JUN WOO KIM | Curriculum Vitae

Ph.D. Student, Interaction Laboratory, POSTECH

kjw8515@postech.ac.kr • Interaction Lab • Google Scholar • (+82) 10-4172-8514

SUMMARY

I am currently an **Ph.D. student at Interaction Laboratory, POSTECH**, South Korea. My primary areas of interest include **Haptics, VR/AR, and Human-Computer Interaction (HCI)**. My research is primarily focused on enhancing user experience (UX) and immersion in both AR/VR and real-world environments through advanced haptic technologies. Specifically, I am dedicated to the development of **HAPTIC RENDERING** algorithms. This work aims to create more realistic and engaging interactions by leveraging the nuances of haptic feedback in various applications.

EDUCATION

POHANG UNIVERSITY OF SCIENCE AND TECHNOLOGY (POSTECH)
Pohang, South Korea

Computer Science and Engineering
Doctor of Philosophy Student (Ph.D. Student)
09/2021 ~ present

PUSAN NATIONAL UNIVERSITY (PNU)
Pusan, South Korea

Electrical Engineering (Major)
Embedded Software (Interdepartmental Major)
Bachelor of Science (B.S.) GPA: 4.08/4.5
03/2014 - 08/2021

PUBLICATIONS

INTERNATIONAL JOURNAL ARTICLES

[J1] Jiwan Lee, **Junwoo Kim**, Jeonggoo Kang, Eunsoo Jo, Dong Chul Park, and Seungmoon Choi. Telemetry-based Haptic Rendering for Racing Game Experience Improvement. **IEEE Transaction on Haptics (ToH)**

INTERNATIONAL CONFERENCE PAPERS

[C3] **Junwoo Kim**, Jaejun Park, Chaeyong Park, and Seungmoon Choi. Human Identification Performance of Vibrotactile Stimuli Applied on the Torso along Azimuth or Elevation. **2024 EuroHaptics Conference (EH'24)**.

[C2] Jaejun Park, **Junwoo Kim**, Sangyoon Han, Chaeyong Park, and Seungmoon Choi. Information Transfer of Full-Body Vibrotactile Stimuli: An Initial Study with One to Three Sequential Vibrations. **2023 IEEE World Haptics Conference (WHC'23)**, p. 41-47.

[C1] **Junwoo Kim**, Heeyeon Kim, Chaeyong Park, and Seungmoon Choi. Human Recognition Performance of Simple Spatial Vibrotactile Patterns on the Torso. **2023 IEEE World Haptics Conference (WHC'23)** , p. 20-27.

DOMESTIC CONFERENCE PAPERS (KOREA)

[C3] **Junwoo Kim**, Jaejun Park, Chaeyong Park, Junseok Park, and Seungmoon Choi, Measurement of Perceived Elevation Angles of Vibrotactile Stimuli on the Torso. **Proceedings of Korea Haptics Conference (KHC'23)**, November 22-24, 2023.
김준우, 박재준, 박채용, 박준석, 최승문, "몸통에서의 진동 촉각 자극에 대한 인지된 고도각 측정", **한국 햅틱스 학술대회 논문집**, 11.22-24, 2023.

[C2] **Junwoo Kim**, Heeyeon Kim, Chaeyong Park, and Seungmoon Choi, "Spatial Masking Effect Based on the Intensity of Vibrotactile Stimuli Using a Haptic Suit," **Proceedings of HCI Korea (KHCI'23)**, pp. 348-353, February 1-3, 2023.
김준우, 김희연, 박채용, 최승문, "햅틱 슈트를 이용한 진동 자극의 세기에 따른 공간 마스킹 효과", **한국 HCI 학술대회 논문집**, 348-353쪽, 02.01-03, 2023.

[C1] Jaejun Park, **Junwoo Kim**, Sangyoon Han, Chaeyong Park, Junseok Park, and Seungmoon Choi, "Estimating Information Transfer for Sequential Full Body Vibrotactile Stimuli," **Proceedings of HCI Korea (KHCI'23)**, pp. 425-430, February 1-3, 2023. (Best Paper Award)
박재준, **김준우**, 한상윤, 박채용, 박준석, 최승문, "순차적으로 제공된 전신 진동 자극에 대한 정보 전송량 추정", **한국 HCI 학술대회 논문집**, 425-430쪽, 02.01-03, 2023 (우수논문상)

POSTERS & DEMONSTRATIONS

[D3] **Haptic Developer: Junwoo Kim**, et al. Breaking The Ice. **ARS Electronica 2023**, Festival for Art, Technology & Society, Austria.

[D2] **Haptic Designer: Junwoo Kim**, et al. Ballet Metanique. **ARS Electronica 2022**, Festival for Art, Technology & Society, Austria.

[D1] Sngmoo Lee, Jihyun Jung, Chungyean Cho and **Junwoo Kim**. Scarecrow XR. **Proceedings of the SIGGRAPH Asia 2022 (SA'22)**, Real-Time Live!. p. 1-1.

HONORS & AWARDS

THIRD PRIZE | Student Innovation Challenge (SIC) — Korea Haptics Conference (KHC'23)

FUNDED RESEARCH PROJECTS

2024.07 ~ 2025.06 (PRESENT) Development of a Haptic Feedback Algorithm Based on Vibrating Seats to Enhance Immersion in In-Vehicle Video Contents (PM*)
Hyundai NGV (Hyundai Automobile Company)

2024.06 ~ 2024.11 Analysis of Information Transfer in Visual-to-Tactile Substitution Technology (PM*)
Electronics and Telecommunications Research Institute (ETRI)

2023.07 ~ 2024.06 Development of Tactile Standards and High-Fidelity Integrated Haptic System for the Realization of a Hyper-realistic Metaverse
National Research Council of Science and Technology, Convergence Research Center

2023.05 ~ 2023.11 Multimodal Tactile Stimulation Cognitive Analysis and Visual-to-Tactile Substitution Experiment
Electronics and Telecommunications Research Institute (ETRI)

2022.09 ~ 2023.07 Semantic Sound-to-Haptic Automatic Conversion: Metaverse, Full-body Haptic Effects, and Accessibility
Mid-Career Researcher Program, National Research Foundation (NRF)

2022.07 ~ 2023.06 Research on Function Advancement to Improve the Marketability of Vibration Seat
Hyundai NGV (Hyundai Automobile Company)

2022.05 ~ 2022.10 Development of Tactile Substitution Platform of Visual Information
Electronics and Telecommunications Research Institute (ETRI)

2021.06 ~ 2023.12 Development of Contents Metaverse Based on XR and AI (PM*)
Korea Creative Content Agency (KOCCA)

Domestic patents

APPARATUS AND METHOD FOR CONTROLLING HAPTIC FEEDBACK 햅틱 피드백 제어 장치 및 방법
Application: 10-2023-0181229 (2023.12.13; South Korea)
Application: 18/820.825 (2024.08.30; United States)
Application: 202411349517.1 (2024.09.26; China)

Students mentored

2023 | Two Undergraduate, Computer and Science Engineering, POSTECH

Skills

HAPTICS | Tactile/Kinesthetic Rendering, Haptic Sensing, Perceptual Studies
HARDWARE | Circuit Design, Sensor-based Hardware Design
PROGRAMMING | C/C++/C#, Unity, Python, MATLAB, Arduino, SAS
SIGNAL PROCESSING | Digital Signal Processing - Visual/Auditory Signal Processing

Media

"촉각-후각까지 느끼는 가상공간… 예술-기술의 경계 넘는 경험해보세요." 동아일보. 2022.11.23