

Daehwa Kim

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RESEARCH INTERESTS

My research goal is engineering for a fluid interface; a computer becomes a part of the human body and environment that enable seamless interaction anywhere and with anyone. 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.

Sensing Techniques for Fluid Interfaces	=	novel sensing technologies supporting sophisticated hand inputs <ul style="list-style-type: none">• AtaTouch (Cond. Accepted CHI'21)• MagTouch (CHI'20)	+	sensing and interaction techniques for a mobile device <ul style="list-style-type: none">• 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 NFoV Depth Cameras”
 - 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” in *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, Yokohama, Japan. (full paper, Conditionally Accepted)
- [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)

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
 - Focus: human-computer interaction, visualization

Feb 2017 – Nov 2017

AWARDS & SCHOLARSHIPS	4th Prize , NAVER x UNIST Undergraduate Poster Award	Dec 2017
	<ul style="list-style-type: none"> ▪ 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
	<ul style="list-style-type: none"> ▪ 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	
	<ul style="list-style-type: none"> ▪ 2017 Fall Academic Achievement Award: GPA 4.05/4.3 ▪ 2017 Spring Academic Achievement Award: GPA 3.98/4.3 ▪ 2016 Fall Academic Achievement Award: GPA 3.90/4.3 ▪ 2016 Spring Academic Achievement Award: GPA 4.06/4.3 ▪ 2015 Spring Academic Achievement Award: GPA 4.00/4.3 	Jan 2018 Jul 2017 Feb 2016 Aug 2016 Jul 2015
	Uni-Star Scholarship , UNIST	Mar 2015 – Feb 2019
	<ul style="list-style-type: none"> ▪ Entered with top honors. ▪ Tuition + academic support fee of 1,000,000 KRW were paid each semester. 	
	Overseas Training Scholarship , UNIST	Jun 2018
	<ul style="list-style-type: none"> ▪ 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 Development Team , HeXA, UNIST	Feb 2017 – Dec 2017
	Instructor , Tashkent University of Information Technologies (TUIT)	Jul 2016 – Sep 2016
CAMPUS ACTIVITIES	<ul style="list-style-type: none"> ▪ Excellence Award, World Friends ICT volunteers return report 2016 	
	D2 factory , NAVER	
	<ul style="list-style-type: none"> ▪ Campus Partner <ul style="list-style-type: none"> • Hosted the 2nd Hackathon at UNIST, sponsored by NAVER and UNIST ECE 	Feb 2016 – Feb 2017
	HeXA (Hacker’s eXciting Academy) , UNIST	
	<ul style="list-style-type: none"> ▪ A computer security & development research group ▪ Vice-President ▪ Head of Android development team <ul style="list-style-type: none"> • Provided regular android-development lectures for club members 	Feb 2016 – Feb 2017 Feb 2017 – Dec 2017
	UNIST Media Center , UNIST	
	<ul style="list-style-type: none"> ▪ Video Editor ▪ Representative work <ul style="list-style-type: none"> • My Age 22 - Travel to Europe with a drone • Web drama: The town where engineers live 	Mar 2015 – Feb 2017
	Audio Hero	Sep 2019 – Dec 2019
	<ul style="list-style-type: none"> ▪ Sound-based danger detection system using VGGish deep learning model ▪ Skills: Deep learning, Signal processing 	
	VRone	Sep 2018 – Dec 2018
PROJECTS	<ul style="list-style-type: none"> ▪ 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
	<ul style="list-style-type: none"> ▪ Smart Home project - Building IoT system for lights ▪ Skills: Computer network, Natural language processing 	
	VibCat	Oct 2017 – Dec 2017
	<ul style="list-style-type: none"> ▪ Vibration Categorization for Input & Interaction ▪ Skills: Machine learning, Android programming 	
	Finger joystick interaction	Feb 2017 – Nov 2017
	<ul style="list-style-type: none"> ▪ 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 2020-12-19 for Acme Corporation]