

Inhyuk Song

Kyung Hee University | Artificial Intelligence | Human-Computer Interaction
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Research interests

Computational models of human perception and action; tactile perception; adaptive physical feedback; personalized interaction design.

Education

Kyung Hee University - Master's studies in Artificial Intelligence

September 2025 - August 2027 (expected) · GPA: **4.2 / 4.3**

Adviser: **Seungjae Oh**

Kyung Hee University - Bachelor's degree in Software Convergence

March 2018 - August 2025

College of Software Convergence · Game Contents Track

Military service: **Republic of Korea Air Force**, July 2020 - April 2022.

Accepted conference paper

Minha Jeon, Yeseo Park, **Inhyuk Song**, Yilong Lin, Seungwoo Je, and Seungjae Oh. **SwapSense: Reusable Vision-Based Contact Force Sensing Across Swappable Passive Haptic Modules.**

ACM Symposium on User Interface Software and Technology (**UIST 2026**). Accepted.

Contribution: multidimensional scaling analysis.

Conference presentations and posters

Inhyuk Song, Hee-Seung Moon, and Seungjae Oh. **Comparing Peripheral Signal Representations for Predicting Perceived Intensity of Vibrotactile Stimuli.** Korean Haptics Conference 2026. Presented.

Inhyuk Song and Seungjae Oh. **Spacewalk Locomotion Technique and Tactile Feedback for Enhancing VR Experience while Lying Down.** Korean Haptics Conference 2024. Accepted for poster presentation.

Selected projects

Inhyuk Song and Kihyun Park. **Making Mid-air Button Contact Perceptible: Adaptive Feedback Model for Enhancing Interaction Saliency in VR.** WHC 2025 Student Innovation Challenge.

Led project design, implementation, experimental design, and analysis. Developed adaptive vibrotactile feedback for mid-air button interaction and evaluated pressing behavior in an exploratory user study.

Undergraduate team projects: Hand-tracked VR locomotion (March-June 2024); RGB-D scene reconstruction and proximity-aware VR guidance (September-December 2023). [Project details](#).

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Research experience

ITEM Lab, Kyung Hee University

Graduate Student Researcher: **September 2025 - present**

Undergraduate Researcher: **September 2024 - August 2025**

- **Tactile perception modeling:** Developed computational models of tactile perception and evaluated their predictions against psychophysical data.
- **Adaptive mid-air feedback:** Led the design, implementation, and exploratory evaluation of a vibrotactile feedback system that adapts to pressing behavior.
- **SwapSense:** Conducted multidimensional scaling (MDS) analysis of perceptual relationships among interchangeable haptic modules.
- **Current direction:** Developing a research approach connecting perceptual modeling, biomechanical simulation, and reinforcement learning for personalized physical interaction.

Teaching experience

Teaching Assistant - Game Engineering (SWCON314)

Kyung Hee University · **2026 - present**

- Lead practical sessions as the course's sole teaching assistant.
- Course topics include kinematics and numerical optimization in Unreal Engine, hand-motion prediction, and neural-network inference in Unity.

Teaching Assistant - Game Interactive Technology (SWCON312)

Kyung Hee University · **Spring 2026**

- Supported practical instruction in Unity input systems, custom HID integration, VR controller input, and hand tracking and pose detection.

Teaching Assistant - Introduction to Game Programming (SWCON211)

Kyung Hee University · **Fall 2025**

- Supported Python/Pygame labs on motion simulation, collision detection (AABB/SAT), impulse-based collision response, and PyOpenGL rendering.

Academic service

- **Student Volunteer**, IEEE World Haptics Conference (**WHC 2025**).

Courses and workshops

- **Introduction to Computational Cognitive Modeling** - CHI 2025 course participant.
- **Mind & Motion: Opportunities and Applications of Integrating Biomechanics and Cognitive Models in HCI** - UIST 2025 workshop participant.

Research methods

Computational perceptual modeling; tactile-afferent simulation; representation learning; model ablation; psychophysical data analysis; multidimensional scaling; VR prototyping; experimental design and analysis.