
EDUCATION

Massachusetts Institute of Technology Ph.D. candidate in Electrical Engineering and Computer Science (CSAIL) Advisors: Robert C. Miller & Krzysztof Z. Gajos. Expected: June 2015	Cambridge, MA Sep.2010–Present
Stanford University M.S. in Computer Science (Specialization: Human-Computer Interaction) Advisor: Scott R. Klemmer	Stanford, CA Sep.2008–Jun.2010
Seoul National University B.S. in Computer Science and Engineering Graduated with honors (Summa Cum Laude)	Seoul, Korea Jun.2008

RESEARCH INTERESTS

Human-Computer Interaction, Learning at scale, Data-driven interaction, Crowdsourcing, Learnersourcing

EMPLOYMENT

User Interface Design Group, MIT CSAIL <i>Research Assistant. Mentor: Robert C. Miller</i>	Cambridge, MA Sep.2010–Present
Microsoft Research <i>Research Intern. Mentors: Meredith R. Morris & Andrés Monroy-Hernández</i>	Redmond, WA May 2014–Aug. 2014
Learning Sciences Team, edX <i>Research Intern. Mentor: Piotr Mitros</i>	Cambridge, MA May 2013–Aug.2013
Creative Technologies Lab, Adobe Systems Inc. <i>Research Intern. Mentor: Joel Brandt</i>	San Francisco, CA May 2011–Sep.2011
USER Group, IBM Almaden Research Center <i>Research Intern. Mentors: Eser Kandogan & Thomas P. Moran</i>	San Jose, CA May 2010–Aug.2010
HCI Group, Stanford University <i>Research Assistant. Mentor: Scott R. Klemmer</i>	Stanford, CA Apr.2009–Jun.2010
SystemBase Co., Ltd. <i>Project Manager & Embedded Software Engineer</i>	Seoul, Korea Dec.2004–Sep.2007
Samsung Electronics Co., Ltd. Software Center <i>Summer Intern</i>	Suwon, Korea Jul.2003–Aug.2003

PUBLICATIONS

Conference Papers

[c.13] Learnersourcing Subgoal Labels for How-to Videos.

Sarah Weir, **Juho Kim**, Krzysztof Z. Gajos, & Robert C. Miller.

CSCW 2015: ACM Conference on Computer-Supported Cooperative Work and Social Computing.
To appear. (28.3% acceptance rate, 11 pages, with revise-and-resubmit cycle)

- [c.12] Data-Driven Interaction Techniques for Improving Navigation of Educational Videos.
Juho Kim, Philip J. Guo, Carrie J. Cai, Shang-Wen (Daniel) Li, Krzysztof Z. Gajos, & Robert C. Miller.
UIST 2014: ACM Symposium on User Interface Software and Technology. (22.2% acceptance rate, 10 pages)
- [c.11] Content-Aware Kinetic Scrolling for Supporting Web Page Navigation.
Juho Kim, Amy X. Zhang, Jihee Kim, Robert C. Miller, & Krzysztof, Z. Gajos.
UIST 2014: ACM Symposium on User Interface Software and Technology. (22.2% acceptance rate, 5 pages)
- [c.10] Attendee-sourcing: exploring the design space of community-informed conference scheduling.
 Anant Bhardwaj, **Juho Kim**, Steven P. Dow, David Karger, Sam Madden, Robert C. Miller, & Haoqi Zhang.
HCOMP 2014: AAAI Conference on Human Computation & Crowdsourcing. (32% acceptance rate, 9 pages)
- [c.9] Crowdsourcing step-by-step information extraction to enhance existing how-to videos.
Juho Kim, Phu Nguyen, Sarah Weir, Philip J. Guo, Robert C. Miller, & Krzysztof Z. Gajos.
CHI 2014: ACM Conference on Human Factors in Computing Systems. (22.8% acceptance rate, 10 pages)
Honorable Mention Award (top 5%).
- [c.8] Frenzy: collaborative data organization for creating conference sessions.
 Lydia Chilton, **Juho Kim**, Paul André, Felicia Cordeiro, James Landay, Dan Weld, Steven P. Dow, Robert C. Miller, & Haoqi Zhang.
CHI 2014: ACM Conference on Human Factors in Computing Systems. (22.8% acceptance rate, 10 pages)
Honorable Mention Award (top 5%).
- [c.7] Understanding in-video dropouts and interaction peaks in online lecture videos.
Juho Kim, Philip J. Guo, Daniel T. Seaton, Piotr Mitros, Krzysztof Z. Gajos, & Robert C. Miller.
L@S 2014: ACM Conference on Learning at Scale. (35% acceptance rate, 10 pages)
- [c.6] How video production affects student engagement: an empirical study of MOOC videos.
 Philip J. Guo, **Juho Kim**, & Rob Rubin.
L@S 2014: ACM Conference on Learning at Scale. (35% acceptance rate, 10 pages)
- [c.5] Community clustering: leveraging an academic crowd to form coherent conference sessions.
 Paul André, Haoqi Zhang, **Juho Kim**, Lydia B. Chilton, Steven P. Dow, & Robert C. Miller.
HCOMP 2013: AAAI Conference on Human Computation & Crowdsourcing. (30% acceptance rate, 8 pages)
Notable Paper Award.
- [c.4] Cobi: a community-informed conference scheduling tool.
Juho Kim, Haoqi Zhang, Paul André, Lydia B. Chilton, Wendy Mackay, Michel Beaudouin-Lafon, Robert C. Miller, & Steven P. Dow.
UIST 2013: ACM Symposium on User Interface Software and Technology. (20% acceptance rate, 10 pages)
- [c.3] Social visualization and negotiation: effects of feedback configuration and status.
 Michael Nowak, **Juho Kim**, Nam Wook Kim, & Clifford Nass.
CSCW 2012: ACM Conference on Computer-Supported Cooperative Work. (40% acceptance rate, 10 pages, with revise-and-resubmit cycle)
- [c.2] How a freeform spatial interface supports simple problem solving tasks.
 Eser Kandogan, **Juho Kim**, Thomas P. Moran, & Pablo Pedemonte.
CHI 2011: ACM Conference on Human Factors in Computing Systems. (26% acceptance rate, 10 pages)
- [c.1] Evolutionary topic maps.
Juho Kim, Won-Wook Hong, & Robert Ian McKay.
KHCI 2009: HCI Korea Conference. (5 pages)

Conference Papers in Submission (under review)

- [u.5] RIMES: Embedding Interactive Multimedia Exercises in Lecture Videos.
Juho Kim, Elena L. Glassman, Andrés Monroy-Hernández, Meredith Ringel Morris.
In submission to CHI 2015 (under review)
- [u.4] Mudslide: A Spatially Anchored Census of Student Confusion for Online Lecture Videos.
Elena L. Glassman, **Juho Kim**, Andrés Monroy-Hernández, Meredith Ringel Morris.
In submission to CHI 2015 (under review)
- [u.3] Factful: Engaging Taxpayers in the Public Discussion of a Government Budget.
Juho Kim, Eun-Young Ko, Jonghyuk Jung, Chang Won Lee, Nam Wook Kim, Jihee Kim.
In submission to CHI 2015 (under review)
- [u.2] BudgetMap: Supporting Issue-Driven Navigation for Government Budget.
Nam Wook Kim, Chang Won Lee, Jonghyuk Jung, Eun-Young Ko, **Juho Kim**, Jihee Kim.
In submission to CHI 2015 (under review)
- [u.1] Apparition: Crowdsourced User Interfaces That Come To Life As You Sketch Them.
Walter Lasecki, **Juho Kim**, Nick Rafter, Onkur Sen, Jeffery Bigham, Michael Bernstein.
In submission to CHI 2015 (under review)

Posters, Demos, and Workshop Papers

- [p.15] Workshop on Connecting Collaborative & Crowd Work with Online Education.
Joseph Jay Williams, Markus Krause, Praveen Paritosh, Jacob Whitehill, Justin Reich, **Juho Kim**, Piotr Mitros, & Neil Heffernan.
CSCW 2015. (to appear)
- [p.14] Leveraging video interaction and content to improve video learning.
Juho Kim.
HCOMP 2014 Workshop on Crowdsourcing, Online Education, and Massive Open Online Courses.
- [p.13] Leveraging video interaction and content to improve video learning.
Juho Kim, Shang-Wen (Daniel) Li, Carrie J. Cai, Krzysztof Z. Gajos, & Robert C. Miller.
CHI 2014 Workshop on Learning Innovation at Scale.
- [p.12] Interaction peaks and data-driven interfaces for online lecture videos.
Juho Kim.
Quanta-CSAIL 2014 workshop poster.
- [p.11] Enhancing how-to videos with crowdsourcing and learnersourcing.
Juho Kim.
Quanta-CSAIL 2014 workshop poster.
- [p.10] Cobi: community-informed conference scheduling.
Juho Kim, Haoqi Zhang, Paul André, Lydia B. Chilton, Anant Bhardwaj, David Karger, Steven P. Dow, & Robert C. Miller.
HCOMP 2013 demo.
- [p.9] User interfaces and crowdsourcing workflows for enhancing the video learning experience.
Juho Kim, Phu Nguyen, Robert C. Miller, & Krzysztof Z. Gajos.
SoCS 2013 Doctoral Symposium.
- [p.8] Learnersourcing subgoal labeling to support learning from how-to videos.
Juho Kim, Robert C. Miller, & Krzysztof Z. Gajos.
CHI2013 Extended Abstracts. (32% acceptance rate)

- [p.7] ToolScape: enhancing the learning experience of how-to videos.
Juho Kim.
CHI2013 Extended Abstracts. (32% acceptance rate)
2nd place, Student Research Competition.
- [p.6] Generating annotations for how-to videos using crowdsourcing.
 Phu Nguyen, **Juho Kim**, & Robert C. Miller.
CHI2013 Extended Abstracts. (32% acceptance rate)
- [p.5] Cobi: communitysourcing large-scale conference scheduling.
 Haoqi Zhang, Paul André, Lydia Chilton, **Juho Kim**, Steven P. Dow, Robert C. Miller, Wendy MacKay,
 & Michel Beaudouin-Lafon.
CHI2013 Interactivity. (32% acceptance rate)
- [p.4] Mechanical Turk is Not Anonymous.
 Matthew Lease, Jessica Hullman, Jeffrey P. Bigham, Michael S. Bernstein, **Juho Kim**, Walter S.
 Lasecki, Saeideh Bakhshi, Tanushree Mitra, & Robert C. Miller.
Social Science Research Network (SSRN) Online, March 6, 2013. SSRN ID: 2228728.
- [p.3] Photoshop with friends: a synchronous learning community for graphic design.
Juho Kim, Ben Malley, Joel Brandt, Mira Dontcheva, Diana Joseph, Krzysztof Z. Gajos, & Robert C. Miller.
CSCW 2012 Interactive Demo.
- [p.2] Crowdsourcing interface for collecting correspondences of web pages.
Juho Kim, Ranjitha Kumar, & Scott R. Klemmer.
UIST 2009 Poster.
- [p.1] Automatic retargeting of web page content.
 Ranjitha Kumar, **Juho Kim**, & Scott R. Klemmer.
CHI 2009 Extended Abstracts.

AWARDS & HONORS

Honorable Mention Award CHI 2014. Among the top 5% of all submissions. [c.9]	Apr.2014
Honorable Mention Award CHI 2014. Among the top 5% of all submissions. [c.8]	Apr.2014
Notable paper award HCOMP 2013. [c.5]	Nov.2013
2nd Place, Student Research Competition CHI 2013, \$300 award + \$500 support. [p.7]	May 2012
1st Place Technical Lecture Award The 8th Annual Young Generation Technical and Leadership Conference	Jan.2012
Best Talk Award Samsung Scholarship Open Talk at the 2011 Samsung Scholarship Academic Camp	Jun.2011
The Samsung Scholarship Tuition and living costs covered for Ph.D. studies (\$50K per year, for 5 years)	2010–2015
The Samsung Scholarship Tuition and living costs covered for Master's studies (\$50K per year, for 2 years)	2008–2010

Independent Study Scholarship

Oct.2007

\$1K Research grant awarded by Center for Teaching & Learning, Seoul National University

Seoul National University Scholarship

Aug.2001–Aug.2004

Merit-based scholarships for 6 semesters

TEACHING & MENTORING**Instructor**

- User Interface Design & Implementation (MIT 6.813/6.831) Spring 2015
Delivering lectures, designing and facilitating in-class activities, hiring and supervising teaching assistants, and redesigning curriculum, problem sets, and final projects. Co-instructor: Prof. Robert C. Miller

Teaching Assistant

- User Interface Design & Implementation (MIT 6.813/6.831) Spring 2012
Mentored student teams in semester-long interface design projects. Graded research and programming assignments, problem sets, and quizzes. Instructor: Prof. Robert C. Miller

Research Mentoring

- Peter Githaiga (UROP, MIT undergraduate) Nov.2014–Present
Integrating LectureScape into the edX platform. Co-mentoring with Piotr Mitros at edX.
- Nam Wook Kim (Harvard SEAS Ph.D. student),
Eun-Young Ko, Chang Won Lee, Jonghyuk Jung (KAIST undergraduates) Dec.2013–Present
BudgetWiser: Crowdsourcing budgetary opinions and promoting online discussions.
- Sarah Weir (Super UROP, MIT undergraduate) Sep.2013–May 2014
Applied learnersourcing to label subgoal structure from how-to videos ([c.13]). Sarah won 2nd place in Student Research Competition at CHI2014 & Robert M. Fano UROP Award at MIT EECS.
- Carolyn Chang & Danny Sanchez (MIT undergraduates) Jul.2013–Aug.2013
Lecture video annotation tool (part of 6.mitx).
- Megan O'Leary & Joseph Hanley (MIT undergraduates) Jul.2013–Aug.2013
edX student activity visualization (part of 6.mitx).
- Michelle Johnson & Ashley Cho (MIT undergraduates) Jul.2013–Aug.2013
edX grade distribution visualization (part of 6.mitx).
- Phu Nguyen (Super UROP, MIT undergraduate) Sep.2012–May 2013
Crowdsourcing step-by-step information from how-to videos ([c.9] and [p.6]).

INVITED TALKS**Data-driven interaction techniques for improving navigation of educational videos**

- Boston University Image and Video Computing group seminar Oct. 27th, 2014
- HarvardX Research Colloquium Sep. 26th, 2014

The future of video

- Samsung Economics Research Institute Dec. 30th, 2013

Video learning at scale with crowdsourcing and learnersourcing

- UVR Lab, Graduate School of Culture Technologies, KAIST Dec. 27th, 2013
- Dept. of Knowledge Service Engineering, KAIST Dec. 23rd, 2013
- UI/UX Inventor Club, Korea Dec. 20th, 2013
- Korean Society of Design Science Seminar Series, Sungkyunkwan University Dec. 19th, 2013

- HCI Lab, Seoul National University Dec. 17th, 2013

- Enhancing the learning experience of how-to videos**
- Graphics Group, MIT CSAIL Apr. 10th, 2013
- edX Learning Sciences Team Mar. 7th, 2013
- Computer Science Department, KAIST Dec. 21st, 2012
- ROSAEC Seminar Series, Seoul National University Dec. 18th, 2012
- Epoch Foundation @ MIT Oct. 17th, 2012

- Online education and massive open online courses (MOOCs)**
- Open Entrepreneur Center Dec. 27th, 2012
- Todam: Boston Korean Students Meeting Oct. 13th, 2012
- Samsung Scholarship Open Talk Jun. 26th, 2012

- Crowdsourcing: engineering collective intelligence**
- Korean Society of Design Science Seminar Series, Yonsei University Dec. 20th, 2012
- Department of Software, Sungkyunkwan University Jul. 3rd, 2012
- Young Generation Technical and Leadership, KSEA Jan. 6th, 2012
- Todam: Boston Korean Students Meeting Oct. 8th, 2011
- Samsung Scholarship Open Talk Jun. 29th, 2011

- Creativity support tools**
- HCI Lab, Seoul National University Jan. 4th, 2011
- Department of Information Convergence at Seoul National University GSCST Jan. 5th, 2011

SELECTED PRESS

Forbes | 2014.08.11

MIT Team Turns 6.9 Million Clicks Into Insights To Improve Online Education

<http://www.forbes.com/sites/peterhigh/2014/08/11/mit-team-turns-6-9-million-clicks-into-insights-to-improve-online-education/>

eCampus News | 2014.08.05

Learning from MOOC mistakes, one click at a time

<http://www.ecampusnews.com/top-news/mooc-learning-767/>

TICBeat | 2014.08.02 (Spanish)

El MIT investiga el camino hacia el aprendizaje online más eficiente

<http://www.ticbeat.com/tecnologias/mit-investiga-aprendizaje-online-eficiente/>

Bostinno | 2014.07.31

MIT-Spun 'YouTube for MOOCs' is Solving a Major Problem Plaguing Online Education

<http://bostinno.streetwise.co/2014/07/31/how-do-online-learners-watch-videos-lecturescape-mits-youtube-for-moocs-516442/>

News Peppermint | 2014.07.29 (Korean)

온라인 교육의 성패를 가르는 요인들

http://newspeppermint.com/2014/07/29/online_education/

MIT News Office | 2014.07.28

What 6.9 million clicks tell us about how to fix online education

<http://newsoffice.mit.edu/2014/what-69-million-clicks-tell-us-about-how-fix-online-education>

PROFESSIONAL SERVICE

Program Committee – Learning at Scale 2015
Posters Co-Chair – UIST 2015
Conference Organizer – Webmaster (CHI 2015)
Conference Organizer – Scheduling + communitysourcing (CHI 2013-2014, CSCW 2014-2015)
Workshop Organizer – Connecting Collaborative & Crowd Work with Online Education (CSCW 2015)
Workshop Organizer – CrowdCamp (HCOMP 2013-2014)
Reviewer – CHI 2008-2015, UIST (2012 & 2014), CSCW (2008 & 2011-2015), ICWSM 2014, EDM 2014, MobileHCI 2014, HCOMP 2013, IWIC 2009
Student Volunteer – CHI 2010-2012, UIST 2012, CSCW 2013, APCHI 2008
Head of Digital Learning Subcommittee – MIT Graduate Student Council May 2013-May 2014
Organizer – Todam interdisciplinary weekly seminar Aug. 2012-Aug.2014
Organizer – MIT CSAIL HCI Seminar Series 2011-Present
Organizer – BostonCHI Labs Research Consortium 2011-Present
President – MIT EECS Korean Graduate Student Association 2012-2013

REFERENCES

Robert C. Miller

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Frédo Durand

Professor, Massachusetts Institute of Technology
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Haoqi Zhang

Assistant Professor, Northwestern University
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Krzysztof Z. Gajos

Associate Professor, Harvard University
kgajos@eecs.harvard.edu

Meredith Ringel Morris

Senior Researcher, Microsoft Research
merrie@microsoft.com

Philip J. Guo

Assistant Professor, University of Rochester
pg@cs.rochester.edu