

Daehwa Kim

291, Daehak-ro, Yuseong-gu, Daejeon, Republic of Korea
daehwakim@kaist.ac.kr • +82 6860 8558 • <https://daehwa.github.io>

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. I am interested in sensing technologies, sensor fabrication, and AR/VR/MR interfaces. My prior research lies in sensing technologies for AR/VR interfaces and mobile & wearable interfaces. I presented full papers at ACM CHI and UIST and have received an Honorable Mention award at CHI 2021.

Research Highlights



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 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.
- 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

Mar 2018 – Jun 2018

- 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

Hyper-connected Communication Research Laboratory, ETRI

Jan 2018 – Mar 2018

- 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

iHCI Lab (Intelligent Human Computer Interaction Lab), UNIST

Feb 2017 – Nov 2017

- Undergraduate Research Student, Electrical and Computer Engineering
 - Project: Finger Joystick Interaction

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

AWARDS & SCHOLARSHIPS	Honorable Mention Award , ACM CHI 2021	Mar 2021
	▪ <u>Daehwa Kim</u> , 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.	
	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 development lectures to university students.	
TEACHING EXPERIENCE	▪ 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.	
ACADEMIC SERVICE	▪ 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 Assistant , AI Lab - Learning Commons II, UNIST	Sep 2018 – Dec 2018
	Head of Android Development 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	
	Reviewer	
	▪ CHI ’21 LBW	
	D2 factory , NAVER	
CAMPUS ACTIVITIES	▪ 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 development team	Feb 2017 – Dec 2017
	• Provided regular android-development lectures for club members	
	UNIST Media Center , UNIST	
	▪ Video Editor	Mar 2015 – Feb 2017
	▪ Representative work	
PROJECTS	• My Age 22 - Travel to Europe with a drone	
	• Web drama: The town where engineers live	
	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 2021-05-14 for Acme Corporation]