

JEEEUN KIM

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Research Interests

Digital Fabrication, HCI, Human-Augmented AI, and Design Research

Appointments

- 2019-present **Texas A&M University**
Assistant Professor, Computer Science & Engineering
- 2018 Summer **Adobe, San Francisco, CA**
Research Intern, Creative Intelligence Lab (Mentor: Qingnan (James) Zhou)
- 2017 Summer **Ericsson, Santa Clara, CA**
Research Intern, Advanced Media Research Group (Mentor: Alvin Jude Hari Haran)
- 2016 **Carnegie Mellon University, Pittsburgh, PA**
Visiting Scholar, HCI Institute (Host: Jennifer Mankoff, Scott Hudson)
- 2013 **JumpCloud Inc., Boulder, CO**
S/W Engineering Intern (Mentor: David Campbell, KC Berg)
- 2010-2012 **Korea Telecom (KT), Seoul, Korea**
Project Manager, New Business Strategy Division, The Head Office (2011-2012),
S/W Engineer, Fast Incubation Team, Enterprise Business Division (2010)
- 2008-2009 **LG Electronics, Seoul, Korea**
Research Intern, HCI Group, Advanced R&D Center (Mentor: Younghwan Kim)
- 2007 Winter **Samsung Electronics, Seoul, Korea**
Engineering Intern, Telecommunication/Network Division

Education

- 2019 **Ph.D., Computer Science**
University of Colorado
Thesis: Modular Systems for Digital Fabrication: Toward a Collaborative Partnership between Humans and Machines
- 2015 **M.S., Computer Science**
University of Colorado
- 2010 **B.S., Computer Engineering**
Korea Aerospace University, South Korea
Summa Cum Laude (Top 1% of class)
- 2006 **Exchange Student, Computer Science**
Yanbian University of Science & Technology (YUST), China

Peer Reviewed Conference Proceedings & Journals

[c.21] Nahyun Kwon, Chen Liang, & **Jeeekim Kim**. *3D4ALL: Toward an Inclusive Pipeline to Classify 3D Contents*. In Proceedings of Workshop on Transparency and Explanations in Smart Systems (TESS'21, Workshop on IUI'21)

[c.20] Himani Deshpande, Haruki Takahashi & **Jeeekim Kim**. *EscapeLoom: Fabricating New Affordances for Hand Wearing*. In Proceedings of the 39th Annual ACM SIGCHI Conference on Human Factors in Computing Systems (CHI'21, Acceptance rate: 26%, To appear)

- [c.19] Alexander Berman, Joshua Howell, Ketan Thakare, Francis Quek, & **Jeeun Kim**. *HowDIY: Towards Meta-Design Tools to Support Anyone to 3D Print Anywhere*. In Proceedings of the 26th Annual Conference on Intelligent User Interfaces (IUI'21, Acceptance rate: 27%, To appear)
- [c.18] **Jeeun Kim**, James Zhou, Amanda Ghassaei, Xiang 'Anthony' Chen. *OmniSoft: A Design Tool for Soft Objects by Examples*. In Proceedings of International Conference on Tangible, Embedded, and Embodied Interaction (TEI'21) (Acceptance rate: 29%)
- [c.17] Alexander Berman, Francis Quek, Robert Woodward, Osazuwa Okundaye, **Jeeun Kim**. "*Anyone Can Print*": *Supporting Collaborations with 3D Printing Services to Empower Broader Participation in Personal Fabrication*. In Proceedings of the 11th Nordic Conference on Human-Computer Interaction (NordiCHI'20, Acceptance rate: 24%, To appear)
- [c.16] Haruki Takahashi, Parinya Punpongsanon & **Jeeun Kim**. *Programmable Filament: Printed Filaments for Multi-material 3D Printing*. In Proceedings of the Annual Symposium on User Interface Software and Technology (UIST'20, Acceptance rate: 21%, To appear)
- ★ SIGCHI Best of UIST Paper Honorable Mention Award
- [c.15] Jiahao Li, Meilin Cui, **Jeeun Kim**, & Xiang 'Anthony' Chen. *Romeo: A Design Tool for Embedding Transformable Parts in 3D Models to Robotically Augment Default Functionality*. In Proceedings of the Annual Symposium on User Interface Software and Technology (UIST'20, Acceptance rate: 21%, To appear)
- [c.14] Jennifer Mankoff, Megan Hofmann, Xiang 'Anthony' Chen, Scott E Hudson, Amy Hurst, **Jeeun Kim**. *Consumer-grade fabrication and its potential to revolutionize accessibility*. In Communications of the ACM 62 (10) (CACM'19)
- [c.13] Jianhao Li, **Jeeun Kim**, & Xiang 'Anthony' Chen. *Robot: A Design Tool for Actuating Everyday Objects with Automatically generated 3D Printable Mechanisms*. In Proceedings of the Annual Symposium on User Interface Software and Technology (UIST'19, Acceptance rate: 24%)
- [c.12] Haruki Takahashi & **Jeeun Kim**. *3D Printed Fabric: Techniques for Design and 3D Weaving Programmable Textiles*. In Proceedings of the Annual Symposium on User Interface Software and Technology (UIST'19, Acceptance rate: 24%)
- [c.11] 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) (Acceptance rate: 23%)
- [c.10] 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) (Acceptance rate: 25%)
- [c.9] **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) (Acceptance rate: 21%)
- [c.8] **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.7] **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.6] 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 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 Hsi *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 Extended Abstracts (Workshop, Poster, Demo, Doctoral Consortium)

[e.14] Andrew J Mertens, Mary Roszel, **Jeeun Kim**, Tom Yeh, & Eliana Colunga. *Parent-Child Interactions and Word Learning: Introducing vocabulary in different play contexts*. The 41st Annual Meeting of the Cognitive Science Society (CogSci'19)

[e.13] **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 35th Annual ACM SIGCHI Conference on Human Factors in Computing Systems (CHI'17)

[e.12] **Jeeun Kim**. *Shall We Fabricate? Collaborative, Bidirectional, Incremental Fabrication*, In Proceedings of Adjunct Annual Symposium on User Interface Software and Technology (UIST'17)

[e.11] **Jeeun Kim**, Abigale Stangl, & Tom Yeh. *Learning Underlying Principles of Physicalization by Tangible, Embodied, and Iterative Fabrication*, Presented at Pedagogy and Physicalization: Designing Learning Activities around Physical Data Representations Workshop on DIS'17, Edinburgh, UK

[e.10] **Jeeun Kim**, *Co-Designer Robot: Envisioning Human-Fabrication Machine Interaction (HFI)* – Presented at What Actors can Teach Robots Workshop on CHI'17, Denver, CO

[e.9] 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)

[e.8] **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)

[e.7] **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)

[e.6] **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 (SUI'14)

[e.5] **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)

[e.4] 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)

[e.3] **Jeeun Kim**, Abigale Stangl, Ann Eisenberg, & Tom Yeh, *Evaluating Tactile User Experience with Tactile Picture Books for Children with Visual Impairment* – Presented at "Touch Me", Tactile Evaluation Methods Workshop on CHI'14

[e.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)

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

Patents

[p.2] **Jee Eun Kim**, Chae Eun Oh, Hyejung 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 9,092,812)

[p.1] **Jee Eun Kim**, Chae Eun Oh, Hyejung 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

2020	UIST'20 Best Paper Honorable Mention Award Heidelberg Laureate Forum Young Researcher
2018	Adobe Research Ph.D. Fellowship (10 students around the world) Special Recognition Received for Excellent Review CHI'18
2017	Rising Stars in EECS ACM CRA-W Grad Cohort, CRA-W Special Recognition Received for Excellent Review, UIST'17
2015	The Best User Experience Award, Hack CU, Boulder
2014	Early Career Development Award, University of Colorado Dean's Fellowship, University of Colorado
2013	US winner, Finalist, the Annual International Typhlo & Tactus Tactile Book Contest Grace Hopper Scholar, Anita Borg Institute for Women in Computing and Technology The 1st Place Pitch Cash Prize, Startup Summer (Startup Colorado)
2012	Dean's Fellowship, University of Colorado
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 for Class of 2010, Korea Aerospace University, Korea
2009	Best Undergrad Thesis (Capstone Project) Award, Korea Aerospace University, Korea
2007, 2009	Jeong-Seok Scholarship (Top 1 student in the CS Department), Korea
2004 -2009	Scholarship for Excellent Academic Records, Korea Aerospace University, Korea
2007	ISTAT Foundation Scholarship (8 students around the world)
2006	Honorary Alumnus, Yanbian University of Science and Technology, China
2005	Han-Jin Scholarship, Korea

Research Grants

2020	T3: Triad for Transformation, \$32,000 Role: PI (Co-PI: Jinsil Seo, Courtney Starrett)
2019	Adobe Gift Award, \$2,500 Role: Sole-PI NSF Convergence Accelerator (C-Accel 1937043), Track A: Harnessing the Data Revolution <i>Product Design and Manufacturing Graph-as-a-Service</i> (PI: Binil Starly) Role: Consultant
2013-2014	Outreach Grant Award, University of Colorado Boulder, \$8,000 Teaching 3D Printing to Teachers and Parents of Blind Children (PI: Tom Yeh) Role: Student lead
2012-2013	Beverly Sears Graduate Research Grant, \$1,000 Role: Student PI

Teaching

2019- Present	Instructor, CS&E, Texas A&M University Computer-Human Interaction (CSCE 436, Spring 2021) 100 Undergraduate students Digital Fabrication Studio (CSCE 689, Fall 2020) 12 Graduate students
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- 2017- 2018 Computer-Human Interaction (CSCE 436, Spring 2020) 60 Undergraduate students
Human-Centered Seminar (CSCE 667, Fall 2019) 8 Graduate students
- Teaching Assistant, CS Department, University of Colorado Boulder**
- 2014- 2015 Human Centered Computing and Development (CSCI3200, Fall2017-Spring2018)
- Guest Lecture, 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)
Teaching Special Topics in Computer Science (Big Data-Human Computer Interaction)
- 2009-2010 **Instructor, Korea Foreign Migrants Center, Seoul, Korea**
(Voluntary position) Teaching Windows OS and MS Office for non-Korean speakers

Research Advising and Mentoring

Texas A&M University

- 2020-present **Nahyun Kwon (CS PhD)**, *AI-Augmented Intelligent 3D Printing Processes*
Himani Deshpande (CS PhD), *Computational Design Aids for Craft* [c.20]
Rush Hoelscher (CS Undergrad), *Home-IoT Environments for Aging Individuals*
Elaine Yi-Lien Liang (Industrial Distribution MS), *Home-IoT Environment for Aging Individuals*
- 2019-present **Chen Liang (CS MS)**, *Cyber-physical Measurement Systems for Adaptive 3D Design*
- 2019-2020 **Alex Berman (CS PhD)**, *HowDIY, Recommender Systems for 3D Printing Newcomers* [c.17, c.19]

University of Colorado

- 2015-2016 **Srinjita Bhaduri (CS MS)** *Audible Texture: Sensor-less Sound Generator on Tactile Pictures for Children*
Claudia Dauden Roquet (CS Visiting Undergrad) *3D Folded Printgami* (Short paper at DIS'16 [c.3], received 1st place with honor for the undergrad dissertation)
- 2015 Fall. **Caleb Hsu (Undergrad)** *Parametric 3D Modeling by HTML style Markup Language (CraftML)*, (Results integrated into research paper CHI'18 [c.9])
Ellen Reynersen (TAM Undergrad), *Parametric Auditory Artifacts*
- 2015 Sum. **Lindsey Welch, Chantelle Humphries (Highschool Senior)** *3D Printed braille*
Dinah Bowman, & Nueka Lo (Highschool Senior) *Post-processing Techniques for Tactile Textures* (NSF EFRI-REM for Highschool Research Mentor Programs, results invited to the White House for poster presentation)
- 2014 **Thomas M Erickson (CS Undergrad)** *Haptic Feedback Development for 3D Printed Books*
Ian Char (CS Undergrad) *SikuliBot-Automating Physical Interface using Images*, (Demo at UIST'14 [d.4])

Invited Talks

- 2021 Collaborative Human Intelligent-Fabrication Interaction
- **Digital Fabrication at Korea HCI'21** (Virtual, *Host: Andrea Bianchi*)
- 2020 Digital Fabrication and Human-Augmented AI
- **Tactual Labs, Toronto, Canada** (Virtual, *Host: David Holman*)
 - **University of Berkeley, Jacobs Institute for Design**, Berkeley, CA (Canceled due to COVID)
- 2019 Intelligent Digital Fabrication: Collaborative Partnership between Humans and Machines
- **KAIST, HCI@KAIST (School of Computing & Industrial Design), Korea** (*Host: Jubo Kim*)
 - **KAIST, Electrical Engineering, Korea** (*Host: KyoungSoo Park*)

- Ewha Womans University, Computer Science & Engineering, Korea (Host: Uran Oh)
 - Cornell University, Information Science, Ithaca, NY (Host: Francois Guimbretiere)
 - University of Illinois at Chicago, Computer Science, Chicago, IL (Host: Chris Kanich)
 - George Mason University, Computer Science, Fairfax, VA (Host: Yotam Gingold)
 - University of Colorado Boulder, Institute of Cognitive Science (Language Group), Boulder, CO (Host: Eliana Colunga)
- 2018
- University of Victoria, Computer Science, Victoria, Canada (Host: Kwangmoo Yi)
- Interactive Systems for Design and Fabricating Properties
- Adobe, Fabrication Strategy Group Meeting, San Francisco, CA (Host: Wilmot Li)
 - Adobe, Creative Intelligence Lab, San Francisco, CA (Host: Qingnan James Zhou)
- Augmenting Everyday Objects using Digital Fabrication
- HP, Immersive Experiences Lab, Palo Alto, CA (Host: Tico Ballagas)
- Explainable Systems for 3D Modeling & Printing
- 2017
- Seoul National University, Dept. of Communication, Korea (Host: Hwajung Hong)
- Collaborative AR/VR for Remote Instructors and Learners
- 2015
- Ericsson Research, Media Technology Group, Santa Clara, CA (Host: Alvin Jude)
- Moveable Tactile Picture Books for Blind Children
- National Teen's Science Cafe Network, Denver, CO (Host: Stacey)

Invited Exhibition & Workshop as Organizer

- 2019
- Science Discovery, Build Better Books (BBB) Project, CO**
Workshop, *"Prototyping Tactile Pictures by Digital Fabrication Tools-Laser Cutting"*
- 2018
- Smithsonian Design Museum, Cooper Hewitt, 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"*
- Family IdeaLAB, Denver Public Library, Denver, CO**
Workshops, *"Week 1: Tangible 3D Design with Craft Materials"*
"Week 2: Programming 3D Pictures"
- FoST (Future of Storytelling) 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"*
- 2014
- 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"*

Service

Program/Organizing Committee

ACM UIST 2021-2022 Posters program Co-Chair
ACM UIST 2020-2021 Program Committee (Technical papers, Associate Chair)
ACM SCF 2021 Posters program Chair
ACM IUI 2021 Short papers program chair
ACM EICS 2021 Editorial Board/Program Committee (Technical papers, Associate Chair)
ACM UIST 2019-2020 Registrations Co-Chair
ACM CHI 2018-2019 Program Committee (Late Breaking Work, Associate chair)

Conference Paper Review

SIGGRAPH (2020) Technical Papers Program
UIST (2013- Present) Papers
CHI (2014-Present) Papers, Late Breaking Works, Art Exhibition
TEI (2014-Present) Papers, Pictorials
SCF (2018-Present) Papers
DIS (2014- Present) Papers, Pictorials, Provocations and Works-in-Progress
CSCW (2015-2017) Papers, Posters
Others: C&C (2015/2017), IDC (2014-2017)SUI (2014), CHI Play (2014-2016), Mobile HCI (2014-2016), TVX (2014-2016), ISS (Formally ITS, 2014)

Journal Paper Review

Universal Access in the Information Society (UAIS), Springer
Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT'18), ACM
Transactions on Accessible Computing (TACCESS'18), ACM
Research in Developmental Disabilities (RIDDD'15), Elsevier

Guest/Consulting Editor

ODYSSEY Magazine: Adventures in Science, Special Issue on *3D Printing in the World*
Android SDK Reference Book (ISBN: 9788909189026)

Ph.D. Program Admission Committee

Texas A&M University, Computer Science & Engineering (2019-2021)

Faculty Search Committee

University of Colorado, Computer Science Department, PhD student member (2017-2018)

Last Update: Mar 16th, 2021