Daehwa Kim

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RESEARCH INTERESTS

My research goal is creating naturalistic and intimate computing experience by exploring high-fidelity interface technologies. This interest can be applied for various domains, particularly wearable computing, mobile computing and extended reality environments. I presented several papers at ACM CHI and UIST and have been recognized with two Best Paper Honorable Mention awards at CHI.

EDUCATION

Ph.D. student, Carnegie Mellon University, School of Computer Science,
Human-Computer Interaction Institute   Sep 2022 – Current
- 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 NFoV 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, UAL (University of the Arts London), London, UK   Jul 2018

PUBLICATIONS

[1] 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%

[2] 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%

[3] 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.

[4] 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.

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 NFoV Depth Cameras"

RESEARCH EXPERIENCE

Future Interfaces Group, Carnegie Mellon University
- Full-time Research Associate, Human-Computer Interaction Institute   Sep 2021 – Apr 2022
  - Project: Exploring new touch input and human pose tracking technologies.
  - Advisor: Prof. Chris Harrison

HCI Lab, KAIST

	▪ Undergraduate Research Student, School of Computing	Mar 2018 – Jun 2018
	• Project: PCB design for a hand gesture sensing wristband.	
	• Advisor: Prof. Geehyuk Lee	
	• Focus: human-computer interaction, PCB design, physical prototyping	

ACADEMIC SERVICE

Reviewer
- UIST '22, CHI '22 LBW, IMWUT '21, CHI '21 LBW

PROJECTS

Audio Hero   Sep 2019 – Dec 2019
- Sound-based danger detection system using VGGish deep learning model
- Skills: Deep learning, Signal processing

VRone   Sep 2018 – Dec 2018
- 3-dimensional force feedback in VR using a personal and commercial drone
- Skills: Unity C# programming, Android programming

System Light 2.0 @ ETRI   Jan 2018 – Mar 2018
- Smart Home project - Building IoT system for lights
- Skills: Computer network, Natural language processing

VibCat   Oct 2017 – Dec 2017
- Vibration Categorization for Input & Interaction
- Skills: Machine learning, Android programming

Finger joystick interaction   Feb 2017 – Nov 2017
- Interaction technique to support finger's directional input using capacitive image of a smartwatch's touchscreen
- Skills: Machine learning, Android programming

Poem a moment   Mar 2017 – Jun 2017
- An android software that shows Yoon Dongju's poems on the wallpaper
- Available on Google Play store (download 1000+)
- Skills: Android programming

TUIT Android Lecture   Jun 2016 – Sep 2016
- Android development lecture provided to TUIT university students
- Skills: Android programming, Object-oriented programming

Mr.Bill   Jun 2016 – Jul 2016
- Algorithm and system to provide optimal Dutch pay way
- Available on Google Play store (download 500+)
- Skills: Android programming, Graph theory