporting the emotional and social experiences of the hearing impaired through music



▲ Group photo of 'team GIST'

At the Gwangju Institute of Science and Technology (GIST, President Kichul Lim), 'team GIST (Professors Jin Hyuk Hong (Chief Researcher), Kyung-Joong Kim, and Ji Hyun Yi)' of the School of Integrated Technology successfully operated a Living Lab for the hearing-impaired to experience music during the month of November.

The 'team GIST' research team set up an experience booth to support the enjoyment of music by the hearing impaired at a non-profit conference for the hearing impaired and a welfare center for the hearing impaired and provided verification services for the research results.

On Saturday, November 4, team Gist participated in the non-profit conference "2023 Communication Night," where deaf (deafblind and hard of hearing) and non-deaf people come together to share their research achievements with more than 120 citizens.

In addition, they successfully completed the demonstration of all five deliverables by operating a living lab (booth and academy) at the Seodaemun Deaf Welfare Center for the Deaf for about two weeks from November 6 (Monday) to 16 (Thursday), and for deaf users at the Yangcheon-gu Sign Language Interpretation Center for about one week from November 18 (Saturday) to 24 (Friday).

The programs field-tested were 1) a multimodal synthesizer, a music tool that lets you see, touch, feel, and create sounds for creating sign language song content, 2) Multimedia Haptic Design Tool, a visually oriented haptic authoring tool for multimedia content experiences that emphasize visual effects over music, 3) Viz-stage, a music education and instrument playing program with various sound characters, 4) AI sign language dancer, which generates a sign language dance to any song with lyrics, and 5) Dance with Just Dance, a dance game that enjoys music through sight and touch.

* Seodaemun Deaf Welfare Center and Yangcheon-gu Sign Language Interpretation Center: These organizations operate various educational and cultural programs for the deaf and hard of hearing, and support sign language interpretation services to promote the cultural enjoyment rights of the socially vulnerable.

Deaf people who visited the '2023 Communication Night' and two welfare centers experienced various programs at the 'team GIST' booth and made sign language music by understanding existing music with alternative senses and converting music lyrics into sign language. They wore haptic vibration bracelets and participated in a game where they imitated the dancer's dance on the screen, actively enjoying the music.



▲ Living Lab site conducted by 'team GIST' (Chief Researcher: Professor Jin Hyuk Hong)' of GIST School of Integrated Technology (Left: Haptic design tool experience, Right: Dance with Just Dance experience)

Professor Jin Hyuk Hong said, "This demonstration was a good opportunity to visit an actual welfare center and vividly experience how the research results can be used in the field for hearing-impaired users. In particular, I was proud to receive a lot of feedback that hearing-impaired users were not just passively receiving music, but they were able to actively enjoy music in a more familiar way by writing and listening to music through sign language."

Meanwhile, 'team GIST' is developing technology to visualize music and dance for the enjoyment of music by the hearing impaired (host organization: GIST, joint research institutes: CK Materials Lab Co., Ltd., Korea Advanced Institute of Science and Technology (KAIST), Sejong University, Handspeak Co., Ltd. / Project performance period for carrying out the project: 2021.06.01. ~ 2023.12.31.).

'team GIST' plans to focus on continuously developing and expanding its research results and recently signed a memorandum of understanding (MOU) with 'Sori Clinic', which has a specialized rehabilitation treatment center for the hearing impaired, and plans to closely cooperate with the goal of ensuring that the results of this project are continuously verified and updated in the actual field.



▲ GIST-Sori Clinic MoU signed on 'Development of music and dance realistic visualization technology for the enjoyment of music by the hearing impaired'. (From left) GIST Professor Jin Hyuk Hong and Sori Clinic Center Director Seon-ah Jang

In addition, through continuous communication with hearing-impaired support organizations and related communities, they plan to develop a deeper understanding of the needs and feedback of hearing-impaired people and develop research that reflects this to support hearing-impaired people to have richer emotional and social experiences through music.