**Seokhyun (Shawn) Hwang Ph.D. Student | University of Washington**

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| --- | --- |
| **▣ 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** | Information Science, Information School (Expected)Sep 2024 – Present

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

**▣ Gwangju Institute of Science and Technology, Korea** | Intelligent Robotics, School of Integrated Technology Sep 2021 – Aug 2023

*Master of Science (M.S.) (Advisor: SeungJun Kim)*

**▣ Gwangju Institute of Science and Technology, Korea** | Department of Mechanical Engineering Mar 2017 – Aug 2021

*Bachelor of Science (B.S.)*

**PROFESSIONAL EXPERIENCE**

**▣ University of Washington |** Teaching Assistant Sep 2024 – Present

**▣ Gwangju Institute of Science and Technology** | Research AssociatesSep 2023 – Aug 2024

**▣ Gwangju Institute of Science and Technology** | Teaching Assistant Sep 2021 – Aug 2023

**▣ Human-Centered Intelligence Systems Lab** | Research Intern (Advisor: SeungJun Kim) Jan 2021 – Aug 2021

**▣ Intelligent Medical Robotics Lab** | Research Intern (Advisor: Jungwon Yoon) Jun 2020 – Dec 2020

**▣** **BA Energy Lab** | Industrial-Academic Intern Dec 2019 – Feb 2020

**▣ National University of Laos |** Experiment InstructorJul 2019

• 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** | Instructor, Experiment Team Leader, Design Team Leader Jan 2019

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

**TECHNICAL STRENGTHS**

**▣** **Modeling & Designing** | Autodesk Inventor, Fusion 360, Blender, KiCad

**▣** **Software & Tools** | COMSOL Multiphysics, LABVIEW, MATLAB, Unity, Cubase, Adobe Premiere Pro, Final Cut Pro

**▣** **Programming Languages** | C, C#, Python, JAVA, MATLAB

**CONFERENCES & JOURNALS**

**[c.8]** Kang, S., Kim, G., **Hwang, S.,** Park, J., Elsharkawy, A., and Kim, S. "Flip-Pelt: Motor-Driven Peltier Elements for Rapid Thermal Stimulation and Congruent Pressure Feedback in Virtual Reality"

*Proceedings of the 2024 ACM Symposium on User Interface Software and Technology (Accepted)*

**[c.7]** Kim, G., **Hwang, S.,** Seong, M., Yeo, D., Daniela Rus, and Kim, S. "TimelyTale: A Multimodal Dataset Assessing Passenger's Demands for Explanations in Highly Automated Vehicles"

*Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, Vol. 8, No.3*

**[c.6]** Jo, T., Yeo, D., Kim, G., **Hwang, S.,** and Kim, S. "WatchCap: Improving Scanning Efficiency in People with Low Vision through Compensatory Head Movement Stimulation."

*Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, Vol. 8, No. 2*

**[j.2]** Lee, J., **Hwang, S.,** Kim, K., and Kim, S. "Evaluation of Visual, Auditory, and Olfactory Stimulus-Based Attractors for Intermittent Reorientation in Virtual Reality Locomotion."

*Virtual Reality****28****, 104 (2024)*

**[c.5] Hwang, S.,** Oh, J., Kang, S., Seong, M., Elsharkawy, A., and Kim, S. "ErgoPulse: Electrifying Your Lower Body With Biomechanical Simulation-based Electrical Muscle Stimulation Haptic System in Virtual Reality." 🏆 **Honorable mention**

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

**[c.4]** Elsharkawy, A., Ataya, A., Yeo, D., An, E., **Hwang, S.,** and Kim, S."SYNC-VR: Synchronizing Your Senses to Conquer Motion Sickness for Enriching In-Vehicle Virtual Reality." 🏆 **Honorable mention**

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

**[j.1]** Lee, J., **Hwang, S.,** Ataya, A., and Kim, S. "Effect of Optical Flow and User VR Familiarity on Curvature Gain Thresholds for Redirected Walking."

*Virtual Reality****28****, 35 (2024)*

**[c.3] Hwang, S.,** Kim, Y., Seo, Y, and Kim, S."Enhancing Seamless Walking in Virtual Reality: Application of Bone-Conduction Vibration in Redirected Walking." 🏆 **Honorable mention**

*2023 IEEE International Symposium on Mixed and Augmented Reality (ISMAR)*

**[c.2]** Kang, Y., Choi, S., An, E., **Hwang, S.,** and Kim, S."Designing Virtual Agent Human–Machine Interfaces Depending on the Communication and Anthropomorphism Levels in Augmented Reality." 🏆 **Honorable mention**

*Proceedings of the 2023 International Conference on Automotive UI*

**[c.1] Hwang, S.,** Lee, J., Kim, Y., Seo, Y, and Kim, S. "Electrical, Vibrational, and Cooling Stimuli-Based Redirected Walking: Comparison of Various Vestibular Stimulation-Based Redirected Walking Systems."

*Proceedings of the 2023 CHI conference on Human Factors in Computing Systems*

**POSTERS & WORKSHOPS**

**[w.4]** **Hwang, S.,** Kang, S., Oh, J., Park, J., Shin, S., Yiyue Luo, Joseph DelPreto, Wojciech Matusik, Daniela Rus, and Kim, S. "Proposal of a Framework for Enhancing Teleoperation Experience with Biomechanical Simulation-Based Electrical Muscle Stimulation in Virtual Reality"

*UbiComp '24: Companion of the 2024 on ACM International Joint Conference on Pervasive and Ubiquitous Computing*

**[w.3]** Elsharkawy, A., Ataya, A., Yeo, D., Seong, M., **Hwang, S.,** Joseph DelPreto, Wojciech Matusik, Daniela Rus, and Kim, S. "Adaptive In-Vehicle Virtual Reality for Reducing Motion Sickness: Manipulating Passenger Posture During Driving Events"

*UbiComp '24: Companion of the 2024 on ACM International Joint Conference on Pervasive and Ubiquitous Computing*

**[w.2]** Choi, Y., Yeo, D., **Hwang, S.,** Seong, M., Moon, J., Yiyue Luo, Wojciech Matusik, Daniela Rus, and Kim, K. "Intelligence Walker: A Seamless Mobility Assist Device for the Elderly."

*2024 IEEE ICRA Workshop on Wearable*

**[w.1]** Kang, S., Kim, G., **Hwang, S.,** Park, J., Elsharkawy, A., and Kim, S."Dual-sided Peltier Elements for Rapid Thermal Feedback in Wearables."

*2024 IEEE ICRA Workshop on Wearable*

**[p.4]**  Kim, Y., **Hwang, S.,** Oh, J., and Kim, S. "GaitWay: Gait Data-Based VR Locomotion Prediction System Robust to Visual Distraction."

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

**[p.3]** Gim, B., Kang, S., Kim, G, Yeo, D., **Hwang, S.,** and Kim, S. "Curving the Virtual Route: Applying Redirected Steering Gains for Active Locomotion in In-Car VR."

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

**[p.2] Hwang, S.,** Lee, J., Kim, Y., and Kim, S."REVES: Redirection Enhancement Using Four-Pole Vestibular Electrode Stimulation."

*Extended Abstracts of the 2022 CHI conference on Human Factors in Computing Systems*

**[p.1]** Lee, J., **Hwang, S.,** Kim, K., and Kim, S."Auditory and Olfactory Stimuli-Based Attractors to Induce Reorientation in Virtual Reality Forward Redirected Walking."

*Extended Abstracts of the 2022 CHI conference on Human Factors in Computing Systems*

**PATENTS & COPYRIGHTED CONTENTS**

**[pa.1]** **Hwang, S.,** Lee, J., Kim, Y., Seo, Y., and Kim, S. "Method and System for Supporting Walking in Virtual Environment."

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

**[cc.1, 2]** 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.** "Mobility-Linked Virtual Reality-Based Underwater Exploration Immersive Content Game Software (**cc.2:** Underwater Exploration & Ocean Trash Collection Game). & (**cc.1:** Underwater Exploration & Underwater Gem Collection Game)."

*Copyright for Computer Program Works* ***cc.2:*** *C-2022-050134 &* ***cc.1:*** *C-2022-050133 (KR)*

**AWARDS & HONORS**

**▣ Gell Mason Endowed Fellowship, University of Washington** Sep 2024

**▣ Provost-Funded Fellow, University of Washington** Sep 2024

**▣ Startup Funding, University of Washington** Sep 2024

**▣ Special Recognitions, ACM IMWUT |** Outstanding Reviews in 2024 IMWUTAug 2024

**▣ Honorable Mentions, 2024 CHI conference on Human Factors in Computing Systems |** Top 5% of Conference Papers [c.5]May 2024

**▣ Honorable Mentions, 2024 CHI conference on Human Factors in Computing Systems |** Top 5% of Conference Papers [c.4]May 2024

**▣ Honorable Mentions, IEEE International Symposium on Mixed and Augmented Reality |** 2nd Prize of Conference Papers [c.3] Oct 2023

**▣ Honorable Mentions, International ACM Conference on Automotive UI |** Top 5% of Conference Papers [c.2]Sep 2023

**▣ Special Recognitions, ACM UIST |** Outstanding Reviews in 2023 UISTMay 2023

**▣ President Award, GIST |** 1st Prize in Table Tennis Robot at the 4th GIST Creative Convergence Competition in 2020Aug 2020

**▣ Scholarship for Academic Excellence** Sep 2020 – Dec 2020

**▣ Industry-Academic Cooperation Scholarship** Dec 2019 – Feb 2020

**▣ Scholarship for Overseas Summer Semester Exchange Students** | Boston University Exchange Student Scholarship Jun 2018 – Aug 2018

**▣ Government Supported Scholarship, Korea** | Bachelor’s Degree Government Scholarship Mar 2017 – Aug 2021

**INVITED TALKS**

**▣ University of Chicago, Human Computer Integration Lab |** Invited Presentation (hosted by Pedro Lopes)Jan 2024

**▣ HCI Korea 2024, ACM SIGCHI |** Invited Presentation on “Vestibular Stimuli-Based Redirected Walking” (hosted by Inseok Hwang)Jan 2024