Daehwa Kim

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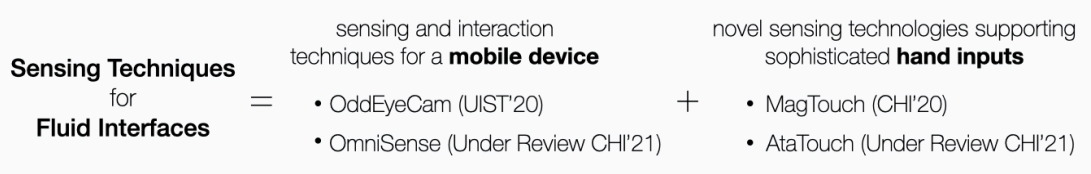
RESEARCH INTERESTS

My research goal is engineering for a fluid interface, which defines as a computer become a part of the environment and human body to enable seamless interaction so that users even unaware of it. My prior research lies in (a) sensing and interaction techniques for a mobile device, and (b) novel sensing technologies supporting sophisticated hand inputs. I published full papers at ACM CHI and UIST.



EDUCATION

KAIST, School of Computing — Mar 2019 – Feb 2021 (Expected)

- M.S. student at Human-Computer Interaction Lab
  - Thesis: "OddEyeCam: Sensing Technique for Body-Centric Peephole Interaction Using WFoV RGB and NFoV Depth Cameras" (To be)
  - Adviser: Prof. Geehyuk Lee
  - Focus: Sensing Techniques

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

Gyeongsan Science High School, High school diploma — Mar 2013 – Feb 2015

- Early graduated with UNIST President's Award.
- Club Activity: Physics Research Team, English Journal Club

PUBLICATIONS

CONFERENCES

[1] 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)

[2] 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)

SUBMITTED

[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)

[2] Hui-Shyong Yeo, Erwin Wu, Daehwa Kim, Juyoung Lee, Hyung-il Kim, Luna Takagi, Woontack Woo, Hideki Koike, and Aaron J Quigley, "OmniSense: Exploring Novel Input Sensing and Interaction Techniques on Mobile Device with OmniDirectional Camera" in *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, Yokohama, Japan. (full paper)

RESEARCH EXPERIENCE

HCI Lab, KAIST

- Undergraduate Research Student, School of Computing — Mar 2018 – Jun 2018
  - Project: PCB design for a hand gesture sensing wristband.
  - Supervisors: Prof. Geehyuk Lee
  - Focus: PCB design

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
  - Supervisors: 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
  - Supervisors: Prof. Sungahn Ko
  - Focus: human-computer interaction, visualization

AWARDS & SCHOLARSHIPS

4th Prize, NAVER x 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 development lectures to university students.
- Awarded by the Director of National Information Society Agency.
- Received an award of Samsung Galaxy Tab 4 10.1.

Academic Achievement Award, UNIST

- 2017 Fall Academic Achievement Award: GPA 4.05/4.3 — Jan 2018
- 2017 Spring Academic Achievement Award: GPA 3.98/4.3 — Jul 2017
- 2016 Fall Academic Achievement Award: GPA 3.90/4.3 — Feb 2016
- 2016 Spring Academic Achievement Award: GPA 4.06/4.3 — Aug 2016
- 2015 Spring Academic Achievement Award: 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

TEACHING EXPERIENCE

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

Head of Android 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

CAMPUS ACTIVITIES

D2 factory, NAVER

- Campus Partner — Feb 2016 – Feb 2017
  - Hosted the 1st 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 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

PERSONAL 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 application 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 2020-11-12 for Acme Corporation*]