

Hee-Seung Moon

Ph.D. Candidate

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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

- Aalto University** March – May 2022 (tentative)
Visiting Doctoral Student User Interfaces Research Group (Prof. Antti Oulasvirta)
Research collaboration on the AI-based inverse modeling with user simulators.
- Naver AI Lab** April – 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 Lab (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

- Speeding up Inference with User Simulators through Policy Modulation
H.-S. Moon, S. Do, W. Kim, J. Seo, M. Chang, and B. Lee
Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (CHI 2022), to appear.
- 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), vol. 7, no. 1, 2022.
- 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 – 2019

ICT Consilience Creative Program, Ministry of Science and ICT, South Korea

Best Paper Award

2017

2017 Korea Navigation Institute (KONI) Conference

Minister Award

2014

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