



Seokhyun (Shawn) Hwang

▣ Human Computer Interaction ▣ VR / AR
▣ Haptic interface ▣ Wearable Device

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EDUCATION

- ▣ Gwangju Institute of Science and Technology, Korea September 2021 – August 2023
Master of Science (M.S.) (Advisor: SeungJun Kim)
• Intelligent Robotics, School of Integrated Technology
- ▣ Gwangju Institute of Science and Technology, Korea March 2017 – August 2021
Bachelor of Science (B.S.)
• Department of Mechanical Engineering

RESEARCH EXPERIENCE

- ▣ Human-Centered Intelligence Systems Lab, Korea (GIST) September 2021 – August 2023
M.S. (Advisor: SeungJun Kim)
• Intelligent Robotics, School of Integrated Technology
• Development of redirected walking system using galvanic vestibular stimulation
• Development of haptic system for lower body in virtual environment
• Development of VR user human-state identification algorithm through gait pattern
- ▣ Human-Centered Intelligence Systems Lab, Korea (GIST) January 2021 – September 2021
Research Intern (Advisor: SeungJun Kim)
• School of Integrated Technology Internship program & Undergraduate Research Intern Program
• Development of redirection system using multi-sensory stimulation
• Development of in vehicle AR system and NUI interaction interface
• Development of public transportation simulation 3DoF motion system
- ▣ Intelligent Medical Robotics Lab, Korea (GIST) June 2020 – December 2020
Research Intern (Advisor: Jungwon Yoon)
• G-surf internship program & undergraduate research intern program
• Nanorobot Controls and Interface for Drug Delivery, Brain Stimulation, and Hyperthermia
• Development of a Robotic Navigation Platform of Magnetic Nanoparticles for Targeted Delivery to a Brain
- ▣ BA Energy Lab, Korea December 2019 – February 2020
Industrial-Academic Intern
• Industry-Academic Cooperation Scholarship
• Technology Development Department Intern
• 3D modeling, rendering, 3D printer product modeling, design tasks

- Product modeling, rendering Creation for the 'Next Rise 2020' Fair

CONFERENCES & PUBLICATIONS

- [j.3] "WatchCap: Improving Scanning Efficiency in People with Low Vision through Compensatory Head Movement Stimulation."
Jo, T., Yeo, D., Kim, G., **Hwang, S.**, and Kim, S.
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) (Under Revision)
- [j.2] "Evaluation of Visual, Auditory, and Olfactory Stimulus-Based Attractors for Intermittent Reorientation in Virtual Reality Locomotion."
Lee, J., **Hwang, S.**, Ataya, A., and Kim, S.
Virtual Reality (Under Revision)
- [j.1] "Effect of Optical Flow and User VR Familiarity on Curvature Gain Thresholds for Redirected Walking."
Lee, J., **Hwang, S.**, Ataya, A., and Kim, S.
Virtual Reality (Under Revision)
- [c.3] "Enhancing Seamless Walking in Virtual Reality: Application of Bone-Conduction Vibration in Redirected Walking."
Hwang, S., Kim, Y., Seo, Y., and Kim, S.
2023 IEEE International Symposium on Mixed and Augmented Reality (ISMAR) 🏆 **Honorable mention**
- [c.2] "Designing Virtual Agent Human–Machine Interfaces Depending on the Communication and Anthropomorphism Levels in Augmented Reality."
Kang, Y., Choi, S., An, E., **Hwang, S.**, and Kim, S.
Proceedings of the 2023 International Conference on Automotive UI 🏆 **Honorable mention**
- [c.1] "Electrical, Vibrational, and Cooling Stimuli-Based Redirected Walking: Comparison of Various Vestibular Stimulation-Based Redirected Walking Systems."
Hwang, S., Lee, J., Kim, Y., Seo, Y., and Kim, S.
Proceedings of the 2023 CHI conference on Human Factors in Computing Systems
- [p.2] "REVES: Redirection Enhancement Using Four-Pole Vestibular Electrode Stimulation."
Hwang, S., Lee, J., Kim, Y., and Kim, S.
Extended Abstracts of the 2022 CHI conference on Human Factors in Computing Systems (Late-Breaking Work)
- [p.1] "Auditory and Olfactory Stimuli-Based Attractors to Induce Reorientation in Virtual Reality Forward Redirected Walking."
Lee, J., **Hwang, S.**, Kim, K., and Kim, S.
Extended Abstracts of the 2022 CHI conference on Human Factors in Computing Systems (Late-Breaking Work)

TEACHING EXPERIENCE

- ▣ 2019 GIST Global Science Camp in Laos, National University of Laos (NUOL), Laos July 2019
Experiment Instructor
- Educational volunteer for college students of the National University of Laos and Khon, Kaen University of Thailand
 - Teaching Assist in the production of Dye-Sensitized Solar Cells using Anthocyanin
 - Experimental Assist in efficiency measurement and verification of Dye-Sensitized Solar Cells
- ▣ 2019 GIST Science Camp, Korea (GIST) January 2019

Experiment Team Leader

Design Team Leader

- Providing experimental and theoretical education to elementary and middle school students in the community

AWARDS & HONORS

- ▣ **Honorable Mentions, IEEE International Symposium on Mixed and Augmented Reality (ISMAR)** October 2023
 - Honorable mention for being in the top 1% of conference papers
- ▣ **Honorable Mentions, International ACM Conference on Automotive UI** September 2023
 - Honorable mention for being in the top 5% of conference papers
- ▣ **Gwangju Institute of Science and Technology President Award, Korea.** August 2020
 - 1st prize in table tennis robot at the 4th GIST Creative Convergence Competition in 2020
- ▣ **Scholarship for Academic Excellence, Korea** September 2020 – December 2020
 - GIST Scholarship for Academic Excellence
- ▣ **Industry-Academic Cooperation Scholarship, Korea** December 2019 – February 2020
 - Industry-Academic Cooperation Scholarship in BA Energy Lab
- ▣ **Scholarship for Overseas Summer Semester Exchange Students, USA** June 2018 – August 2018
 - Boston University Summer Semester Exchange Student Scholarship
- ▣ **GIST Scholarship (Government supported), Korea** March 2017 – August 2021
 - GIST Bachelor's Degree Government Scholarship

TECHNICAL STRENGTHS

- ▣ **Modeling & Designing**
 - Autodesk Inventor
 - SolidWorks
 - Blender
 - KiCad
- ▣ **Software & Tools**
 - COMSOL Multiphysics
 - LABVIEW
 - MATLAB
 - Unity
 - Three.js
 - Cubase
 - Adobe Premiere Pro
 - Final Cut Pro
- ▣ **Programming Languages**
 - C, C#, Python, JAVA, MATLAB

EXTRA-CURRICULAR ACTIVITIES

- ▣ **GIST Society of Automotive Engineers, Korea (GIST)** October 2020 – March 2022
 - Founder
 - GIST College Student Self-Created Automobile Club Establishment
 - Responsible for designing and manufacturing steering systems
- ▣ **GIST Student Creative Activity Support Initiative, Korea (GIST)** March 2020 – November 2020
 - Team Leader
 - Support for student clubs in the COVID-19 Era

- Producing and distributing performance/activity videos
- Funded by GIST over 4,500\$

▣ GIST Broadcasting Station, Korea (GIST)

March 2019 – November 2020

Founder

Filming / Editing manager

- Establish a video production station of GIST
- Producing promotional videos for schools, videos of student activities, etc.
- Funded by GIST over 30,000\$.

▣ Gwangju Institute of Science and Technology Human Rights Center, Korea (GIST).

December 2018 – March 2019

Research Intern (Advisor: Kim, Gunoo)

- Intern of the Human Rights Center on campus
- A study involving law, ethics, morality, and philosophy of law

STUDY ABROAD EXPERIENCE

▣ Boston University Summer Sessions, USA

June 2018 – August 2018

Exchange Student

- Courses taken: JAVA programming language, Statistics

REFERENCES

▣ Professor SeungJun Kim, Ph.D.

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Human-Centered Intelligence Systems Lab, Gwangju Institute of Science and Technology
(+82) 62-715-5331

▣ Professor Jungwon Yoon, Ph.D.

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Intelligent Medical Robotics Lab, Gwangju Institute of Science and Technology
(+82) 62-715-5332

▣ Professor Kim, Gunoo, Ph.D.

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(+82) 62-715-3717