

MIN KYUNG LEE

Research Scientist
Center for Machine Learning and Health
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EDUCATION

Carnegie Mellon University, School of Computer Science, HCI Institute, Fall 2013

Ph.D. in Human-Computer Interaction

Sara Kiesler (co-chair), Jodi Forlizzi (co-chair), John Zimmerman, and Leila Takayama

Thesis: Designing Personalization in Technology-Based Services

Carnegie Mellon University, School of Computer Science, HCI Institute, 2011

Master of Human-Computer Interaction

Carnegie Mellon University, School of Design, 2007

Master of Design in Interaction Design

Advisors: John Zimmerman, Anind K. Dey and Jodi Forlizzi

Korea Advanced Institute of Science and Technology, 2004

Bachelor of Science, Industrial Design

Summa Cum Laude

Institut National des Sciences Appliquées de Lyon, France, 2001-2002

Exchange student in Département de Génie Productique (Industrial Engineering)

RESEARCH INTERESTS

Human-computer interaction, computer-supported collaborative work, designing human-centered algorithmic technologies, human-robot interaction, design research.

HONORS & AWARDS

NSF Cyber-Physical Systems Early-Career Investigator's Workshop Research

Competition Winner 2015 (Socially responsible cities: Smarter delivery of community service through population sensing and urban technology. Ongoing collaboration with Yasser Shoukry (UCLA) & Vasumathi Raman)

ACM CSCW 2017 Best Paper Honorable Mention

Rising Stars in EECS 2015

Allen Newell Award for Research Excellence 2013

Vanderbilt Agency Conference 2012 Best Student Research Award

ACM DIS 2012 Best Paper Award

ACM/SIGCHI CHI 2011 Best Paper Honorable Mention

ACM/IEEE HRI 2010 Best Paper Award

ACM/IEEE HRI 2010 Best Video Honorable Mention

Design & Emotion 2006 Best Paper Award

Siebel Scholar, 2012-2013

Scholarship awarded for academic excellence and demonstrated leadership to 85 top students from the world's leading business, computer science, and bioengineering schools

Kwanjeong Lee Jong Hwan Scholarship, 2007-2010

Scholarship awarded annually for \$50,000 for tuition and stipend

Samsung Lee Kun Hee Scholarship, 2005-2007

Scholarship awarded annually for \$50,000 for tuition and stipend

Rotary Ambassadorial Scholar, 2005-2006

Scholarship to increase international understanding across different countries

PRIX de l'INSA-Lyon (France), 2004

Awarded President's Prize for top rated exchange students

KAIST Honorary List for Graduates, 2004

Graduated Summa Cum Laude

Government Fellowship | Korea Ministry of Science and Technology, 1999-2004

Photovoltaic Environmental Design Competition | Korea Institute of Energy Research, 2002
Honorary Mention

GRANTS

NSF CPS EAGER. SOCIUS: Socially responsible smart cities, Sept. 2016 - Feb. 2018

PI at CMU with Yasser Shoukry (PI, UCLA) and Vasumathi Raman (Co-PI)

NSF CHS Medium. Deep structures of collaborations: Leveraging physiological sensors to understand and facilitate rapport development (submitted in Nov 2016)

Co-PI with Laura Dabbish (PI) and Geoff Kaufman (Co-PI)

PROFESSIONAL EXPERIENCE

Carnegie Mellon University, Center for Machine Learning and Health, Oct. 2015-Present
Research Scientist

Carnegie Mellon University, School of Computer Science, HCI Institute, Oct. 2013-Sept. 2015
Postdoctoral fellow with Laura Dabbish

Willow Garage, Summer 2010

Visiting scholar, responsible for fieldwork on mobile remote presence in organizations

Center for Work, Technology & Organization, Stanford, Summer 2010

Visiting scholar, responsible for research on design approaches to organizational changes

Carnegie Mellon University, HCI Institute, 2006

Research assistant, responsible for ethnographic field study and user testing for smart home research

SK Telecom, 2004

Interaction designer, responsible for conception, prototyping, and evaluation of interface for an autonomous home robot and intelligent information services for a mobile phone

Motorola, Winter 2003

Interaction designer intern, responsible for cultural study of Korea, China, and Japan and GUI design for mobile phones

Philips Design in Paris, Summer 2002

Interaction designer intern, responsible for conception of new interface and GUI design for mobile phones

PUBLICATIONS

The top-tier venues in human-computer interaction research include ACM CHI, CSCW, Ubicomp, and HRI conferences.

CONFERENCE PAPERS

Lee, M. K., Kim, J. & Lizarondo, L. A human-centered approach to algorithmic services: Considerations for fair and motivating smart community service management that allocates donations to non-profit organizations. To appear in *Proceedings of the ACM/SIGCHI Conference on Human Factors in Computing Systems (CHI 2017)*.

Lee, M. K. & Baykal S. Algorithmic mediation in group decisions: Fairness perceptions of algorithmically mediated vs. discussion-based social division. To appear in *Proceedings of the ACM Conference on Computer-Supported Cooperative Work (CSCW 2017)*.

Best Paper Honorable Mention

Lee, M. K., Kim, J., Forlizzi, J., & Kiesler, S. (2015). Personalization revisited: A reflective approach helps people better personalize health services and motivates them to increase physical activities. In *Proceedings of the ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2015)*, 743-754. 24% acceptance rate.

Lee, M. K., Kusbit, D., Metsky, E., & Dabbish, L. (2015). Working with machines: The impact of algorithmic, data-driven management on human workers. In *Proceedings of the ACM/SIGCHI Conference on Human Factors in Computing Systems (CHI 2015)*, 1603-1612. 23% acceptance rate.

Lee, M. K., Fruchter, N., & Dabbish, L. (2015). Making decisions from a distance: The impact of technological mediation on riskiness and dehumanization. In *Proceedings of the ACM Conference on Computer-Supported Cooperative Work (CSCW 2015)*, 1576-1589. 28% acceptance rate.

Lee, M. K., Kiesler, S., Forlizzi, J., & Rybski, P. (2012). Ripple effects of embedded social agents: Field study of a social robot in the workplace. In *Proceedings of the ACM/SIGCHI Conference on Human Factors in Computing Systems (CHI 2012)*, 695-704. 23% acceptance rate.

Lee, M. K., Forlizzi, J., Kiesler, S., Rybski, P., Antanitis, J., & Savetsila, S. (2012). Personalization in HRI: A longitudinal field experiment. In *Proceedings of the ACM/IEEE International Conference on Human-Robot Interaction (HRI 2012)*, 319-326. 25% acceptance rate.

Odom, W., Zimmerman, J., Davidoff, S., Forlizzi, J., Dey, A. K., & Lee, M. K. (2012). A fieldwork of the future with user enactments. In *Proceedings of the ACM Conference on Designing Interactive Systems (DIS 2012)*, 338-347. 26% acceptance rate.

Best Paper Award

Strabala, K., Lee, M. K., Dragan, A., Forlizzi, J., & Srinivasa, S. (2012). Learning the communication of intent prior to physical collaboration. In *Proceedings of the IEEE Symposium on Robot and Human Interactive Communication (RO-MAN 2012)*, 968-973.

Lee, M.K. & Takayama, L. (2011). "Now, I have a body": Uses and social norms for mobile remote presence in the workplace. In *Proceedings of the ACM/SIGCHI Conference on Human Factors in Computing Systems (CHI 2011)*, 33-42. 26% acceptance rate.

Best Paper Honorable Mention

Lee, M.K., Kiesler, S., & Forlizzi, J. (2011). Mining behavioral economics to design persuasive technology for healthy choices. In *Proceedings of the ACM/SIGCHI Conference on Human Factors in Computing Systems (CHI 2011)*, 325-334. 26% acceptance rate.

Cakmak, M., Srinivasa, S., Lee, M.K., Kiesler, S., & Forlizzi, J. (2011). Using spatial and temporal contrast for fluent robot-human hand-overs. In *Proceedings of the ACM/IEEE International Conference on Human Robot Interaction (HRI 2011)*, 489-496. 22% acceptance rate.

Cakmak, M., Srinivasa, S., Lee, M.K., Forlizzi, J., & Kiesler, S. (2011). Human preferences in robot-human hand-over configurations. In *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2011)*, 1986-1993. 32% acceptance rate.

Lee, M.K., Kiesler, S., & Forlizzi, J. (2010). Receptionist or information kiosk? How do people talk with a robot? In *Proceedings of the ACM Conference on Computer-Supported Cooperative Work (CSCW 2010)*, 31-40. 20% acceptance rate.

Lee, M.K., Kiesler, S., Forlizzi, J., Srinivasa, S., & Rybski, P. (2010). Gracefully mitigating breakdowns in robotic services. In *Proceedings of the ACM/IEEE International Conference on Human Robot Interaction (HRI 2010)*, 203-210. 21% acceptance rate.

Best Paper Award

Lee, M.K., Forlizzi, J., Rybski, P.E., Crabbe, F., Chung, W., Finkle, J., Glaser, E., & Kiesler, S. (2009). The Snackbot: Documenting the design of a robot for long-term human-robot interaction. In *Proceedings of the ACM/IEEE International Conference on Human Robot Interaction (HRI 2009)*, 7-14. 19% acceptance rate.

Lee, M.K. & Forlizzi, J. (2009). Designing adaptive robotic services. In *Proceedings of the International Association of Societies of Design Research (IASDR 2009)*.

Davidoff, S., Lee, M.K., Dey, A.K., & Zimmerman, J. (2007). Rapidly exploring application design through speed dating. In *Proceedings of the International Conference on Ubiquitous Computing (UbiComp 2007)*, 429-446. 19% acceptance rate.

Lee, M.K., Davidoff, S., Zimmerman, J., & Dey, A.K. (2007). Smart bag: Managing home and raising children. In *Proceedings of the International Conference on Designing Pleasurable Products and Interfaces (DPPI 2007)*, 434-437.

Lee, M.K., Davidoff, S., Zimmerman, J., & Dey, A.K. (2006). Smart homes, families and control. In *Proceedings of the International Conference on Design & Emotion (D&E 2006)*.

Best Paper Award

Davidoff, S., **Lee, M.K.**, Yiu, C., Zimmerman, J., & Dey, A.K. (2006). Principles of smart home control. In *Proceedings of the International Conference on Ubiquitous Computing (UbiComp 2006)*, 19-34. 13% acceptance rate.

BOOK CHAPTER

Lee, M.K., Davidoff, S., Zimmerman, J., & Dey, A.K. (2008). Designing for control: Finding roles for smart homes. In P. Desmet, J. van Erp, and M. Karlsson (eds.), *Design & Emotion Moves* (pp. 246-266). UK:Cambridge Scholars Publishing.

JOURNAL ARTICLE

Strabala, K., **Lee, M. K.**, Dragan, A., Forlizzi, J., Srinivasa, S, Cakmak, M., & Micelli, V. (2013). Toward seamless human-robot handovers. *Journal of Human-Robot Interaction*, 2(1), 112-132.

MAGAZINE ARTICLE

Lee, M. K. Algorithmic bosses, robotic colleagues: Toward human-centered algorithmic workplaces. (2017). To appear In *XRDS: Crossroads, The ACM Magazine for Students*, 23(2).

Simmons, R., Makatchev, M., Kirby, R., **Lee, M. K.**, Fanaswala, I., Browning, B., Forlizzi, J., & Sakr, M. (2011). Believable robot characters. In *AAAI AI Magazine*, 32(4), 39-52.

EXTENDED ABSTRACTS, WORKSHOP PAPERS & VIDEOS (PEER-REVIEWED)

Kim, M., **Lee, M.K.**, & Dabbish, L. (2015). Shop-i: Gaze based interaction in the physical world for in-store social shopping experience. In *Proceedings of the ACM Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA 2015)*, 1253-1258. 25% acceptance rate

Lee, M.K. (2011). Opportunities and challenges in mining behavioral economics to design persuasive technology. In *CHI 2011 PINC (Persuasion, Influence, Nudge & Coercion through mobile devices) workshop*.

Lee, M.K., Tang, K. P., Forlizzi, J., & Kiesler, S. (2011). Understanding users' perception of privacy in human-robot interaction. In *Late-breaking Reports of Human-Robot Interaction (HRI 2011)*, 181-182.

Lee, M.K., Forlizz, J., Kiesler, S., Cakmak, M., & Srinivasa, S. (2011). Predictability or adaptivity? Designing robot handoffs modeled from trained dogs and people. In *Late-breaking Reports of Human-Robot Interaction (HRI 2011)*, 179-180.

Kim, M.S., Cha, B.K., Park, D.M., Lee, S.M., Kwak, S., & **Lee, M.K.** (2010). Dona: Urban donation motivating robot. In *Video Session of Human-Robot Interaction (HRI 2010)*.

Best Video Honorable Mention

Kim, M.S., Cha, B.K., Park, D.M., Lee, S.M., Kwak, S., & **Lee, M.K.** (2010). Dona: Urban donation motivating robot. In *Late-breaking Reports of Human-Robot Interaction (HRI 2010)*, 159-160.

Lee, M.K., Dillahunt, T., Pendleton, B., Kraut, R., & Kiesler, S. (2009). Tailoring websites to increase contributions to online communities. In *Extended Abstracts of Human Factors in Computing Systems (CHI EA 2009)*, 4003-4008.

Lee, M.K. & Makatchev, M. (2009). How do people talk with a robot: An analysis of human-robot dialogues in the real world. In *Extended Abstracts of Human Factors in Computing Systems (CHI EA 2009)*, 3769-3774.

Makatchev, M., **Lee, M.K.**, & Simmons, R. (2009). Relating initial turns of human-robot dialogues to discourse. In *Late-breaking Reports of Human-Robot Interaction (HRI 2009)*, 321-322.

Davidoff, S., **Lee, M.K.**, Zimmerman, J., & Dey, A.K. (2006). Socially-aware requirements for a smart home for families. In *Proceedings of the International Symposium on Intelligent Environments*, 45-48.

PATENTS

Min Kyung Lee, Myoung Seock Kim: Interactive Toy Set, KAIST, KR#0513261

PROFESSIONAL SERVICE

CONFERENCES

Robotics: Science and Systems (RSS) Program Committee 2017

ACM/SIGCHI CHI Conference Telepresence Chair 2017

ACM/IEEE HRI Conference Program Committee Associate Chair 2015-2017

ACM Ubicomp Conference Program Committee Associate Chair 2016

ACM/SIGCHI CHI Conference Work-In-Progress Associate Chair 2010

HRI Student Volunteers Co-Chair 2010

Sharing Experiences Conference Co-Chair 2009

Conference co-chair. Co-organized with Jaewoo Chung (MIT Media Lab), Keywon Chung (MIT Media Lab), Jieun Hwang (Univ. of Seoul), Seonghyuck Lee (Oracle). Instructed a three day workshop on designing robotic services in conjunction with the conference.

Emergence 2007 Conference Program Committee, Carnegie Mellon University

The first conference on service design in US, which spun off Service Design Network (www.service-design-network.org). Responsible for coordinating reviews of paper submissions

PANELS & WORKSHOPS

ACM/SIGCHI CHI 2016 Panel - Algorithmic Authority: The Ethics, Politics, and Economics of Algorithms that Interpret, Decide, and Manage

Co-organizer, with Caitlin Lustig (UC Irvine), Katie Pine (UC Irvine), Bonnie Nardi (UC Irvine), Lilly Irani (UC San Diego), Dawn Nafus (Intel), and Christian Sandvig (Univ. of Michigan)

ACM CSCW 2016 Workshop - Algorithms at Work

Co-organizer, with Susann Wagenknecht (Univ. of Siegen), Caitlin Lustig (UC Irvine), Jacki O'Neill (Microsoft), and Himanshu Zade (Univ. of Washington)

Global Service Jam 2012

Co-organizer, with Lauren Champman and Abby Wilson (Maya Design); Mark Choi, Hakon Faste, Ian Hargraves, Miso Kim, and Chongho Lee (CMU School of Design); and Gabriella Marcu (CMU HCI Institute).

HRI Pioneers Workshop 2010

Co-organizer, with Kate Tsui (UML), Henriette Cramer (Univ. of Amsterdam), Osawa Hiroataka (Keio Univ.), Laurel Riek (Univ. of Cambridge), Satoru Satake (ATR), Kristen Stubbs (iRobot), and Ja-Young Sung (Georgia Tech).

REVIEW

Journals
Journal of Computer-Mediated Communication 2016-2017
ACM Transactions on Computer-Human Interaction (ToCHI) 2016
International Journal of Social Robotics 2010-2017
IEEE Pervasive Computing 2014-2015
Journal of Human-Robot Interaction 2012, 2015
ACM Transactions on Interactive Intelligent Systems 2011
Interaction Studies 2011
Journal of Behavioral Robotics 2010
International Journal of Design 2010

Conferences
ACM/SIGCHI Conference on Human Factors in Computing Systems (CHI) 2009-2017
ACM/IEEE International Conference on Human Robot Interaction (HRI) 2009-2017
ACM Conference on Computer-Supported Cooperative Work & Social Computing (CSCW) 2015-2017
ACM Conference on Designing Interactive Systems (DIS) 2012, 2016
ACM Conference on Ubiquitous Computing (UbiComp) 2016
IEEE Pervasive Magazine 2014-2015
Graphics Interface 2011

VOLUNTEERING

Reviewer for National Center for Women Information Technology Award for Aspirations in Computing 2009

Student volunteer

CHI 2009, Service Design Network 2010, HRI 2011, HRI 2012

Design consultant | Daejon Science Expo Park, 2004

Consulted on the design of a sign system of the Daejon Science Expo Park renovation

INVITED TALKS

Society for the Advancement of Socio-Economics (SASE) Conference, University of California, Berkeley, Berkeley, CA. June 25, 2016

“Working with machines: The impact of algorithmic, data-driven management on human workers”

University of California, Berkeley, School of Information, Berkeley, CA. Apr. 7, 2016

“Unpacking the potential of algorithms in human matters”

Harvard University, Berkman Center for Internet and Society, Boston, MA. Nov. 10, 2015

“Unpacking the potential of algorithms in human matters”

Rising Star in EECS, MIT, Boston, MA. Nov. 9, 2015
“Unpacking the potential of algorithms in human matters”

Carnegie Mellon University, HCI Institute, Pittsburgh, PA. Oct. 30, 2015
“Unpacking the potential of algorithms in human matters”

NSF Early-Career Investigator’s Workshop on CPS in Smart Cities, Seattle, WA. Apr. 13, 2015
“Designing human-centered cyber-physical systems: Algorithmic management and mediated decision-making”

University of Michigan, School of Information, Ann Arbor, MI. Oct. 28, 2014
“Designing the future of work: Understanding the impact of intelligent machines on management, collaboration, and decision-making”

TEACHING EXPERIENCE

Human Factors | Carnegie Mellon University, HCI Institute, Spring 2015
Guest lecturer. Organized a session on physiological and consumer-graded neurological sensors for human factors studies with Laura Dabbish

Applied Research Methods | Carnegie Mellon University, HCI Institute, Fall 2014
Guest lecturer, Organized a session on physiological and consumer-graded neurological sensors as a research tool with Sara Kiesler

Designing for Service | Carnegie Mellon University, School of Design, Fall 2012
Guest lecturer. Led design critiques with Jodi Forlizzi

Design Seminar | Carnegie Mellon University, School of Design, Spring 2011
Guest lecturer. Lectured on the role of theory in design with Peter Scupelli

Basic Interaction Design | Carnegie Mellon University, HCI Institute, Spring 2010
Teaching Assistant with Eric Paulos and Peter Scupelli

HCI Method | Carnegie Mellon University, HCI Institute, Fall 2009
Teaching Assistant with John Zimmerman and Aniket Kittur

Basic Interaction Design | Carnegie Mellon University, School of Design, Fall 2009
Guest lecturer. Lectured on the speed dating design method with Jodi Forlizzi

Advanced Interface Design | Carnegie Mellon University, School of Design, Fall 2006
Teaching Assistant with Jodi Forlizzi

STUDENT MENTORING

Graduate & Undergraduate Researchers (Selected List)

Su Baykal (HCI & Cognitive Psychology) 2014-2016, now at Google

Nathaniel Fruchter (Decision Science) 2014-2016, now a Master’s student at MIT, Technology and Policy Program

Dylan Steele (Physics & HCI) 2015-2016

Daniel Kusbit (Ethics, History & Public Policy) 2014-2015, now at Allegheny County Controller’s office

Evan Metsky (HCI & Cognitive Psychology) 2014-2015, now a Master’s student at Univ. of Michigan, School of Information

Mirae Kim (HCI) Fall 2014, now at HUGE
Sarun Savetsila (Computer Science) Spring & Summer 2011, now at Royal Thai Air Force
Yiwen Jia (Information Systems) Fall 2009, now at GE
Sean Kim (Information Systems) Fall 2009, now at McKinsey & Company
Mitchell Luban (Electrical Engineering) Fall 2009, now at NVIDIA
Jane Jiyoung Park (Communication Design) Fall 2009, now at Microsoft
Andy Echenique (Psychology) Summer 2009, now at Informatica

SELECTED PRESS

Algorithms & Robots
in the Workplace

“Artificial intolerance” in **MIT Technology Review**, Mar. 2016 [[Link](#)]
“On-demand workers unite online to fight Uber and the gig economy” in **New Scientist**,
Dec. 2015 [[Link](#)]
“When your boss is an Uber algorithm” in **MIT Technology Review**, Dec. 2015 [[Link](#)]
“Detest Uber’s surge pricing? Some drivers don’t like it either” in **CNET**, Aug. 2015 [[Link](#)]
“How Uber surge pricing really works” in **the Washington Post**, Apr. 2015 [[Link](#)]
“When your boss wears metal pants” in **Harvard Business Review**, June. 2015 [[Link](#)]
“How robots will work with us isn’t only a technological question” in **Harvard Business
Review**, Mar. 2014 [[Link](#)]
“Why it’s bad to be a robot on the phone” in **The Atlantic**, Nov. 2014 [[Link](#)]
“Polite robot overlords will be more persuasive” in **IEEE Spectrum**, Mar. 2013 [[Link](#)]
“How a robot can replace you at work - and how it can’t” in **New Scientist**, Mar. 2011 [[Link](#)]
“Just like Mombot used to make” in **New York Times**, Feb. 2010 [[Link](#)]
“Snackbot: Polite host, research platform, vending machine” on **CNET**, Oct. 2009 [[Link](#)]
“The new Pittsburgh” on **CBS National News (Television)**, Sept. 2009 [[Link](#)]

Smart Bag

Designing interactive systems: People, activities, contexts, technologies (Book), 2009
David Benyon, Phil Turner, and Susan Turner. Addison Wesley.

Mobile technology for children: Designing for interaction and learning (Book), 2009
Allison Drulin. Morgan Kaufmann

“The Kindness Lab” in **Spirit Magazine**, 2008

Speed Dating
Method

**Universal methods of design: 100 ways to research complex problems, develop
innovative ideas, and design effective solutions** (Book), 2012
Bruce Hanington, Bella Martin. Rockport Publishers.

“Speed dating as a design method” in **Adaptive Path blog**, Sept. 2007

INVITED RESEARCH FORUMS

NSF CPS PI meeting

Washington D.C., Oct. 2016

NIST & US Ignite Global City Team Challenge Expo

Washington D.C., June 2015

NSF Early-Career Investigator's Workshop on Cyber-Physical Systems in Smart Cities

Seattle, WA, Apr. 2015

NSF/CRA 2025 The New Making Renaissance Workshop

Napa Valley, CA, June 2014

NSF Early-Career Professionals' Workshop on Exploring New Frontiers in Cyber-Physical Systems

Washington D.C., Mar. 2014

Google GRAD Forum

Google, Mountain View, CA, Jan. 2012

Summer Institute, Consortium for the Science of Sociotechnical Systems

Captiva Island, FL, June 2011

NSF-JST joint workshop on social remote presence

Palo Alto, CA, Nov. 2010