

## Jiwan Kim (김지완)

HCI (Around-device sensing on wearables, Digital Phenotyping) / WIT-LAB / KAIST  
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### RESEARCH INTEREST

Jiwan Kim is a second-year Ph.D. student at the School of Electrical Engineering in KAIST, advised by Professor Ian Oakley in WIT Lab. Jiwan's research interest lies in 'Around-device sensing on wearables' and 'Digital Phenotyping'. Nowadays, he focuses on enabling expressive and seamless interactions on wearables using around-device sensing technologies.

### EDUCATION

- 2024.03 – **Korea Advanced Institute of Science and Technology (KAIST)**, Korea  
*Ph.D. in school of Electrical Engineering, WIT Lab, advisor: Ian Oakley*  
*GPA: 4.15/4.3*
- 2021.03 – 2024.02. **Ulsan National Institute of Science and Technology (UNIST)**, Korea  
*Master in school of Design, Interactions Lab, advisor: Ian Oakley*  
*GPA: 4.15/4.3*
- 2013.03 – 2021.02. **Ulsan National Institute of Science and Technology (UNIST)**, Korea  
*B.S. in school of Human Factor Engineering & Computer engineering*  
*GPA: 4.07/4.3 | Major: 4.13/4.3*

### RESEARCH EXPERIENCE

- 2025.01 – 2025.02 **SciFi Lab**, Computing and Information Science, Cornell University, Ithaca, NY, USA  
2025.07 – 2025.07 (Advisor: Cheng Zhang)  
Visiting Researcher (Advanced acoustic sensing system)
- 2023.11 – 2024.02 **Hyper-Reality Metaverse Research Lab at ETRI**, Daejeon, Korea  
Research Assistant (Dynamic pose estimation on mobile devices)
- 2023.02 – 2023.08 **School of Computing and Information Systems, University of Melbourne**, Melbourne, Australia (Advisor: Vassilis Kostakos)  
Visiting Researcher (Digital phenotyping on mobile devices)
- 2019.09 - 2021.02 **Interactions Lab**, Dept. of Human Factor Engineering UNIST, Ulsan, Korea  
Research Intern / Advisor: Ian Oakley
- 2018.03 - 2018.07 **IVADER Lab**, Dept. of Human Factor Engineering UNIST, Ulsan, Korea  
Data research Intern / Advisor: Sungahn Ko

## **PUBLICATION**

- 2025 (ACM CHI) Kian Mahmoodi\*, Yudong Xie\*, Tan Gemicioglu\*, Chi-Jung Lee, **Jiwan Kim**, and Cheng Zhang. 2025. EchoForce: Continuous Grip Force Estimation from Skin Deformation Using Active Acoustic Sensing on a Wristband. Proceedings of the 2025 ACM International Symposium on Wearable Computers.  
[\[preprint\]](#) | [\[To appear\]](#)
- 2025 (ACM CHI) **Jiwan Kim**, Jiwan Son, and Ian Oakley. 2025. Cross, Dwell, or Pinch: Designing and Evaluating Around-Device Selection Methods for Unmodified Smartwatches. Proceedings of the 2025 CHI conference on Human Factors in Computing systems.  
[\[DOI\]](#) | [\[Video\]](#) | [\[Open Source\]](#)
- 2025 (ACM CHI) **Jiwan Kim**, Mingyu Han, and Ian Oakley. 2025. BudsID: Mobile-Ready and Expressive Finger Identification Input for Earbuds. Proceedings of the 2025 CHI conference on Human Factors in Computing systems.  
[\[DOI\]](#) | [\[Video\]](#) | [\[Open Source\]](#)
- 2025 (ACM ETRA) Yeji Park, **Jiwan Kim**, and Ian Oakley. 2025. GazeHandSync: Mitigating Late-Trigger Errors for Seamless Gaze-Hand Interactions. ETRA '25 Short Papers: ACM Symposium on Eye Tracking Research and Applications.  
DOI: To appear
- 2024 (IJHCS) **Kim, J.**, Lee, D., Han, M., Kim, J., Kostakos, V., & Oakley, I. (2024). Unpacking Instagram use: The impact of upward social comparisons on usage patterns and affective experiences in the wild. *International Journal of Human-Computer Studies*, 103323.  
[\[DOI\]](#)
- 2022 (ACM CHI) **Jiwan Kim**, and Ian Oakley. 2022. SonarID: Using Sonar to Identify Fingers on a Smartwatch. Proceedings of the 2022 CHI conference on Human Factors in Computing systems.  
[\[DOI\]](#) | [\[Video\]](#) | [\[Open Source\]](#)
- 2021 (ACM CHI) Doyoung Lee, **Jiwan Kim**, and Ian Oakley. 2021. FingerText: Exploring and Optimizing Performance for Wearable, Mobile and One-handed Typing. Proceedings of the 2021 CHI conference on Human Factors in Computing systems.  
[\[DOI\]](#) | [\[Video\]](#)

## **POSTER / DEMO PAPERS**

- 2025 UbiComp DC **Jiwan Kim**. 2025. Toward Expressive and Seamless Interaction on Wearables Using Around-Device Sensing. In Companion of the 2025 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp'25, Doctoral Colloquium)  
[\[To appear\]](#)
- 2024 (ACM UIST) **Jiwan Kim**, Hohurn Jung, and Ian Oakley. 2024. VibraHand: In-Hand Superpower Enabling Spying, Precognition, and Telekinesis. In The Adjunct Publication of the 37th Annual ACM Symposium on User Interface Software and Technology

(UIST '24 Adjunct).  
\* **Best People's Choice Award**,  
[\[DOI\]](#) | [\[Video\]](#)

2023 (UbiComp) **Jiwan Kim**, Jongjin Park, and Ian Oakley. 2023. SonarAuth: Using Around Device Sensing to Improve Smartwatch Behavioral Biometrics (UbiComp-ISWC '23 Poster)  
[\[DOI\]](#) | [\[Video\]](#)

2022 (ACM UIST) **Jiwan Kim** and Hyunjae Gil. 2022. Top-Levi: Multi-User Interactive System Using Acoustic Levitation. In The Adjunct Publication of the 35th Annual ACM Symposium on User Interface Software and Technology (UIST '22 Adjunct).  
\* **Best Jury Award (\$1000), Honorable Mention for People's Choice (\$500)**  
[\[DOI\]](#) | [\[Video\]](#)

## **WORKSHOP PAPERS**

2025 (UbiComp) **Jiwan Kim\***, Chi-Jung Lee\*, Xiaoran Fan, Dong Li, Edison Thomaz, Alanson Sample, Ian Oakley, and Cheng Zhang. 2025. BeyondSound: The First Workshop on Intelligent Acoustic Sensing on Wearables. In Companion of the 2025 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp'25, Workshop Proposal)  
[\[Website\]](#) | [\[CFP\]](#)

2025 (UbiComp) **Jiwan Kim**, Hohurn Jung, and Ian Oakley. 2025. OpenAcoustics: An Open-Source Framework for Acoustic Data Capture on Smart Devices and Microcontrollers. In Companion of the 2025 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp'25, Beyond Sound Workshop).

2024 (UbiComp) Yeji Park, **Jiwan Kim**, and Ian Oakley. 2024. The Impact of Gaze and Hand Gesture Complexity on Gaze-Pinch Interaction Performances. In Companion of the 2024 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp Companion '24),  
DOI: <https://doi.org/10.1145/3675094.3678990>

2023 (IEEE BigComp) **Jiwan Kim**, Doyoung Lee, Jaeho Kim, and Ian Oakley. 2023. Can Eye Gaze Improve Emotional State Detection on Off the Shelf Smart Devices. In IEEE BigComp 2023 Workshop on "IoT Big Data for Health and Wellbeing".  
DOI: <https://doi.org/10.1109/BigComp57234.2023.00090>

2022 (ACM CHI) **Jiwan Kim** and Ian Oakley. 2022. New Sensors and Features for Digital phenotyping on Off the Shelf Smart Devices. In CHI 2022 Workshop on "The Future of Emotion in Human-Computer Interaction".  
Link: [PDF](#)

## **ACADEMIC SERVICE**

Organizer	UbiComp-ISWC 2024 SV Co-chair, UIST 2025 Registration Co-chair
Session Chair	UIST 2025 Interacting with Fingers and Hands Session Chair
Reviewer (30 +)	CHI (24, 25), UIST (25), IHCI (24, 25), DIS (24), IMWUT (24, 25), ISS (23, 24), TEI (24, 25), CHI-LBW (24, 25), MobileHCI LBW (23)

SV CHI 2022, UbiComp 2024 (CO-chair)

## **RESEARCH GRANT**

- 2024.09 – 2026.08 **National Research Foundation of Korea (NRF)**  
Around-Device Sensing and Interaction On Wearables  
PI, \$50,000 for 2024.09 - 2026.08, Outcome: **SonarSelect**
- 2024.07 - **Information Technology Research Center (ITRC)**  
Spatial Computing HCI Technology for Everywhere XR Productivity Workstation  
Participating Researcher (PI: Prof. Geehyuk Lee), 2024.07 - ,  
Outcome: **SonarSelect**, **BudsID**
- 2024.05 – 2024.12 **KAIST, Venture Research Program**  
Developing a Smart Ring Companion For Wearable Input  
Lead Researcher, \$10,000 for 2024.05 - 2024.12, Outcome: **VibraHand**
- 2023.03 – 2026.02 **National Research Foundation of Korea (NRF)**  
Multimodal Interaction for Augmented Reality  
Participating Researcher (PI: Prof. Ian Oakley), 2023.03 - 2026.02, Outcome: **BudsID**,  
**GazeHandSync**
- 2021.07 – 2023.06 **National Research Foundation of Korea (NRF)**  
행동중재 디지털치료 콘텐츠 개발 및 데이터 수집·분석·표준화 시스템 구축  
Participating Researcher (PI: Prof. Hyungsook Kim), 2021.07 - 2023.06,  
Outcome: **Unpacking Instagram Use**
- 2021.03 – 2023.02 **Ministry of Trade, Industry and Energy of Korea (MOTIE)**  
New Technology Convergence Design Professional Training Project (NTCDPT)  
Lead Researcher (PI: Prof. Ian Oakley), 2021.03 - 2023.02, Outcome: **SonarID**
- 2020.06 – 2023.02 **National Research Foundation of Korea (NRF)**  
WalkAR: Enabling Mobile Input For Smart Glasses  
Participating Researcher (PI: Prof. Ian Oakley), 2020.06 - 2023.02,  
Outcome: **FingerText**

## **RECOGNITION**

2024. 10 **Best People's Choice Award**  
VibraHand: In-Hand Superpower Enabling Spying, Precognition, and Telekinesis.  
Awarded by 2024 UIST Student Innovation Contest.
- 2024.04 **Presidential Science Scholarship for Graduate Student**  
대학원 대통령 과학장학생 (Acc.Rate: 4%, \$96,000 for 4 yrs)  
Awarded by the President of Korea.
2022. 11 **Best Jury Award, Honorable Mention for People's Choice**  
Top-Levi: Multi-User Interactive System Using Acoustic Levitation.  
Awarded by 2022 UIST Student Innovation Contest.

2021. 05	<b>Finer Winner</b> , Junction-X-Seoul 2021 (3,000,000 KRW) One of the biggest global Hackathon in Korea
2021. 02	<b>Minister's Award (Top of the school)</b> , UNIST commencement ceremony Awarded by the Minister of Science, ICT and Future Planning
2019. 11	<b>3<sup>rd</sup> prize</b> Uni-Code programming contest, HEXA & NAVER
2018. 12	<b>Award for devotion</b> , UNIST, Korea Contribution to school development by student activity(student president)
2017. 12	<b>Best prize, Capstone Design Award</b> Awarded by Ergonomics society of Korea, Korea
2017. 05	<b>Best prize, 9<sup>th</sup> Design Contest for other 90%</b> , Awarded by Korean ministry of science, ICT, Korea
2016-2019	<b>Academic Achievement Award</b> 2016 Spring(4.06/4.3), 2016 Fall(4.22/4.3) 2017 Spring(4.12/4.3), 2017 Fall(3.94/4.3) 2019 Fall(4.20/4.3)

## **ACTIVITIES**

2022.12	2022 Korea Science Technology Festival(대한민국 과학기술대전), <b>Demo work</b> Breathing Detection System Using Sonar on Off-the-Shelf Smartphone
2020.01 – 2023.02	<b>President(2021.02-), Executive board member(2020.01-2021.02)</b> , DINO(Making club; using Arduino) @ UNIST
2020.03 – 2020.10	Launch <b>COVID-19 Tracking Map for Ulsan Region</b> , Template for Other Region Jiwan Kim(Developer, Leader), Daeseong Jeon(Developer), Taeyoon Kim(Design) <a href="https://news.unist.ac.kr/unist-students-launch-covid-19-tracking-map-for-ulsan-region/">https://news.unist.ac.kr/unist-students-launch-covid-19-tracking-map-for-ulsan-region/</a>
2019.03 - 2019.08	<b>Grill &amp; Fry Chef</b> , The Chicken Shed, Cairns, Australia
2018.03 - 2019.03	<b>Student President</b> , UNIST, Ulsan, Korea
2016 - 2018	<b>Director</b> , Humans of UNIST, Ulsan, Korea Telling UNIST people's little stories in SNS and published 2 books. <a href="http://www.facebook.com/humansofunist">www.facebook.com/humansofunist</a>
2017.07-08	<b>World Friends ICT Volunteering</b> , Regent University, Accra, Ghana Teaching web programming/ Android programming / Culture exchange
2016.07-08	<b>World Friends ICT Volunteering</b> , DEOKE Foundation School, Accra, Ghana Teaching MS Office program / Culture exchange
2014.01 – 2016.01	<b>Military service</b> as a graphic designer at the Republic of Korea Air Force