

Nahyun Lee

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Daejeon, South Korea

RESEARCH INTERESTS

Augmenting how we perceive the world.

My research explores the intersection of Cognitive Augmentation, Sensing, and Human-Computer Interaction. I aim to help people interpret an information-overloaded world.

EDUCATION

- **Sungkyunkwan University** Feb 2023 – Present
B.S. in Mechanical Engineering, Software Engineering, and Self-Designed Major in HCI Suwon, South Korea
 - GPA: 4.34/4.50
- **Hanyang University** Mar 2022 – Dec 2022
Bachelor of Business Administration Coursework (First-Year Completed) Seoul, South Korea

RESEARCH EXPERIENCE

- **Wearable and Interactive Technology Lab, KAIST** Jan 2026 – Present
Research Intern, Advised by Prof. Ian Oakley Daejeon, South Korea
 - Investigating beamforming-based audio sensing to enhance perception of everyday information
 - Developing audio-driven granular synthesis for high-DOF vibrotactile feedback in haptic interaction
- **Smart Biomedical Lab, Sungkyunkwan University** Jun 2025 – Dec 2025
Research Intern, Advised by Prof. Jowoon Chong Suwon, South Korea
 - Developed a load cell- and IMU-based muscle function assessment device with BLE
 - Built a mobile app for real-time sensing and accessible interaction for older adults
 - Collaborated with Korea University Medicine and KAIST on muscle function assessment for older adults
- **Interaction Independence Study, Stanford Center at the Incheon Global Campus** Mar 2024 – Dec 2025
Research Assistant, Advised by Hoseok Jung Incheon, South Korea
 - Prototyped thermal haptic interfaces based on radiative and convective heat transfer
 - Developed a physics-based fire visualization pipeline using Fire Dynamics Simulator (FDS) for AR/VR
 - Collaborated with TU Wien and Imperial College London on thermal haptics for firefighter training

PUBLICATIONS

C=CONFERENCE, J=JOURNAL, P=POSTER, D=DEMO, W=WORKSHOP, S=IN SUBMISSION

- [S.2] Hoseok Jung, Jiyoung Lee, **Nahyun Lee** and Hyunmin Kang (2026).
Real-Time Thermal Haptics for Fire Simulation: Modeling Radiative and Convective Heat Transfer from Fire Dynamics Data
- [S.1] Hoseok Jung, Jiyoung Lee, **Nahyun Lee**, Sooyeon Lee, Seungwon Hu, Boyoung Kim, Okkeun Lee, Hyochang Kim, and Hyunmin Kang (2026).
Designing a Data-Driven Mars Exploration VR Simulation: An Encounter-Type Thermo-Kinesthetic Haptic Approach
- [P.1] **Nahyun Lee** and Hyeon Jeon (2026).
Is This Enough to Decide? Facilitating Informed Investment Decisions by Visualizing Missing Evidence
ACM Conference on Human Factors in Computing Systems Extended Abstracts (CHI EA 2026)
- [C.5] Myeongjun Kim*, Seungmin Lee*, Junjae Park*, **Nahyun Lee***, and Jo Woon Chong (2025).
A Low-Cost Quantitative Evaluation Testbed of Small-Sized IMU Sensor Modules Using a Smartphone
The 10th International Conference on Consumer Electronics Asia (ICCE-Asia 2025)
- [C.4] Hoseok Jung, Jiyoung Lee, Sungmo Lee, and **Nahyun Lee** (2025).
Encounter-type Force and Thermal Haptics for VR with a Wrist-Worn Articulated Robot
Korea Society of Design Science, 2025 Fall International Conference (KSDS 2025)
- [C.3] Hoseok Jung*, Dongho Shin, **Nahyun Lee**, Minseo Yu, Kyuhyoung Cho, and Gyungsun Go (2024).
Mars Exploration Simulation with an Encounter-type Multimodal Haptic Device
Korea Society of Design Science, 2024 Spring International Conference (KSDS 2024)

- [C.2] Jiyeon Lee, Jiwon Yang, ChungHyun Lee, **Nahyun Lee**, Hyunmin Kang, and Hoseok Jung (2024).
Proposal for a Virtual Reality Mars Exploration Exhibit Utilizing Reverse-Temperature Multi-Modal Haptic Devices for Popularizing Space Science
International Symposium of Science Museums 2024 (ISSM 2024)
- [C.1] Doohwan Kim, Yohan Han, Inhyuk Jeong, Yeongseok Hwang, Jinju Park, **Nahyun Lee**, Yujin Lee (2024).
LLM-based chatbot system to improve worker efficiency and prevent safety incidents
Korea Society of Computer Information, 2024 Winter Conference (KSCI 2024)

ACADEMIC SERVICES

STUDENT VOLUNTEERS


- IEEE International Symposium on Mixed and Augmented Reality (ISMAR 2025)

REVIEWER

- ACM SIGCHI Conference on Human Factors in Computing Systems (CHI 2026)

EXPERIENCE

INDUSTRY EXPERIENCE

- **Modly** *Feb 2025 - Jan 2026*
Suwon, South Korea
Co-Founder
 - Selected for the Korean I-Corps program (Ministry of Science and ICT); trained at George Washington University
 - Led business strategy for a 3D scanning service, conducting 100+ user interviews to identify viable applications
- **AiGENDA**  *Jun 2024 - Aug 2024*
Suwon, South Korea
AI Developer
 - Developed a lecture-based video Q&A system using STT, LLMs, and LangChain
 - Enhanced domain-specific terminology recognition (60% → 98%) using RAG and vector databases

TEACHING EXPERIENCE

- **Tutoring Program for International Students – Data Structures** *Sep 2025 – Dec 2025*
Suwon, South Korea
Sungkyunkwan University
 - Provided group tutoring for international students enrolled in Data Structures (SWE2015)
- **XR Systems & AI Integration Seminar Lead** *Jul 2025 – Sep 2025*
Suwon, South Korea
Building Information Science & Technology Lab (BIST), Sungkyunkwan University
 - Taught XR development (Unity, Quest, AI pipelines) and guided application in architectural engineering

LEADERSHIP EXPERIENCE

- **Korean I-Corps Project** *Jun 2025 – Jul 2025*
Washington, DC, USA
Ministry of Science and ICT & National Research Foundation
 - Completed training in technology commercialization and venture development at George Washington University
- **President – KingoSmartThings (AI-IoT Entrepreneurship Student Organization)** *Dec 2024 – Feb 2026*
Suwon, South Korea
Sungkyunkwan University
 - Organized campus-wide hackathons (30+ participants) in collaboration with SKKU RISE Center and ICT College
- **Sungkyunkwan University Representative – Young Engineers Honor Society** *Dec 2024 – Dec 2025*
Seoul, South Korea
National Academy of Engineering of Korea
 - Selected as one of three students at Sungkyunkwan University for engineering excellence and leadership

SCHOLARSHIPS

- **Presidential Science Scholarship (~\$18,500)** *Jul 2025 – Present*
Ministry of Science and ICT
- **Cho Byung-Doo Scholarship (~\$5,400)** *Apr 2025 – Sep 2025*
Cho Byung-Doo Scholarship Foundation
- **Korea Entegris Scholarship (~\$2,300)** *Sep 2024*
Entegris
- **Hyeong-Ae Scholarship (~\$4,600)** *Mar 2024 – Sep 2024*
Hyeong-Ae Scholarship Foundation
- **Top 3% Academic Excellence Scholarship (~\$4,200)** *Sep 2023 – Feb 2024*
Sungkyunkwan University
- **Student Success Creativity Scholarship (~\$3,500)** *May 2023*
Sungkyunkwan University

HONORS AND AWARDS

- **Excellence Award – Excellent Study Club Program** *Feb 2026*
Sungkyunkwan University
- **President’s Award – URP III (Undergraduate Interdisciplinary Research Program)** *Dec 2025*
Institute for Cross-disciplinary Studies, Sungkyunkwan University
- **Excellence Award – Embedded Software Competition (Open Innovation Track)** *Nov 2024*
Ministry of Trade, Industry and Energy & Korea Electronics Technology Institute
- **Engineering Innovation Award – Samsung Medical Service Design Program** *Jan 2024*
Bio-Digital Healthcare Consortium, Sungkyunkwan University

ADDITIONAL INFORMATION

Languages: Korean (Native), English (Full professional)

Interests: Birdwatching, Financial Planning, Long-Term Strategy