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.

EDUCATION

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

- M.S. in School of Computing
  - Adviser: Prof. Geehyuk Lee
  - Focus: Sensing Techniques
  - 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.
  - 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 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 — Mar 2018 – Jun 2018
  - 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

- 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

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" To Appear 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 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.

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

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

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 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 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 2021-03-15 for Acme Corporation*]