Daehwa Kim

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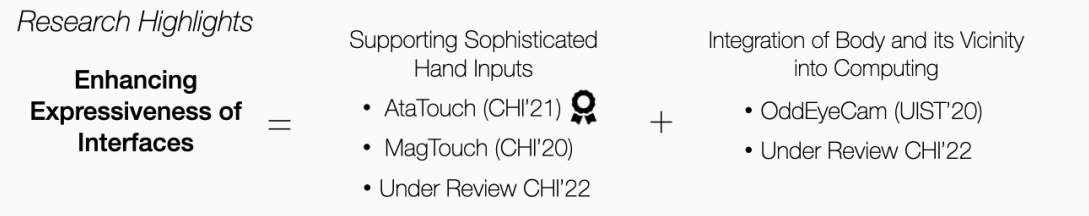
RESEARCH INTERESTS

My research goal is to expand the expressiveness of interfaces so that it creates new and pleasant experiences for users. Computers that can understand and support the physical world's high degrees of freedom will let users have intuitive interactions and intimate computing experiences. I presented full papers at ACM CHI and UIST and have received an Honorable Mention award at CHI 2021.



PUBLICATIONS

CONFERENCES

[1] 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. (full paper) Honorable Mention Award

[2] 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. (full paper)

[3] 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. (full paper)

[4] 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. (Conditionally Accepted)

PROFESSIONAL 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

EDUCATION

KAIST, Human-Computer Interaction Lab — Mar 2019 – Feb 2021

- M.S. in School of Computing
  - Adviser: Prof. Geehyuk Lee
  - Thesis: "OddEyeCam: Sensing Technique for Body-Centric Peephole Interaction Using WFoV RGB and NFoV Depth Cameras" (2020 Best Thesis Award)
    - Thesis Committee: Geehyuk Lee (Chair), Juho Kim, Uichin Lee

UNIST, Electrical and Computer Engineering — Mar 2015 – Feb 2019

- B.S. in Computer Science and Engineering (Major)
  B.S. in Electrical Engineering (Minor)
  - Thesis: "VRone: 3D Force Feedback System in VR Using a Commercial Drone"
  - Entered with top honors.
- Summer session program, ual: (University of the Arts London), London, UK — Jul 2018

AWARDS & SCHOLARSHIPS

Honorable Mention Award, ACM CHI 2021 — Mar 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"

4th Place, NAVER × UNIST Undergraduate Poster Award — Dec 2017
- Topic: "VibCat: Vibration Categorization for Input and Interaction".
- Awarded by NAVER CEO.
- Received an award of 1,000,000 KRW.

Excellence Award, World Friends ICT volunteers return report 2016 — Dec 2016
- Dispatched to Uzbekistan to provide Android software development lectures to university students.
- Awarded by the Director of National Information Society Agency.
- Received an award of Samsung Galaxy Tab 4 10.1.

Dean's List, UNIST
- 2017 Fall Dean's List: GPA 4.05/4.3 — Jan 2018
- 2017 Spring Dean's List: GPA 3.98/4.3 — Jul 2017
- 2016 Fall Dean's List: GPA 3.90/4.3 — Feb 2016
- 2016 Spring Dean's List: GPA 4.06/4.3 — Aug 2016
- 2015 Spring Dean's List: GPA 4.00/4.3 — Jul 2015

Uni-Star Scholarship, UNIST — Mar 2015 – Feb 2019
- Entered with top honors.
- Tuition + academic support fee of 1,000,000 KRW were paid each semester.

Overseas Training Scholarship, UNIST — Jun 2018
- Financial aid for the summer session program at University of the Arts London

RESEARCH EXPERIENCE

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

Hyper-connected Communication Research Laboratory, ETRI
- Research Intern, IoT Research Division — Jan 2018 – Mar 2018
  - Project: Smart Home project - Building IoT lighting system controlled by user's voice
  - Advisors: Dr Jungsik Sung and Daeho Kim
  - Focus: IoT network system, Natural language processing

iHCI Lab (Intelligent Human Computer Interaction Lab), UNIST
- Undergraduate Research Student, Electrical and Computer Engineering — Feb 2017 – Nov 2017
  - Project: Finger Joystick Interaction
  - Advisor: Prof. Sungahn Ko
  - Focus: human-computer interaction, capacitive sensing, visualization

TEACHING EXPERIENCE

Teaching Assistant, AI Lab - Learning Commons II, UNIST — Sep 2018 – Dec 2018

Head of Android Software Developement Team, HeXA, UNIST — Feb 2017 – Dec 2017

Instructor, Tashkent University of Information Technologies (TUIT) — Jul 2016 – Sep 2016
- Excellence Award, World Friends ICT volunteers return report 2016

ACADEMIC SERVICE

Reviewer
- CHI '21 LBW

CAMPUS ACTIVITIES

D2 factory, NAVER
- Campus Partner — Feb 2016 – Feb 2017
  - Hosted the 2nd Hackathon at UNIST, sponsored by NAVER and UNIST ECE

HeXA (Hacker's eXciting Academy), UNIST
- A computer security & development research group
- Vice-President — Feb 2016 – Feb 2017
- Head of Android software development team — Feb 2017 – Dec 2017
  - Provided regular anndroid-development lectures for club members

UNIST Media Center, UNIST
- Video Editor — Mar 2015 – Feb 2017
- Representative work

- My Age 22 - Travel to Europe with a drone
- Web drama: The town where engineers live

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

[*CV compiled on 2021-11-17 for Acme Corporation*]