

# Han-Jong Kim

Research Assistant Professor, ID KAIST

Room 401, Bldg. Industrial Design (N25),  
291 Daehak-ro, Yuseong-gu, Daejeon 34141,  
Republic of Korea

## Curriculum Vitae

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hanjong.kim@kaist.ac.kr  
jong2jong2@gmail.com  
<http://hanjong.kim>  
Lab: +82)42-350-4558  
Mobile: +82)10-5182-3295



## Education

- Ph.D., Industrial Design**, GPA: 4.05/4.3 Mar 2015  
Korea Advanced Institute of Science and Technology (KAIST) - Feb 2019  
Co.design: Inter.action Design Research Lab.  
Advisor: Tek-Jin Nam  
Thesis: *"Experience Prototyping for Designing Smart Environments"*
- M.S., Industrial Design**, GPA: 3.94/4.3 Mar 2013  
Korea Advanced Institute of Science and Technology (KAIST) - Feb 2015  
Co.design: Inter.action Design Research Lab.  
Advisor: Tek-Jin Nam  
Thesis: *"Augmented Miniature-based Design Toolkit for User Experience in Interactive Space"*
- B.S., Industrial Design**, GPA: 3.67/4.3 Feb 2008  
Minor in Management Science - Feb 2013  
Korea Advanced Institute of Science and Technology (KAIST)  
Advisor: Tek-Jin Nam

## Experience and Projects

### Research Experience

- Research Assistant Professor** Mar 2019  
Korea Advanced Institute of Science and Technology (KAIST) - Present  
Department of Industrial Design

### Professional Experience

- Contents Designer** Aug 2010  
Contents Lab, Creative Center - Aug 2011  
TMON Inc., Korea

### Funded Research Projects

- Development of UX Sketching Tool Using** Jun 2019  
**3D Interactive Scenarios for IoT Ecosystem Design** - Present  
Funded by Ministry of Education, Korea  
Role: Principal Investigator

<p><b>UX-oriented Strategies and Design for Air Purifier through User Research</b>  Funded by M.I.Design  Role: Project Manager – tool development and UX research</p>	<p>Jul 2019  - Oct 2019</p>
<p><b>EDISON (Development of Computer Aided Design Application and User Interface for Interactive Products and Systems)</b>  Funded by Ministry of Science, ICT, and Future Planning, Korea  Role: Project Manager – software development and UI design</p>	<p>Jul 2014  - Feb 2019</p>
<p><b>Developing UX Guidelines for Maker’s Prototyping Platform</b>  Funded by Samsung Electronics  Role: UX research (interview, participatory design, data analysis)</p>	<p>Apr 2017  - Jun 2018</p>
<p><b>Development of Printer UX Map for Educational Vertical Market</b>  Funded by Samsung Electronics  Role: UX research (interview, participatory design, data analysis)</p>	<p>May 2014  - Dec 2014</p>
<p><b>UX-oriented Mobile Software Platform</b>  Funded by Ministry of Knowledge Economy, Korea  Role: Supporting education for UX design methodology</p>	<p>Mar 2013  - Dec 2013</p>

## Research Interest

Human-Computer Interaction (HCI), Interaction Design, User Experience (UX) Design  
User Interface Design, Prototyping, Research through Design  
Virtual Reality, Augmented Reality, Mixed Reality, Design Tool Development  
Smart Environment, Ubiquitous Computing, Interactive Space, Augmented Space

## Skills

<b>UX Design &amp; Research</b>	Technology probe, affinity diagramming, experience prototyping, concept generation, storyboarding, focus group, cultural probe, interview, usability testing
<b>Prototyping &amp; Programming</b>	Arduino, Node.js, JavaScript, Processing-Java, P5.js, THREE.js, MongoDB, Firebase C++, Android, HTML, CSS, jQuery, WordPress, eXpressEngine
<b>Basic Tools (Design)</b>	Keyshot, Fusion 360, Rhinoceros, SolidWorks, Autodesk Alias, Inventor, AutoCAD, 123D Apps (Design/Make /Circuits), Adobe Photoshop, Illustrator, Premiere, Flash

## Publications

### Journals

Jeong, Y., **Kim, H-J.**, Cho, H., Nam, T-J. (2020). M.Integrator: A Maker's Tool for Integrating Kinetic Mechanisms and Sensors. *International Journal on Interactive Design and Manufacturing*. doi: 10.1007/s12008-019-00639-7.

**Kim, H-J.**, Jeong, Y., Kim, J-W., Nam, T-J. (2018). A Prototyping Tool for Kinetic Mechanism Design and Fabrication: Developing and Deploying M.Sketch for Science, Technology, Engineering, the Arts, and Mathematics Education. *Advances in Mechanical Engineering*. In Press.

### Conference Proceedings (International)

Li, N., **Kim, H-J.**, Shen, L., Tian, F., Han, T., Yang., X-D., Nam, T-J. (2020). HapLinkage: Prototyping Haptic Proxies for Virtual Hand Tools Using Linkage Mechanism, In *Proceedings of the 33th Annual Symposium on User Interface Software and Technology (UIST '20)*, Accepted.

Jeong, Y., **Kim, H-J.**, Yun, G., Nam, T-J. (2020). WIKA: A Projected Augmented Reality Workbench for Interactive Kinetic Art, In *Proceedings of the 33th Annual Symposium on User Interface Software and Technology (UIST '20)*, Accepted.

**Kim, H-J.**, Kim, C., Nam, T-J. (2019). Roles of 2.5D Interactive Scenario Prototyping in Digital Experience Design Practice and Education, In *Proceedings of International Association of Societies of Design Research Conference 2019 (IASDR '19)*.

**Kim, H-J.**, Kim, C., Nam, T-J. (2018). SketchStudio: Experience Prototyping with 2.5-Dimensional Animated Design Scenarios. In *Proc. Conference on Designing Interactive Systems (DIS '18)*, ACM, 831-843.

Jeong, Y., **Kim, H-J.**, Nam, T-J. (2018). Mechanism Perfboard: An Augmented Reality Environment for Linkage Mechanism Design and Fabrication. In *Proc. CHI Conference on Human Factors in Computing Systems (CHI '18)*, ACM, No. 411.

**Kim, H-J.**, Kim, J-W., Nam, T-J. (2106). miniStudio: Designers' Tool for Prototyping Ubicomp Space with Interactive Miniature. In *Proc. CHI Conference on Human Factors in Computing Systems (CHI '16)*, ACM, 213-224.

Kim, J-W., **Kim, H-J.**, Nam, T-J. 2016. M.Gesture: An Acceleration-Based Gesture Authoring System on Multiple Handheld and Wearable Devices. In *Proc. CHI Conference on Human Factors in Computing Systems (CHI '16)*, ACM, 2307-2318.

### Demo, Poster & Video

**Kim, H-J.** (2018). Rapid Smart Environment Prototyping for Early Conceptual Design. In *Proc. Companion Publication on Designing Interactive Systems (DIS '18 Companion)*, ACM, 363-366.

**Kim, H-J.**, Kim, C., Nam, T-J. (2018). SketchStudio: Rapid Prototyping Tool for 2.5D Animated Design Scenarios, In *Proc. Companion Publication on Designing Interactive Systems (DIS '18 Companion)*, ACM, 335-338.

**Kim, H-J.**, Jeong, Y., Kim, J-W., Nam, T-J. (2016). M.Sketch: Prototyping Tool for Linkage-Based Mechanism Design. In *Proc. Adjunct Proceedings of the ACM Symposium on User Interface Software & Technology (UIST '16 Adjunct)*. ACM, 75-77.

**Kim, H-J.,** Nam, T-J. (2015). Augmented Miniature Prototyping Toolkit for UX in Interactive Space. *In Proc. Extended Abstracts on Human Factors in Computing Systems (CHI '15 EA)*, ACM, 2229-2234.

**Kim, H-J.,** Nam, T-J. (2014). Muzlog: instant music transcribing system for acoustic guitarists. *In Proc. Extended Abstracts on Human Factors in Computing Systems (CHI '14 EA)*, ACM, 451-454.

**Kim, H-J.,** Lee, M-H., Goo, B-C., Nam, T-J. (2013). Xtempo: music polaroid for printing real-time acoustic guitar performance. *In Proc. Extended Abstracts on Human Factors in Computing Systems (CHI '13 EA)*, ACM, 2827-2828.

## **Conference Proceedings (Domestic, Korea)**

Yun, G., **Kim, H-J.,** Nam, T-J. (2019). Design Directions of Wearable Devices for Supporting Communications in Football Contexts. *In Proceedings of Korean Society of Design Science 2019 Spring (KSDS '19 Spring)*, 370-371.

**Kim, H-J.,** Nam, T-J. (2018). Development and Deployment of An Experience Prototyping Tool for Interactive Scenarios. *In Proc. Korean Society of Design Science 2018 Fall (KSDS '18 Fall)*, 156-157.

Kim, C., **Kim, H-J.,** Nam, T-J. (2018). RaspberryPi-Arduino Based Development Environment for IoT Prototyping. *In Proc. Korean Society of Design Science 2018 Spring (KSDS '18 Spring)*, 80-81.

Jeong, Y., **Kim, H-J.,** Nam, T-J. (2018). A Design Tool for Generating Linkage Mechanism Based on Movement Sketch. *In Proc. Korean Society of Design Science 2018 Spring (KSDS '18 Spring)*, 92-93.

**Kim, H-J.,** Kim, J-W., Nam, T-J. (2016). Development of Mechanism Design Software for Designing Interactive Products with Kinetic Movement. *In Proc. Korean Society of Design Science 2016 Spring (KSDS '16 Spring)*, 86-87.

**Kim, H-J.,** Cha, S., Park, R., Nam, T-J., Lee, W., Lee, G. (2016). Mo-Bi: Contextual Mobile Interfaces through Bimanual Posture Sensing with Wrist-Worn Devices. *In Proc. Human Computer Interaction Korea (HCIK '16)*, Hanbit Media Inc., 94-99.

Kim, J-W., **Kim, H-J.,** Nam, T-J. (2015). An Interaction & Mechanism Design Workflow for Capstone Design Projects Based on a Top-Down Approach. *In Proc. Korean Society of Design Science 2015 Spring (KSDS '15 Spring)*, 184-185.

**Kim, H-J.,** Lee, M-H., Nam, T-J. 2013. Music Polaroid for Printing Real-Time Acoustic Guitar Performance, *In Proc. Korean Society of Design Science 2013 Spring (KSDS '13 Spring)*, 134-135.

## **Awards**

### **Commendation from Korean Minister of Education**

BK21 Plus Excellent Researcher Award (2019)

**Distinguished Service Award**, EDISON (EDucation-research Integration through Simulation On the Net) Project, KISTI (Korea Institute of Science and Technology Information) (2016)  
Service on EDISON (educational platform of computational science & engineering) community

**Best Paper Award**, Human Computer Interaction Korea (HCIK '16)

Mo-Bi: Contextual Mobile Interfaces through Bimanual Posture Sensing with Wrist-Worn Devices

**1st People's Choice Award**, Student Innovation Contest in ACM Symposium on User Interface Software and Technology (UIST '14)

DreaMop: To Make Your Housework More Effective and Enjoyable

**Grand Prix**, KAIST Undergraduate Research Participation Program Award (2013)

Xtempo: Music Polaroid for Printing Real-time Acoustic Guitar Performance

**Red Dot Design Award**: Design Concept 2010

Lock-On: Bicycle Helmet with Lock

## Book

Nam, T-J, Lee, S., Park, Y-W., Min, H., Baek, K-M., **Kim, H-J.**, UX for Mobile Software Platform, KAIST Press for Mobile Software Platform, ISBN: 978-89-89453-62-8.

## Patents / Copyright

Software Copyright: M.Sketch 3.0 (No. C-2018-028017, Korea)

Apparatus for Print Out of Music Scores and Method Thereof (No. 10-1450054, Korea) - Expired

Multi-Functional Helmet that Locks the Bicycle and the Rack (No. 20-0461171, Korea) - Expired

## Press

**A KAIST Student Team Wins the ACM UIST 2014 Student Innovation Contest**

Nov 2014

Covered in KAIST news and Korean newspapers

(DongAh News, Digital Times, Newsis, Money Today, etc.)

## Exhibition

**Tokyo Designers' Week**

Oct 2012

Graduation Project Exhibition

- Nov 2012

## Teaching Experience

### Lecture

Computer-Aided Design (ID219), Industrial Design, KAIST

Spring, 2019

### Teaching Assistant

Interaction Prototyping, Industrial Design, KAIST

Fall, 2017

Product Design Factors, Industrial Design, KAIST

Spring, 2016

Interaction Design, Industrial Design, KAIST	Fall, 2015
CAD & 3D Modeling, Industrial Design, KAIST	Spring, 2015
Interaction Design, Industrial Design, KAIST	Fall, 2014
CAD & 3D Modeling, Industrial Design, KAIST	Spring, 2014
Interaction Design, Industrial Design, KAIST	Fall, 2013
Product Design System, Industrial Design, KAIST	Spring, 2013

## Service Experience

### Invited Talk / Tutorial

Talk: Envisioning Future Living with Prototyping Interactive Systems <i>European Robotics Week – HRI@Tech, Aalborg University, Denmark</i>	Nov 2019
Tutorial: 2.5D Animated Design Scenario with SketchStudio <i>Department of Service and Design Engineering, Sungshin Women's University</i>	Nov 2019
Tutorial: UX Prototyping for Envisioning Interactive Products, Systems and Services <i>Tutorial Session at HCI Korea Conference</i>	Feb 2019
Tutorial: Creating Design Scenario with SketchStudio <i>Design Thinking Camp, Daejeon Daeshin High School &amp; World Class Edu</i>	Jan 2019

### Peer Review

ACM Conference on Human Factors in Computing Systems (CHI) 2019, 2020
ACM Symposium on User Interface Software and Technology (UIST) 2020
ACM Conference on Designing Interactive Systems (DIS) 2018, 2020
ACM Conference on Tangible Embedded and Embodied Interaction (TEI) 2017, 2018
ACM Conference Creativity and Cognition (C&C) 2017
Archives of Design Research (2019)
HCI Korea Conference 2020