**패턴, 사각형, 대칭, 직사각형이(가) 표시된 사진

자동 생성된 설명**Jul 2024 Curriculum Vitae

**Seokhyun Hwang**

|  |  |
| --- | --- |
| **▣ Human Computer Interaction ▣ VR / AR**  **▣ Haptic interface ▣ Wearable Device** | Email: [seokhyun@uw.edu](mailto:seokhyun@uw.edu)  Website: [www.seokhyunhwang.com](http://www.seokhyunhwang.com) |

EDUCATION

**▣ University of Washington, United States (Expected)**  September 2024 – Present

*Doctor of Philosophy (Ph.D.) (Advisor: Jacob O. Wobbrock)*

• Information Science, Information School

**▣ 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

**▣** **Boston University, United States** June 2018 – August 2018

*Exchange Student for Summer Session*

**▣ Gwangju Institute of Science and Technology, Korea**  March 2017 – August 2021

*Bachelor of Science (B.S.)*

• Department of Mechanical Engineering

RESEARCH EXPERIENCE

**▣ ACE Lab, United States (University of Washington)** September 2024 – Present

*Ph.D. (Advisor: Jacob O. Wobbrock)*

**▣ Human-Centered Intelligence Systems Lab, Korea (GIST)** September 2023 – August 2024

*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 – August 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

**[w.4]** "Proposal of a Framework for Enhancing Teleoperation Experience with Biomechanical Simulation-Based Electrical Muscle Stimulation in Virtual Reality"

**Hwang, S.,** Kang, S., Oh, J., Park, J., Shin, S., Yiyue Luo, Joseph DelPreto, Wojciech Matusik, Daniela Rus, and Kim, S.

*UbiComp/ISWC '24 Adjunct* (Accepted)

**[w.3]** "Adaptive In-Vehicle Virtual Reality for Reducing Motion Sickness: Manipulating Passenger Posture During Driving Events"

Elsharkawy, A., Ataya, A., Yeo, D., Seong, M., **Hwang, S.,** Joseph DelPreto, Wojciech Matusik, Daniela Rus, and Kim, S.

*UbiComp/ISWC '24 Adjunct* (Accepted)

**[c.7]** "TimelyTale: A Multimodal Dataset Assessing Passenger's Demands for Explanations in Highly Automated Vehicles"

Kim, G., **Hwang, S**., Seong, M., Yeo, D., Daniela Rus, and Kim, S.

*Proceedings of the ACM on IMWUT* (Accepted)

**[w.2]** "Intelligence Walker: A Seamless Mobility Assist Device for the Elderly."

Choi, Y., Yeo, D., **Hwang, S.,** Seong, M., Moon, J., Yiyue Luo, Wojciech Matusik, Daniela Rus, and Kim, K.

*2024 IEEE ICRA Workshop on Wearable*

**[w.1]** "Dual-sided Peltier Elements for Rapid Thermal Feedback in Wearables."

Kang, S., Kim, G., **Hwang, S.,** Park, J., Elsharkawy, A., and Kim, S.

*2024 IEEE ICRA Workshop on Wearable*

**[c.6]** "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 IMWUT*

**[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*

**[c.5]** "ErgoPulse: Electrifying Your Lower Body With Biomechanical Simulation-based Electrical Muscle Stimulation Haptic System in Virtual Reality." 🏆 **Honorable mention**

**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*

**[c.4]** "SYNC-VR: Synchronizing Your Senses to Conquer Motion Sickness for Enriching In-Vehicle Virtual Reality." 🏆 **Honorable mention**

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*

**[p.4]** "GaitWay: Gait Data-Based VR Locomotion Prediction System Robust to Visual Distraction."

Kim, Y., **Hwang, S.**, Oh, J., and Kim, S.

*Extended Abstracts of the 2024 CHI conference on Human Factors in Computing Systems*

**[p.3]** "Curving the Virtual Route: Applying Redirected Steering Gains for Active Locomotion in In-Car VR."

Gim, B., Kang, S., Kim, G, Yeo, D., **Hwang, S.**, and Kim, S.

*Extended Abstracts of the 2024 CHI conference on Human Factors in Computing Systems*

**[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*

**[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*

PATENTS & COPYRIGHTED CONTENTS

**[pa.1]** "Method and System for Supporting Walking in Virtual Environment."

**Hwang, S.,** Lee, J., Kim, Y., Seo, Y., and Kim, S.

*US Patent App. 18/783,599 || KR Patent App. 10-2023-0,155,898*

**[cc.2]** "Mobility-Linked Virtual Reality-Based Underwater Exploration Immersive Content Game Software (Underwater Exploration & Ocean Trash Collection Game)."

Kim, S., Kang, S., Kang, Y., Kim, K., Seong, M., An, E., Yang, H., Yeo, D., Oh, J., Jeon, H., Jo, T., and **Hwang, S.**

*Copyright for Computer Program Works C-2022-050134*

**[cc.1]** "Mobility-Linked Virtual Reality-Based Underwater Exploration Immersive Content Game Software (Underwater Exploration & Underwater Gem Collection Game)."

Kim, S., Kang, S., Kang, Y., Kim, K., Seong, M., An, E., Yang, H., Yeo, D., Oh, J., Jeon, H., Jo, T., and **Hwang, S.**

*Copyright for Computer Program Works C-2022-050133*

TEACHING EXPERIENCE

**▣ 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

**▣ Honorable Mentions, 2024 CHI conference on Human Factors in Computing Systems** May 2024

• Honorable mention for being in the top 5% of conference papers *(ErgoPulse)*

**▣ Honorable Mentions, 2024 CHI conference on Human Factors in Computing Systems** May 2024

• Honorable mention for being in the top 5% of conference papers *(SYNC-VR)*

**▣ 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

**▣ Special Recognitions, ACM UIST** May 2023

• Special Recognitions for Outstanding Reviews in 2023 UIST

**▣ 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, United States** 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

**▣ University of Chicago, Human Computer Integration Lab** January 2024

• Invited Presentation (hosted by Pedro Lopes).

**▣ HCI Korea 2024, ACM SIGCHI** January 2024

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

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$.

**▣** **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