



# Seokhyun Hwang

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

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## EDUCATION

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- ▣ 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



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- ▣ Human-Centered Intelligence Systems Lab, Korea (GIST) September 2023 – Present  
*Research Associates*
- ▣ Human-Centered Intelligence Systems Lab, Korea (GIST) September 2021 – August 2023  
*M.S. (Advisor: SeungJun Kim)*
- ▣ Human-Centered Intelligence Systems Lab, Korea (GIST) January 2021 – September 2021  
*Research Intern (Advisor: SeungJun Kim)*
- ▣ Intelligent Medical Robotics Lab, Korea (GIST) June 2020 – December 2020  
*Research Intern (Advisor: Jungwon Yoon)*
- ▣ BA Energy Lab, Korea December 2019 – February 2020  
*Industrial-Academic Intern*

## CONFERENCES & PUBLICATIONS

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- [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)

- [c.5] "ErgoPulse: Electrifying Your Lower Body With Biomechanical Simulation-based Electrical Muscle Stimulation Haptic System in Virtual Reality."  
**Hwang, S.**, Oh, J., Kang, S., Seong, M., Elsharkawy, A., and Kim, S.  
*Proceedings of the 2024 CHI conference on Human Factors in Computing Systems* (Accepted)
- [c.4] "SYNC-VR: Synchronizing Your Senses to Conquer Motion Sickness for Enriching In-Vehicle Virtual Reality."  
Elsharkawy, A., Ataya, A., Yeo, D., An, E., **Hwang, S.**, and Kim, S.  
*Proceedings of the 2024 CHI conference on Human Factors in Computing Systems* (Accepted)
- [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* (Accepted)
- [c.3] "Enhancing Seamless Walking in Virtual Reality: Application of Bone-Conduction Vibration in Redirected Walking."  **Honorable mention**  
**Hwang, S.**, Kim, Y., Seo, Y., and Kim, S.  
*2023 IEEE International Symposium on Mixed and Augmented Reality (ISMAR)*
- [c.2] "Designing Virtual Agent Human–Machine Interfaces Depending on the Communication and Anthropomorphism Levels in Augmented Reality."  **Honorable mention**  
Kang, Y., Choi, S., An, E., **Hwang, S.**, and Kim, S.  
*Proceedings of the 2023 International Conference on Automotive UI*
- [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*
- [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*

## TEACHING EXPERIENCE

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▣ **XR Project Class Teaching Assistant, Korea (GIST)**

2022 Fall Semester – 2023 Spring Semester

Teaching Assistant

- Served as a teaching assistant in a project-based class
- Responsible for teaching, exam preparation, and evaluation of the Unity-based XR project

▣ **2019 GIST Global Science Camp, National University of Laos (NUOL), Laos**

July 2019

Experiment Instructor

- Educational volunteer for college students of the NUOL and Khon, Kaen University of Thailand
- Teaching & Experimental Assist in the production of Dye-Sensitized Solar Cells using Anthocyanin

▣ **2019 GIST Science Camp, Korea (GIST)**

January 2019

Experiment Team Leader, Design Team Leader

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

## AWARDS & HONORS

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▣ **Honorable Mentions, IEEE 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

## INVITED TALKS

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### ▣ HCI Korea'24, ACM SIGCHI (Korea Local Chapter)

January 2024

- Invited Presentation in Top-Conference Sessions on Vestibular Stimuli-Based Redirected Walking.

## TECHNICAL STRENGTHS

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### ▣ 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

## STUDY ABROAD EXPERIENCE

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### ▣ Boston University Summer Sessions, USA

June 2018 – August 2018

#### Exchange Student

- Courses taken: JAVA programming language, Statistics

## EXTRA-CURRICULAR ACTIVITIES

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### ▣ 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\$.

▣ **GIST 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