Hee-Seung Moon

Ph.D. Candidate
hs.moon@yonsei.ac.kr | hsmoon121.github.io

EDUCATION

Yonsei University, South Korea *March 2015 – Present*
Ph.D., School of Integrated Technology, College of Engineering
Advisor: Jiwon Seo & Byungjoo Lee

Yonsei University, South Korea *March 2012 – February 2015*
B.S., School of Integrated Technology, College of Engineering
Highest GPA in the graduation class of 2015 in the department

EXPERIENCE

Naver AI Lab *April 2021 – October 2021*
Research Intern *Mentor: Minsuk Chang*
Investigating inverse modeling techniques for reinforcement learning-based user simulators.

Yonsei University *March 2015 – Present*
Research Assistant *Intelligent Unmanned Systems Laboratory (Prof. Jiwon Seo)*
· Developing deep learning-based haptic guidance assisting users in performing tasks.
· Developing imaginary rollout-based robot training method engaging with humans.
· Investigating the effects of haptic information on human multi-tasking.
· Research interests: human–computer interaction, computational interaction, artificial intelligence.

Teaching Assistant
· Mechatronics Project, IIT4312 (Prof. Jiwon Seo) *Sprint 2017 & Spring 2018*
· Cognitive Science, IIT1301 (Prof. Jongsoo Baek) *Spring 2016*

Samsung Design Membership *2014 – 2016*
UX Designer
Participated in UX design research projects and industrial activities with the support of Samsung Electronics.

PUBLICATIONS

Journal and Conference Papers

Fast User Adaptation for Human Motion Prediction in Physical Human–Robot Interaction
H.-S. Moon and J. Seo
IEEE Robotics and Automation Letters (RA-L), 2021.

Optimal Action-based or User Prediction-based Haptic Guidance: Can You Do Even Better?
H.-S. Moon and J. Seo
Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI 2021).

Prediction of Human Trajectory Following a Haptic Robotic Guide Using Recurrent Neural Networks
H.-S. Moon and J. Seo
2019 IEEE World Haptics Conference (WHC).

Observation of Human Response to a Robotic Guide Using a Variational Autoencoder
H.-S. Moon and J. Seo
2019 Third IEEE International Conference on Robotic Computing (IRC).

Monitoring and Mitigation of Ionospheric Anomalies for GNSS-based Safety Critical Systems: A Review of Up-to-date Signal Processing Techniques
J. Lee, Y. J. Morton, J. Lee, **H.-S. Moon**, and J. Seo
IEEE Signal Processing Magazine, vol. 32, no. 5, 2017.

Effect of Redundant Haptic Information on Task Performance during Visuo-Tactile Task Interruption and Recovery
H.-S. Moon, J. Baek, and J. Seo
Frontiers in Psychology, vol. 7, art. 1924, 2016.

Poster Papers

Dynamic Difficulty Adjustment via Fast User Adaptation
H.-S. Moon and J. Seo
The Adjunct Publication of the 33rd Annual ACM Symposium on User Interface Software and Technology (UIST 2020 Poster).

Adaptive UI from Human Behavior Pattern on Small Screen Interface: Focused on Double-Swipe Interface
H.-S. Moon and D. Y. Ju
17th International Conference on Human-Computer Interaction (HCI International 2015 Poster).

Preprint Papers

Sample-Efficient Training of Robotic Guide Using Human Path Prediction Network
H.-S. Moon and J. Seo
arXiv preprint arXiv:2008.05054, 2020.

PATENTS

Apparatus and method for predicting walking paths using of user moving along a robot guide
H.-S. Moon and J. Seo
10-2020-0015720, Filed on 10 February 2020, South Korea.

AWARDS AND HONORS

Graduate Fellowship *2015 – 2018*
ICT Consilience Creative Program, Ministry of Science and ICT, South Korea

Best Paper Award *2017*
2017 Korea Navigation Institute (KONI) Conference

Minister's Award *2014*
Minister's Award, Ministry of Science and ICT, South Korea

Undergraduate Fellowship *2012 – 2015*
ICT Consilience Creative Program, Ministry of Science and ICT, South Korea

Academic Excellence Award *Spring 2014, Spring & Fall 2013*
Yonsei University, South Korea