Seongkook Heo

N1 #722, KAIST, 291 Daehak-ro, Yuseong-gu, Daejeon, South Korea
+82 (10) 3213-6273
seongkook@kaist.ac.kr
http://seongkookheo.com

Education

Present	**Ph.D. Candidate, Computer Science, KAIST, Daejeon, South Korea.**
2009	**M.Sc. Digital Media, KAIST, Daejeon, South Korea.**
2007	**B.S. Electric and Electronic Engineering, Sungkyunkwan University, Suwon, South Korea.**
2007	**B.S. Computer Engineering, Sungkyunkwan University, Suwon, South Korea. (Double Major)**

Internships

2016 Jan - Apr	**Autodesk Research, Toronto, Canada** Research Intern supervised by Tovi Grossman Developing interaction techniques for wearable devices
2015 May - Aug	**Microsoft Research, Redmond, USA** Research Intern supervised by Ken Hinckley Sensing techniques for mobile interaction
2008 Jun - Aug	**Samsung Advanced Institution of Technology (SAIT), Suwon, South Korea** Research Intern at Multi-modal Interaction Lab Designing multi-modal interaction techniques for consumer electronics
2005–2006	**AhnLab, Seoul, South Korea** Software Engineering Intern Testing personal security software UI and features

Peer-reviewed Papers and Notes

2016	Ken Hinckley, **Seongkook Heo**, Christian Holz, Hrvoje Benko, Abigail Sellen, Richard Banks, Kenton O'Hara, Gavin Smyth, and William Buxton. Pre-Touch Sensing for Mobile Interaction. *CHI '16*
2016	Jonggi Hong, **Seongkook Heo**, Poika Isokoski, and Geehyuk Lee. Comparison of Three QWERTY Keyboards for a Smartwatch. *Interacting with Computers, Oxford University Press*
2015	Jonggi Hong, **Seongkook Heo**, Poika Isokoski, and Geehyuk Lee. SplitBoard: A Simple Split Soft Keyboard for Wristwatch-sized Touch Screens. *CHI '15*
2014	**Seongkook Heo**, Jiseong Gu, and Geehyuk Lee. Expanding Touch Input Vocabulary by Using Consecutive Distant Taps. *CHI '14*

2014 Jaehyun Han, **Seongkook Heo**, Hyong-Euk Lee, and Geehyuk Lee.
IrPen: A 6-DOF Pen System to Support Over-the-surface Interactions with Tablet Computers. *IEEE Computer Graphics and Applications, 34(3)*

2013 **Seongkook Heo**, Jaehyun Han, and Geehyuk Lee.
Designing Rich Touch Interaction through Proximity and 2.5D Force Sensing Touchpad, *OZCHI '13*

2013 **Seongkook Heo** and Geehyuk Lee.
Indirect Shear Force Estimation for Multi-Point Shear Force Operations. *CHI '13*

2013 Jiseong Gu, **Seongkook Heo** Jaehyun Han, Sunjun Kim, and Geehyuk Lee.
LongPad: A TouchPad Using the Whole Area below the Keyboard on a Laptop. *CHI '13*

2013 Jinhyuk Choi, **Seongkook Heo**, Jaehyun Han, Geehyuk Lee, and Junehwa Song,
Mining Social Relationship Types in an Organization by using Communication Patterns, *CSCW '13*

2012 Jaehyun Han, Sangwon Choi, **Seongkook Heo**, and Geehyuk Lee.
Optical touch sensing based on internal scattering in a touch surface. *Electronics Letters*, 48(22):1420-1422, 2012

2012 **Seongkook Heo** and Geehyuk Lee.
ForceDrag: Using Pressure as a Touch Input Modifier. *OZCHI '12*

2011 **Seongkook Heo**, Jaehyun Han, Sangwon Choi, Seunghwan Lee, Geehyuk Lee, Hyong-Euk Lee, SangHyun Kim, Won-Chul Bang, DoKyoon Kim, and ChangYeong Kim.
IrCube tracker: an optical 6-DOF tracker based on LED directivity. *UIST '11*

2011 **Seongkook Heo** and Geehyuk Lee.
Force gestures: augmenting touch screen gestures with normal and tangential forces. *UIST '11*

2011 **Seongkook Heo** and Geehyuk Lee.
Forcetap: extending the input vocabulary of mobile touch screens by adding tap gestures. *MobileHCI '11*

2011 Jaehyun Han, **Seongkook Heo**, G Lee, Won-Chul Bang, DoKyoon Kim, and ChangYeong Kim.
6-DOF tracker using LED directivity. *Electronics Letters*, 47(3):177-178, 2011

Posters and Demonstrations

2014 Jaehyun Han, **Seongkook Heo**, and Geehyuk Lee.
Trampoline: A Double-sided Elastic Touch Device for Repousse and Chasing Techniques. *CHI '14 Works-in-progress*

2013 **Seongkook Heo**, and Geehyuk Lee.
Ta-Tap: Consecutive Distant Tap Operations for One-handed Touch Screen Use. *UIST '13 Poster*

2012 **Seongkook Heo**, Yong-ki Lee, Jiho Yeom, and Geehyuk Lee.
Design of a Shape Dependent Snapping Algorithm. *CHI '12 Works-in-progress*

2011 Sangwon Choi, Jaehyun Han, Sunjun Kim, **Seongkook Heo**, Geehyuk Lee,
ThickPad: A Hover-Tracking Touchpad for a Laptop, *UIST '11 Demo*

2011 **Seongkook Heo** and Geehyuk Lee.
Force gestures: augmented touch screen gestures using normal and tangential force. *CHI '11 Works-in-progress*

2008 **SeongKook Heo**, Dongwook Lee and Minsoo Hahn,
FloatingPad: A Touchpad Based 3D Input Device, *ICAT '08 Poster*

2008 Seungwoo Lee, **SeongKook Heo**, Youmin Kim, Youngjae Kim, Soojin Lee and Minsoo Hahn,
An Interactive Knocking Floor. *UbiComp 2008 Poster*

2007 Seungsoon Park, Seungwoo Lee, **SeongKook Heo**, Kyoungsin Park, and Minsoo Hahn,
Escape!: An Indoor Location-based Horror Game Using Indirect Ambient Cues. *UCS 2007 Poster*

Book Chapters

2015 **Seongkook Heo**, Jaehyun Han, and Geehyuk Lee.
Designing for Hover-and Force-Enriched Touch Interaction. *Computer-Human Interaction. Cognitive Effects of Spatial Interaction, Learning, and Ability*, Springer, 2015. 68-87.

Patents

P22 Method and apparatus of playing haptic feedback for shear movement, KR Patent Pending, Application #2014-0026719, 3/6/2014

P21 Touch screen controlling method in mobile device, and mobile device threof, KR Patent #1496017, 2/16/2015

P20 Method and apparatus for one-handed application of multi-touch gesture using continuous touch, KR Patent Pending, Application #2013-0083986, 7/17/2013

P19 Optical touchpad apparatus with proximity and force sensing capabilities and method of sensing touch in apparatus, KR Patent #1449833, 10/2/2014

P18 User interface method and apparatus using successive touches, US Patent Pending, Application #US20150026619, 1/22/2015

P17 Device and method of video playback control using force and contact position information, KR Patent #1393261, 4/30/2014

P16 Device and method for identifying multi-touch points using internal scattering, PCT/KR2012/006624, 8/21/2012

P15 Method and system for body tracking for spatial gesture recognition, PCT/KR2012/006372, 8/10/2012

P14 Apparatus and method for multi-touch sensing using total internal reflection, KR Patent #1356835, 1/22/2014

P13 Method and system for body tracking for spatial gesture recognition, KR Patent #1256046, 4/12/2013

P12 System and method for estimating position and direction, EU Patent #EP2385390, 21/8/2013, China Patent #CN102279380, 21/10/2015 US Patent Pending, Application #US20110261270, 4/18/2011

P11 Method for controlling touch screen in portable device, and portable device of the same, KR Patent #1177650, 8/21/2012

P10 Apparatus and method for sensing a moving object and a virtual golf simulation device using the same capable of accurately implementing the center point coordinate about an extracted object, KR Patent #1019801, 2/25/2011

P9 Apparatus and method for sensing a moving object and a virtual golf simulation device using the same capable of obtaining a multiple exposure image about a moving object, KR Patent #1019823, 2/25/2011

P8 Apparatus and method for sensing a moving object and a virtual golf simulation device using the same capable of accurately extracting an image of an object, KR Patent #1019798, 2/25/2011

P7 Apparatus and method for sensing a moving object and a virtual golf simulation device using the same capable of exactly extracting the center point coordinate of a moving object using a low speed camera, KR Patent #1019824, 2/25/2011

P6 Apparatus and method for sensing a moving ball and a virtual golf simulation device using the same capable of obtaining the center point coordinate about an image of a ball, KR Patent #1019829, 2/25/2011

P5 Sensing processing device for a moving object and a method thereof, and a virtual golf simulation device using the same capable of accurately extracting center point coordinate of an overlapped object, KR Patent #1019782, 2/25/2011

P4 Apparatus and method for sensing a moving ball and a virtual golf simulation device using the same capable of obtaining an image of a moving ball, KR Patent #1019847, 2/25/2011

P3 Device and method for sensing processing of a moving object, and a virtual golf simulation device using the same capable of achieving accuracy of sensing, KR Patent #1019902, 2/25/2011

P2 Method for controlling touch screen on portable device using built-in accelerometer, and portable device of the same, KR Patent #1173400, 8/6/2011

P1 Apparatus for sensing if a driver drives a car safely, KR Patent #1054062, 7/28/2011

Invited Talks

2016 Jan. Enriching Touch – with force, hover, and manual dexterity
University of Toronto

2016 Jan. Enriching Touch – with force, hover, and manual dexterity
Autodesk Research

2014 Oct. Enriching Touch
HiDeep Co.

2014 Mar. Enriching interaction on and over the surface
Korea Electronics Technology Institute

2014 Feb. Completing Touch
TEDxKAIST Salon: Beyond Now

Teaching Experience

Spring 2010, 11, 14	**Human-Computer Interaction, TA** School of Computing, KAIST
Spring 2012	**Compiler Design, TA** School of Computing, KAIST
Fall 2010	**HCI - Physical Computing, TA** School of Computing, KAIST

Academic Service

Program Committee	**MobileHCI 2015**
Reviewer	**CHI 2011, 2012, 2013, 2014, 2016, UIST 2016, TEI 2013, 2015, MobileHCI 2012, 2016, SIGGRAPH ASIA 2014, ICMI 2015, TechSym 2016**
Student Volunteer	**World Haptics Conference 2015**

Last updated: 2016 July.