

# JEEEUN KIM

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1B10 Discovery Learning Center (DLC)

430 UCB

Boulder, CO 80309

## RESEARCH INTERESTS

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Digital Fabrication, Human-Computer Interaction (HCI), Human-AI Interaction, and Design Research

## EDUCATION

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- 2014 - **Ph.D. Student, Computer Science**  
Present University of Colorado, Boulder  
Committee: Tom Yeh (Chair), Mark D Gross, Jennifer Mankoff, Shaun Kane, Daniel Ashbrook
- 2016 **Visiting PhD Scholar, HCI Institute, School of Computer Science**  
Jan – Sep Carnegie Mellon University  
Host: Jennifer Mankoff, Scott Hudson  
DIY Assistive Technology, 3D Printed real world objects adaptation design
- 2015 **M.S., Computer Science**  
University of Colorado, Boulder  
Advisor: Tom Yeh, & Ann Eisenberg
- 2010 **B.S., Computer Engineering**  
Korea Aerospace University, South Korea  
Undergraduate Thesis Advisor: Inbok Lee  
Summa Cum Laude (Top 1% of class), 1st Place Senior Capstone Project and Undergraduate Thesis

## EMPLOYMENT

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- 2014- **University of Colorado Boulder, CO**  
Present Research Assistant
- 2018 **Adobe Research, San Francisco, CA**  
Summer Research Intern, Creative Intelligence Lab (Mentor: Qingnan (James) Zhou)  
Expressive Design Tool for Non-visual Property modeling in Digital Fabrication
- 2017 **Ericsson Research, Santa Clara, CA**  
Summer Research Intern (Mentor: Alvin Jude Hari Haran)  
Hololens-Web hosting application to support remote collaborations between distant users using Augmented Reality
- 2013 **JumpCloud Inc., Boulder, CO**  
Summer S/W Engineering Intern (Mentor: KC Berg)  
Developed web service and supporting DB collection which report IP reputation to provide security statistics for cloud based service/business
- 2010-2012 **Korea Telecom (KT), Seoul, Korea**  
Project Manager, New Business Strategy Division, The Head Office  
Designed the system for an online video contents delivery service & platform  
S/W Engineer, Fast Incubation Team, Enterprise Business Division  
Developed a wi-fi AP based mobile app auto-synchronization system ([p.1], [p.2])

- 2008 Sep. – **LG Electronics, Seoul, Korea**  
 2009. Feb. Research Intern, HCI Group, Advanced R&D Center  
 Implemented a haptic feedback feature-phone prototype and vibro-haptic patterns  
 Implemented a user interface for custom haptic pattern/gesture generation
- 2007 **Samsung, Seoul, Korea**  
 Winter Engineering Intern, Telecommunication/Network Division  
 Participated in Haptic feedback generating development process

## **PEER REVIEWED CONFERENCE PAPERS (Oral Presentation)**

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- [c.12] Haruki Takahashi & **Jeeun Kim**. *3D Pen + 3D Printer: Exploring the Role of Human and Fabrication Machine in Creative Making*. In Proceedings of the 37th Annual ACM SIGCHI Conference on Human Factors in Computing Systems (CHI'19) (To appear)
- [c.11] Clement Zheng, **Jeeun Kim**, Daniel Leithinger, Mark D Gross, & Ellen Yi-Luen Do. *Mechamagnets: Designing and Fabricating Haptic and Functional Physical Inputs with Embedded Magnets*. In Proceedings of International Conference on Tangible, Embedded, and Embodied Interaction (TEI'19) (To appear)
- [c.10] **Jeeun Kim**, Clement Zheng, Haruki Takahashi, Mark D Gross, Daniel Ashbrook, & Tom Yeh. *Compositional 3D Printing: Expanding & Supporting Workflows Towards Compositional 3D Printing*. In Proceedings of ACM Symposium On Computational Fabrication (SCF'18)
- [c.9] **Jeeun Kim** & Tom Yeh. *CraftML: 3D Modeling is Web Programming*, In Proceedings of the 36th Annual ACM SIGCHI Conference on Human Factors in Computing Systems (CHI'18) (Acceptance rate: 25%)
- [c.8] **Jeeun Kim**, Anhong Guo, Tom Yeh, Scott E. Hudson, & Jennifer Mankoff. *Understanding Uncertainty in Measurement and Accommodating its Impact in 3D Modeling and Printing*, In Proceedings of ACM Conference on Designing Interactive Systems (DIS'17) (Acceptance rate: 22%)
- [c.7] **Jeeun Kim**, Haruki Takahashi, Homey Miyashita, Michelle Annett, & Tom Yeh. *Machines as Co-Designers: A Fiction on the Future of Human-Fabrication Machine Interaction*, (alt.chi) In Proceedings of Extended Abstracts of the 35<sup>th</sup> Annual ACM SIGCHI Conference on Human Factors in Computing Systems (CHI'17) (Acceptance rate: 20%)
- [c.6] Anhong Guo, **Jeeun Kim**, Xiang 'Anthony' Chen, Tom Yeh, Scott E. Hudson, Jennifer Mankoff, & Jeffrey P. Bigham *Façade: Auto-generating Tactile Interfaces to Appliances*, In Proceedings of the 35th Annual ACM SIGCHI Conference on Human Factors in Computing Systems (CHI'17) (Acceptance rate: 25%)
- [c.5] Hyunjoo Oh, **Jeeun Kim**, Cory Morales, Mark D. Gross, Michael Eisenberg, & Sherry Façade *FoldMecha: Exploratory Design and Engineering of Mechanical Papercraft*. In Proceedings of International Conference on Tangible, Embedded, and Embodied Interaction (TEI'17) (Acceptance rate: 27%)
- [c.4] Xiang 'Anthony' Chen, **Jeeun Kim**, Stelian Coros, Jennifer Mankoff, & Scott E. Hudson, *Reprise: A Design Tool for Specifying, Generating, and Customizing 3D Printable Adaptations on Everyday Objects*, In Proceedings of Annual Symposium on User Interface Software and Technology (UIST'16) (Acceptance rate: 21%)
- [c.3] Claudia D. Roquet, **Jeeun Kim**, & Tom Yeh, *3D Folded PrintGami: Transforming Passive 3D Printed Objects to Interactive by Inserted Paper Origami Circuits*, In Proceedings of ACM Conference on Designing Interactive Systems, (DIS'16) (Acceptance rate: 26%)

[c.2] **Jeeun Kim**, & Tom Yeh, *Toward 3D-Printed Movable Tactile Pictures for Children with Visual Impairments*, In Proceedings of the 33rd Annual ACM SIGCHI Conference on Human Factors in Computing Systems (CHI'15) (Acceptance rate: 23%)

[c.1] Abigale Stangl, **Jeeun Kim**, Tom Yeh, *3D Printed Tactile Picture Books for Children with Visual Impairments: A Design Probe*, In Proceedings of Conference on Interaction Design and Children (IDC'14), (Acceptance rate: 30%)

## **PEER REVIEWED PUBLICATIONS OTHERS (Doctoral Symposium, Poster, Demo)**

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[d.9] **Jeeun Kim**. *Shall We Fabricate? Collaborative, Bidirectional, Incremental Fabrication*, In Proceedings of Adjunct Annual Symposium on User Interface Software and Technology (UIST'17)

[d.8] Anhong Guo, **Jeeun Kim**, Xiang 'Anthony' Chen, Tom Yeh, Scott E. Hudson, Jennifer Mankoff, & Jeffrey P. Bigham, *Facade: Auto-generating Tactile Interfaces to Appliances*, In Proceedings of 18th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS'16)

[d.7] **Jeeun Kim**, Swamy Ananthanarayan. & Tom Yeh, *Seen Music: Ambient Music Data Visualization for Children with Hearing Impairments*, In Proceedings of conference on Interaction design and children (IDC'15)

[d.6] **Jeeun Kim**, Hyunjoo Oh, & Tom Yeh, *A Study to Empower Children to Design Movable Tactile Pictures for Children with Visual Impairments*, In Proceedings of International Conference on Tangible, Embedded, and Embodied Interaction (TEI'15)

[d.5] **Jeeun Kim**, Abigale Stangl, & Tom Yeh, *Using LEGO to Model 3D Tactile Picture Books by Sighted Children for Blind Children*, In Proceedings of ACM symposium on Spatial user interaction (SUP'14)

[d.4] **Jeeun Kim**, Michael Kasper, Tom Yeh, & Nikolas Correll, *SikuliBot: Automating Physical User Interface Using Images*, In Proceedings of Adjunct Annual Symposium on User Interface Software and Technology (UIST'14)

[d.3] Abigale Stangl, **Jeeun Kim**, & Tom Yeh, *Technology to Support Emergent Literacy Skills in Young Children with Visual Impairments*, In Proceedings of Extended Abstracts of the 32nd Annual ACM Conference on Human Factors in Computing Systems (CHI'14)

[d.2] **Jeeun Kim**, Abigale Stangl, Ann Eisenberg, & Tom Yeh, *Tactile Picture Books for Young Children with Visual Impairment*, International Conference on Tangible, Embedded, and Embodied Interaction (TEI'14)

[d.1] **Jeeun Kim**, Abigale Stangl, Ann Eisenberg, & Tom Yeh, *Printing Tactile Picture Books for Blind children*, Extended Abstracts for Poster Presentation at ACM Grace Hopper Celebration 2013 (GHC'13)

## **WORKSHOP PAPERS (Oral Presentation)**

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[w.3] **Jeeun Kim**, Abigale Stangl, & Tom Yeh. *Learning Underlying Principles of Physicalization by Tangible, Embodied, and Iterative Fabrication*, In Pedagogy and Physicalization: Designing Learning Activities around Physical Data Representations Workshop on DIS 2017, Edingburgh, UK

[w.2] **Jeeun Kim**, *Co-Designer Robot: Envisioning Human-Fabrication Machine Interaction (HFI) – In What Actors can Teach Robots* Workshop on CHI 2017, Denver, CO

[w.1] **Jeeun Kim**, Abigale Stangl, Ann Eisenberg, & Tom Yeh, *Evaluating Tactile User Experience with Tactile Picture Books for Children with Visual Impairment* - In "Touch Me" Tactile Evaluation Methods Workshop on CHI 2014, Toronto, Canada

## PATENTS

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[p.2] **Jeeun Kim**, Chae Eun Oh, Heyjung Kim, *Method and system for distributing business application and content for mobile equipment using application store and wireless AP*, Patents, United States Patent and Trademark Office, USA (US Patent [2,092,812](#))

[p.1] **Jeeun Kim**, Chae Eun Oh, Heyjung Kim, *Method and system for distributing business application and content for mobile equipment using application store and wireless AP*, Patents, Korea Patent and Trademark Office, Korea

## AWARDS AND HONORS

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- 2018 Adobe PhD Research Fellowship  
Special Recognition for the Excellent Review, CHI'18 Paper
- 2017 Rising Stars in EECS  
Special Recognition for the Excellent Review, UIST'17 Paper  
CRA-W Grad Cohort, CRA-W
- 2015 The Best User Experience Award, Hack CU, Boulder
- 2014 Research Community Development Award, University of Colorado Boulder  
Dean's Fellowship, University of Colorado Boulder
- 2013 Winner of US Entries, Finalist for Typhlo & Tactus Tactile Book Contest, The American Printing House for the Blind (APHB)  
Grace Hopper Scholarship, Anita Borg Institute for Women in Computing and Tech  
The 1st Place Pitch Cash Prize, Startup Summer (Startup Colorado)  
Outreach Grant, Office for University Outreach, University of Colorado Boulder
- 2012 Beverly Sears Graduate Research Grant, Colorado Research Administration  
Dean's Fellowship, University of Colorado Boulder
- 2010 Presidential Award, the Best Contributor of the Year, Korea Telecom (KT Corp.), Korea  
Best Business Model Strategy Award, Korea Telecom (KT Corp.), Korea  
Chancellor's Recognition Award, Korea Aerospace University, Korea
- 2009 Best Undergrad Thesis (Capstone Project) Award, Korea Aerospace University, Korea
- 2007, 2009 Jeong-Seok Foundation Fellowship, Korea
- 2004 -2009 Scholarship for Excellent Academic Records, Korea Aerospace University, Korea
- 2007 ISTAT Foundation International Scholarship, United States
- 2006 Honorary Alumnus, Yanbian University of Science and Technology, China
- 2005 Han-Jin Foundation Fellowship, Korea

## TEACHING EXPERIENCE

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- 2017- 2018 **Teaching Assistant, CS Department, University of Colorado Boulder**  
Teaching Principles in User Centered Design and Prototyping (Human Centered Computing and Development)
- 2014- 2015 **Guest Lecturer, CU Science Discovery, Boulder**  
Teaching “Emergent Technology to develop emergent literacy for blind children, with 3D printed tactile picture books” in various summer science camps for K-12
- 2013- 2014 **Teaching Assistant, CS Department, University of Colorado Boulder**  
Teaching Introductory Linux and Python/Java/C++ (Computer Science 1: Programming)  
Teaching Introductory Linux and C++ (Introduction to Programming)
- 2013 Spr. **Grader, CS Department, University of Colorado Boulder, USA**  
Grading for graduate students-only class (Big Data-Human Computer Interaction)
- 2009-2010 **Voluntary Instructor, Korea Foreign Migrants Center, Seoul, Korea**  
Lecturing “How to use Windows OS and MS Office” for Immigrants Workers  
Lecturing “How to use Korean e-Commerce” System
- 2009 **Afterschool Teacher, Dukyang Middle School, Gyunggi-do, Korea**  
Tutoring small group of middle school students for Math & Science
- 2005-2009 **Instructor, Intrusion Defense Team, Korea Aerospace University, Korea**  
Lecturing Data Structures and Network Programming using C, for freshmen members

## MENTORING EXPERIENCE

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- 2015-2016 **Srinjita Bhaduri**, Master’s level Independent Study  
*“Audible Texture: Sensor-less Sound Generator on Tactile Pictures for Children with Visual Impairments”*
- 2015 Fall **Claudia Dauden Roquet**, Visiting undergraduate student from Universidad La Salle (Spain)  
*“3D Folded Printgami”* Balsells Mobility Scholarship Program (Result presented as a short paper at DIS’16 [c.3], received 1<sup>st</sup> place with honor for the undergrad dissertation)
- Caleb Hsu** (Co-advised with Dr. Tom Yeh), Undergraduate Thesis  
*“Parametric 3D Modeling by HTML style Markup Language (CraftML)”*, (Results integrated into research paper CHI’18 [c.9])
- Ellen Reynersen**, Senior undergraduate intern with Dance Major and TAM (Technology, Arts, and Media) Minor
- 2015 **Lindsey Welch, Chantelle Humphries, Dinah Bowman, & Nueka Lo**  
Summer *“3D Printed braille” & “Post-processing Techniques to Enhance Tactile Textures”*  
NSF Funded Senior Highschool Research Mentor Programs (REM) (Results were invited to the White House for presenting)
- 2014 Fall **Thomas M Erickson**, Senior Independent Study  
*“Haptic Feedback Development for 3D Printed Books”*
- The team of four freshmen in the College of Engineering** General Engineering Project Class  
*“Designing Interactive Picture Books by Arduino and 3D Printing”*
- 2014 **Ian Char** (Co-advised with Dr. Tom Yeh), Undergraduate Discovery Learning Apprenticeship  
Summer Scholarship Programs  
*“SikuliBot-Automating Physical Interface using Images”*, Program (Result was demoed at UIST’14 [d.4])

## INVITED TALKS

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- 2018 **Adobe Research, Creative Intelligence Lab, San Francisco, CA**  
*"Describe Function for Fabrication" (Fabrication Strategy meeting, Host: Wilmot Li)*
- HP, Immersive Experiences Lab, Palo Alto, CA**  
*"Intelligent 3D Printing" (Host: Tico Ballagas)*
- Seoul National University, Info/Comm Department, Seoul, Korea**  
*"Explainable System for 3D Printing and Digital Fabrication" (Host: Hwajung Hong)*
- 2017 **Ericsson Research, Santa Clara, CA**  
*"Web-AR for Remote Collaborative" (Media Technology Gr., Host: Alvin Jude)*
- 2015 **National Teen's Science Cafe Network, Denver, CO**  
*"Designing Tactile Pictures with Craft Materials for 3D Printing"*

## INVITED EXHIBITIONS, DEMO & WORKSHOP ORGANIZING

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- 2018 **Cooper Hewitt, Smithsonian Design Museum, New York, NY**  
Exhibition, *As part of "Design for the Senses: Beyond Visual"*
- 2017 **ATLAS Research Showcase, ATLAS Institute, CU Boulder, CO**  
Demo, *"Kinemaker: Supporting Mechanical Design by Remixing Gearboxes and 3D Models"*
- King Abdulaziz Center for World Culture, Riyadh, Saudi Arabia**  
Exhibition (Permanent), *As part of "World Culture Exhibition"*
- 2016 **Lyons Public Library, Lyons, CO**  
Exhibition, *"Crowd Sourced 3D Printed Tactile Pictures – Harold and the Purple Crayon"*
- 2015 **Science Discovery Summer Camp, University of Colorado Boulder, CO**  
Workshop, *"Designing 3D Pictures like Web Programming"*
- NSF Funded CU EFRI REM Project, Boulder, CO**  
Workshop, *"Designing 3D Printed Tactile Picture Books for Children with Visual Impairments"*
- Family IdeaLAB, Denver Public Library, Denver, CO**  
Workshops, *"Part 1: Tangible 3D Design with Craft Materials"*  
*"Part 2: Programming 3D Pictures"*
- 2014 **FoST(Future of Story Telling) Design Summit, New York, NY**  
Exhibition, *Part of "Reinventing the Way Stories Are Told"*
- Computer Science Education Week, Boulder, CO**  
Demo, *"Emergent Technologies with 3D Printing in Classroom"*
- IdeaForge Home Coming Day, University of Colorado Boulder, CO**  
Demo, *"Tactile Picture Books to Enhance Reading Experience for Blind Children"*
- Gemmile Engineering Library, CU Boulder, CO**  
Exhibition, *"Crowd sourced 3D Printed Tactile Pictures – Harold and the Purple Crayon"*
- Colorado Talking Book Library, Denver, CO**  
Workshop, *"Design Tactile Map to Guide People with Visual Impairments"*
- Teen's Science Cafe, Denver, CO**  
Workshops (Three Groups), *"Designing Tactile Pictures with Craft Materials for 3D Printing"*

## MEDIA COVERAGE

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**Ericsson Research Blog**, Augmented reality prototyping for Remote Collaboration  
**Make Magazine**, Customize and Print 3D Picture Books for Visually Impaired Kids  
**Fabbaloo**, The Tactile Picture Books Project Helps Visually Impaired Children  
**3DPrint.com**, 3D Printed Tactile Books Allow Visually Impaired Children to Experience Stories  
**MetaTrend (Korea)**, Tangible Context *손으로 전달되는 컨텍스트* (Vol.57)  
**Masters of Media (Netherlands)**, 3D printing: a tool in revolutionizing the books for visually impaired children  
**Bookaholic (Romania)**, Tactile Picture Books: *proiect fain pentru copiii cu afectiuni oculare*  
**DNA India (India)**, Picture books for the visually-impaired get a 3D boost  
**Children's Book Council**, Tactile Picture Books Project' Goes Beyond Braille,  
**Electric Literature**, 3-D Printed Storybooks for the Visually Impaired  
**Adweek**, 3D Printed Storybooks For Visually Impaired Children  
**New Scientist**, 3D-printed books make pictures real for blind children (Issue 2984)  
**A book and a good lie down (Australia)**, A Few Stories for Children's Books Week  
**NPR: National Public Radio**, Beyond Braille: 3-D Printed Books For The Blind  
**Women Makes Waves (UK)**, Bringing Books Alive For Visually-Impaired Children  
**3D Hubs**, Maker Talk: Creating tactile storybooks for children with visual impairment  
**DailyMail (UK)**, Now you can FEEL the Cat in the Hat: Researchers use 3D printing to help blind children enjoy classic bedtime stories  
**NewsWeek**, 3-D Printing Enables Visually Impaired Children to Experience the World of Literary Classics  
**NanoWerk**, 3D-printed picture books for visually impaired children  
**3diot**, Blind Children Benefit from 3-D Printed Books  
**3D Imprimalia (Spain)**, *Libros táctiles impresos en 3D para niños ciegos*  
**Mashable**, Imagining a New Way to Read, One 3D-Printed Book at a Time  
**DailyCamera**, CU-Boulder Researchers Create Children's books with 3-D printing  
**Pink Giraffe (Russia)**, Printed on a three dimensional printer. *Книги «Розового Жирафа» напечатали на трехмерном принтере. Это революция в образовании!*  
**3ders**, 3D Printed Tactile Picture Books for Visually Impaired Kids  
**ScienceDaily**, Picture books for visually impaired kids go 3-D  
**3DPrint.com**, 3D Printed Tactile Books For Blind Children  
**9 News**, CU Creates 3D Book Program for Blind Children  
**Magazine of Artikel A-Welle (Switzerland)**, Is There a Really User-Friendly Ticket Machine? *Gibt es den benutzerfreundlichen Billettautomaten wirklich?*  
**ColoradoDaily**, CU-Boulder students team with Swiss university on transportation project

## SERVICE

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**Program Committee**, UIST'19, Registrations Chair  
CHI'18-19, *Late Breaking Work* Associate Chair  
**Faculty Search Committee**, PhD student member (2017)  
**Paper Review**, CHI (2014-2019), UIST (2013-2018), SCF (2018), TEI (2014-2018), DIS (2014-2018), CSCW (2015-2017), C&C (2015/2017), IDC (2014-2017), CHI Play (2014-2016), Mobile HCI (2014-2016), TVX (2014-2016), ISS (Formally IIS, 2014)  
**Guest Editor**, ODYSSEY Magazine: Adventures in Science, Special Issue on "3D Printing in the World"  
Android SDK Reference Book (ISBN: 9788909189026)  
**Student Volunteer**, CHI 2015/2017, IDC 2015, NAGC 2012, Onnuri Campaign (Korea) 2009  
**Club President**, Intrusion Defense Team (IDT), Korea Aerospace University, Korea

## REFERENCES

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### **Tom Yeh**

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University of Colorado Boulder

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### **Mark D Gross**

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