Hee-Seung Moon

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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

Amortized Inference with User Simulations
H.-S. Moon, A. Oulasvirta, and B. Lee
Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI 2023), to appear.

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, vol. 10, 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).

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
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

Special Recognitions for Outstanding Reviews
$1 \times$ CHI 2022 paper, $2 \times$ CHI 2023 papers

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