Hee-Seung Moon

hee-seung.moon@aalto.fi | hsmoon121.github.io

CURRENT POSITION

Aalto University, Finland   September 2022 – Present
Postdoctoral Researcher   User Interfaces Research Group (Advisor: Antti Oulasvirta)
Research interests: human–computer interaction, computational interaction, user behavior simulation.

EDUCATION

Yonsei University, South Korea   August 2022
Ph.D., School of Integrated Technology, College of Engineering   Advisor: Jiwon Seo & Byungjoo Lee
Thesis Title: Adaptation of Deep User Behavior Model for Personalized Interaction

Yonsei University, South Korea   February 2015
B.S., School of Integrated Technology, College of Engineering

EXPERIENCE

Aalto University   March – May 2022
Visiting Doctoral Student   User Interfaces Research Group (Advisor: Antti Oulasvirta)
Developed ML-based inverse modeling methods for user behavior simulation models.

Naver AI Lab   April – October 2021
Research Intern   Mentor: Minsuk Chang
Developed RL-based user modeling methods under different cognitive-physical characteristics.

Yonsei University   March 2015 – Present
Research Assistant   Intelligent Unmanned Systems Lab (Advisor: Jiwon Seo)
· Developed ML-based haptic guidance assisting users in performing tasks.
· Developed imaginary rollout-based robot training method engaging with humans.
· Investigated the effects of haptic information on human multi-tasking.

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).

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.

Sample-Efficient Training of Robotic Guide Using Human Path Prediction Network
H.-S. Moon and J. Seo
IEEE Access, in press, 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).

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, Registered on 22 April 2021, South Korea.

AWARDS AND HONORS

Excellent Academic Paper Award 2022
Yonsei University, South Korea

Graduate Fellowship 2015 − 2019
ICT Consilience Creative Program, Ministry of Science and ICT, South Korea

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

Minister Award 2014
Ministry of Science and ICT, South Korea

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