

Daehwa Kim

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RESEARCH INTERESTS

My research goal is to invent technologies that could change the interaction paradigm as if the invention of "mouse" paved the way for the world of GUIs. I believe that preferable devices by users could decide next decades of interaction paradigm. To do so, I care about the tangled relationship between what humans are already familiar with, feel comfortable with, and emotionally attracted to, and what kind of technological / design problems to solve. Some demonstrations of this idea are published - explored novel sensing principles of segmenting effortless finger touch (AtaTouch) and shifting the form factor of the micro-gesture sensing device to a wristband from a ring (EtherPose). I presented papers at ACM CHI and UIST and have received two Honorable Mention awards at CHI.

EDUCATION

- Ph.D. student, Carnegie Mellon University**, School of Computer Science, Sep 2022 – Current
Human-Computer Interaction Institute
- Advised by Prof. Chris Harrison at Future Interfaces Group
- M.Sc., KAIST**, School of Computing Mar 2019 – Feb 2021
- Advised by Prof. Geehyuk Lee at Human-Computer Interaction Lab
 - Thesis: "OddEyeCam: Sensing Technique for Body-Centric Peephole Interaction Using WFoV RGB and N FoV Depth Cameras" (2020 Best Thesis Award)
- B.S., UNIST**, Electrical and Computer Engineering Mar 2015 – Feb 2019
- Computer Science and Engineering (Major) and Electrical Engineering (Minor)
 - Entered with top honors.
 - Summer session program, University of the Arts London, London, UK Jul 2018

RESEARCH EXPERIENCE

- Meta Reality Labs**, Redmond, WA May 2023 – Aug 2023
- Research Intern
 - Mentor: Dr. Eric Whitmire
- Future Interfaces Group**, Carnegie Mellon University, Pittsburgh, PA Sep 2021 – Apr 2022
- Research Associate, Human-Computer Interaction Institute
 - Advisor: Prof. Chris Harrison
- KAIST HCI Lab**, Daejeon Mar 2018 – Jun 2018
- Undergraduate Research Student, School of Computing
 - Advisor: Prof. Geehyuk Lee
- Hyper-connected Communication Research Laboratory**, ETRI Jan 2018 – Mar 2018
- Research Intern

AWARDS & HONORS

- Best Paper Honorable Mention Award**, ACM CHI 2022 May 2022
- Craig Shultz, [Daehwa Kim](#), Karan Ahuja, and Chris Harrison, "TriboTouch: Micro-Patterned Surfaces for Low Latency Touchscreens" in *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems*, New Orleans, LA, USA, Apr 2022.
- Best Paper Honorable Mention Award**, ACM CHI 2021 May 2021
- [Daehwa Kim](#), Keunwoo Park, and Geehyuk Lee, "AtaTouch: Robust Finger Pinch Detection for a VR Controller Using RF Return Loss" in *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, Yokohama, Japan.
- Best Master's Thesis Award**, KAIST School of Computing Feb 2021
- Thesis: "OddEyeCam: Sensing Technique for Body-Centric Peephole Interaction Using WFoV RGB and N FoV Depth Cameras"
- Uni-Star Scholarship**, UNIST Mar 2015 – Feb 2019
- Tuition + academic funding every semester for the top rank in entrance exam

PUBLICATIONS

- [1] Hui-Shyong Yeo, Erwin Wu, Daehwa Kim, Juyoung Lee, Hyung-il Kim, Seo Young Oh, Luna Takagi, Woontack Woo, Hideki Koike, and Aaron J Quigley, “OmniSense: Exploring Novel Input Sensing and Interaction Techniques on Mobile Device with Omni-Directional Camera” in *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*, Hamburg, Germany, Apr 2023.
- [2] Daehwa Kim, and Chris Harrison, “EtherPose: Continuous Hand Pose Tracking with Wrist-Worn Antenna Impedance” in *Proceedings of the 35th Annual ACM Symposium on User Interface Software and Technology*, Bend, Oregon, USA, Oct 2022.
- [3] Craig Shultz, Daehwa Kim, Karan Ahuja, and Chris Harrison, “TriboTouch: Micro-Patterned Surfaces for Low Latency Touchscreens” in *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems*, New Orleans, LA, USA, Apr 2022. **Best Paper Honorable Mention Award; Top 5%**
- [4] Daehwa Kim, Keunwoo Park, and Geehyuk Lee, “AtaTouch: Robust Finger Pinch Detection for a VR Controller Using RF Return Loss” in *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, Yokohama, Japan. **Best Paper Honorable Mention Award; Top 5%**
- [5] Daehwa Kim, Keunwoo Park, and Geehyuk Lee, “OddEyeCam: A Sensing Technique for Body-Centric Peephole Interaction Using WFoV RGB and NFoV Depth Cameras” in *Proceedings of the 33rd Annual ACM Symposium on User Interface Software and Technology*, Virtual Event, USA, Oct 2020.
- [6] Keunwoo Park, Daehwa Kim, Seongkook Heo, and Geehyuk Lee, “MagTouch: Robust Finger Identification for a Smartwatch Using a Magnet Ring and a Built-in Magnetometer” in *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, Honolulu, Hawaii, USA, Apr 2020.

ACADEMIC SERVICE

Reviewer

- SIGGRAPH Asia '23 Poster, UIST '23, CHI '23, UIST '22, CHI '22 LBW, IMWUT '21, CHI '21 LBW