

# Daehwa Kim

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## RESEARCH INTERESTS

My research goal is engineering for a fluid interface, exploring a seamless integration of a computer and human that makes new and pleasant experiences. My prior research lies in (a) novel sensing technologies supporting sophisticated hand inputs and (b) sensing and interaction techniques for a mobile device. I published full papers at ACM CHI and UIST.

<b>Sensing Techniques</b> for <b>Fluid Interfaces</b>	=	novel sensing technologies supporting sophisticated <b>hand inputs</b> • AtaTouch (Cond. Accepted CHI'21) • MagTouch (CHI'20)	+	sensing and interaction techniques for a <b>mobile device</b> • OddEyeCam (UIST'20) • OmniSense (Ongoing)
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## EDUCATION

**KAIST**, School of Computing

Mar 2019 – Feb 2021 (Expected)

- M.S. student at Human-Computer Interaction Lab
  - Adviser: Prof. Geehyuk Lee
  - Focus: Sensing Techniques
  - Thesis: “OddEyeCam: Sensing Technique for Body-Centric Peephole Interaction Using WFoV RGB and N FoV 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.
  - Graduated with Magna Cum Laude
- Summer session program, ual: (University of the Arts London), London, UK

Jul 2018

## PUBLICATIONS

### CONFERENCES

- [1] [Daehwa Kim](#), Keunwoo Park, and Geehyuk Lee, “AtaTouch: Robust Finger Pinch Detection for a VR Controller Using RF Return-Loss” To Appear in *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, Yokohama, Japan. (full paper, To Appear) **Honorable Mention Award**
- [2] [Daehwa Kim](#), Keunwoo Park, and Geehyuk Lee, “OddEyeCam: A Sensing Technique for Body-Centric Peephole Interaction Using WFoV RGB and N FoV 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)

## RESEARCH EXPERIENCE

**HCI Lab, KAIST**

- Undergraduate Research Student, School of Computing
  - Project: PCB design for a hand gesture sensing wristband.
  - Supervisors: Prof. Geehyuk Lee
  - Focus: human-computer interaction, PCB design, physical prototyping

Mar 2018 – Jun 2018

**Hyper-connected Communication Research Laboratory, ETRI**

- Research Intern, IoT Research Division
  - 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

Jan 2018 – Mar 2018

**iHCI Lab (Intelligent Human Computer Interaction Lab), UNIST**

- Undergraduate Research Student, Electrical and Computer Engineering
  - Project: Finger Joystick Interaction
  - Supervisors: Prof. Sungahn Ko

Feb 2017 – Nov 2017

- Focus: human-computer interaction, visualization

<b>AWARDS &amp; SCHOLARSHIPS</b>	<b>Honorable Mention Award</b> , 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” To Appear in <i>Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems</i> , Yokohama, Japan.	
	<b>Best Master’s Thesis Award</b> , KAIST School of Computing	Feb 2021
	▪ Thesis: “OddEyeCam: Sensing Technique for Body-Centric Peephole Interaction Using WFoV RGB and N FoV Depth Cameras”	
	<b>4th Prize</b> , 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.	
	<b>Excellence Award</b> , World Friends ICT volunteers return report 2016	Dec 2016
	▪ Dispatched to Uzbekistan to provide Android development lectures to university students.	
<b>TEACHING EXPERIENCE</b>	▪ Awarded by the Director of National Information Society Agency.	
	▪ Received an award of Samsung Galaxy Tab 4 10.1.	
	<b>Dean’s List</b> , 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
	<b>Uni-Star Scholarship</b> , UNIST	Mar 2015 – Feb 2019
	▪ Entered with top honors.	
<b>ACADEMIC SERVICE</b>	▪ Tuition + academic support fee of 1,000,000 KRW were paid each semester.	
	<b>Overseas Training Scholarship</b> , UNIST	Jun 2018
	▪ Financial aid for the summer session program at University of the Arts London	
	<b>Teaching Assistant</b> , AI Lab - Learning Commons II, UNIST	Sep 2018 – Dec 2018
	<b>Head of Android Development Team</b> , HeXA, UNIST	Feb 2017 – Dec 2017
	<b>Instructor</b> , Tashkent University of Information Technologies (TUIT)	Jul 2016 – Sep 2016
	▪ Excellence Award, World Friends ICT volunteers return report 2016	
	<b>Reviewer</b>	
	▪ CHI ’21 LBW	
	<b>D2 factory</b> , NAVER	
<b>CAMPUS ACTIVITIES</b>	▪ Campus Partner	Feb 2016 – Feb 2017
	• Hosted the 2nd Hackathon at UNIST, sponsored by NAVER and UNIST ECE	
	<b>HeXA (Hacker’s eXciting Academy)</b> , UNIST	
	▪ A computer security & development research group	
	▪ Vice-President	Feb 2016 – Feb 2017
	▪ Head of Android development team	Feb 2017 – Dec 2017
	• Provided regular android-development lectures for club members	
	<b>UNIST Media Center</b> , UNIST	
	▪ Video Editor	Mar 2015 – Feb 2017
	▪ Representative work	
<b>PROJECTS</b>	• My Age 22 - Travel to Europe with a drone	
	• Web drama: The town where engineers live	
	<b>Audio Hero</b>	Sep 2019 – Dec 2019
	▪ Sound-based danger detection system using VGGish deep learning model	
	▪ Skills: Deep learning, Signal processing	
	<b>VRone</b>	Sep 2018 – Dec 2018
	▪ 3-dimensional force feedback in VR using a personal and commercial drone	

<ul style="list-style-type: none"> <li>▪ Skills: Unity C# programming, Android programming</li> </ul>	
<b>System Light 2.0 @ ETRI</b>	Jan 2018 – Mar 2018
<ul style="list-style-type: none"> <li>▪ Smart Home project - Building IoT system for lights</li> <li>▪ Skills: Computer network, Natural language processing</li> </ul>	
<b>VibCat</b>	Oct 2017 – Dec 2017
<ul style="list-style-type: none"> <li>▪ Vibration Categorization for Input &amp; Interaction</li> <li>▪ Skills: Machine learning, Android programming</li> </ul>	
<b>Finger joystick interaction</b>	Feb 2017 – Nov 2017
<ul style="list-style-type: none"> <li>▪ Interaction technique to support finger's directional input using capacitive image of a smartwatch's touchscreen</li> <li>▪ Skills: Machine learning, Android programming</li> </ul>	
<b>Poem a moment</b>	Mar 2017 – Jun 2017
<ul style="list-style-type: none"> <li>▪ An android application that shows Yoon Dongju's poems on the wallpaper</li> <li>▪ Available on Google Play store (download 1000+)</li> <li>▪ Skills: Android programming</li> </ul>	
<b>TUIT Android Lecture</b>	Jun 2016 – Sep 2016
<ul style="list-style-type: none"> <li>▪ Android development lecture provided to TUIT university students</li> <li>▪ Skills: Android programming, Object-oriented programming</li> </ul>	
<b>Mr.Bill</b>	Jun 2016 – Jul 2016
<ul style="list-style-type: none"> <li>▪ Algorithm and system to provide optimal Dutch pay way</li> <li>▪ Available on Google Play store (download 500+)</li> <li>▪ Skills: Android programming, Graph theory</li> </ul>	

[CV compiled on 2021-03-15 for Acme Corporation]