

# Sunyoung Kim

## **Assistant Professor**

Department of Library & Information Science  
School of Communication & Information  
Rutgers University, the State University of New Jersey  
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## **CURRENT EMPLOYMENT**

Assistant Professor, Department of Library and Information Science, Rutgers University (2016 –)  
Associate Faculty, Department of Computer Science, Rutgers University (2016 –)  
Associate Faculty, School of Arts and Sciences, Rutgers University (2017–)

## **RESEARCH INTEREST**

Human-Computer Interaction, Ubiquitous computing, Health, wellness & environmental sustainability, Qualitative & ethnographic methods, User-centered design, Design research

**Application areas:** Everyday health and wellness, Healthy aging, Patient-centric care, Vulnerable population, Environmental sustainability, Community empowerment, Citizen science

## **EDUCATION AND PROFESSIONAL PREPARATION**

### 2014-2016 **Postdoctoral fellow, Center for Research on Computation and Society**

John A. Paulson School of Engineering and Applied Sciences  
Harvard University, Cambridge, MA, USA  
Advisors: Krzysztof Z. Gajos & Barbara J. Grosz

### 2014 **Ph.D. in Human-Computer Interaction**

Human-Computer Interaction Institute, School of Computing  
Carnegie Mellon University, Pittsburgh, PA, USA  
Committee: Eric Paulos (co-chair), Jennifer Mankoff (co-chair), Niki Kittur, Jason Ellis  
Thesis: “Democratizing Mobile Technology in Support of Volunteer Activities in Data Collection”

### 2008 **M.S. in Human-Computer Interaction**

School of Computing  
Georgia Institute of Technology, Atlanta, GA, USA  
Advisor: Gregory Abowd  
Thesis: “Are you sleeping?: sharing portrayed sleeping status within a social network

2000      **B.S. in Architecture & Housing and Interior Design**  
Yonsei University, Seoul, Korea

## **PROFESSIONAL EXPERIENCE**

2016 – Present Assistant Professor, Department of Library & Information Science, School of Communication & Information, Rutgers University, New Brunswick, NJ

2008 - 2014      Research Assistant, Human-Computer Interaction Institute, Carnegie Mellon University, Pittsburgh, PA

Summer 2010      Research Intern, Mobile computing group, IBM Research Almaden, CA (Supervisor: Jeff Pierce)

Summer 2008      Research Intern, Intel Research Seattle, WA (Supervisor: Daniel Avrahami)

2007 - 2008      Research Assistant, School of Interactive Computing, Georgia Institute of Technology, Atlanta, GA

Fall 2006          Research Assistant, College of Architecture, Georgia Institute of Technology, Atlanta, GA

2003 - 2006      Assistant Manager, Search Portal Division, Daum Communications, Seoul, Korea

2000 - 2003      Interaction Designer, Intelligent Apartment Team, CVNet, Samsung, Seoul, Korea

## **GRANTS, HONORS & AWARDS**

2019-2021      Busch Biomedical Grant **(PI)**  
“Creating a novel indoor air quality monitoring tool for children with asthma”,  
\$39,963

2019-2020      Rutgers’ Community Design for Health and Wellness Grant **(PI)**  
“Designing for Engagement in Indoor Air Quality in Low-Income Households”,  
\$17,800

2019              Rutgers’ Community Design for Health and Wellness Grant **(PI)**  
“Exploring Design Opportunities to Enhance Online Health Information Seeking  
Practices through Public Libraries“, \$3,000

2019              Annual faculty outstanding research award, Department of Library and  
Information Science, Rutgers University

2019              Nominated for the best paper in HICSS 2019  
“SwellFit: Developing A Wearable Sensor for Monitoring Peripheral Edema.”

- 2018-2019 New Jersey Health Foundation Research Grant Program (**PI**)  
 “Developing a Dialog-Based Personal Assistant to Support Social Engagement Among Older Adults”, \$34,011
- 2018 Rutgers SCI Grant for Individual Research Funding (**PI**)  
 “Towards the Design of Persuasive Systems for Improving Indoor Environmental Quality in Low-Income Households” PI, \$3,000
- 2017 – 2019 Century for the Cure Foundation (**co-PI**)  
 Designing collaborative clinical practice with a personalized patient support system for high-risk medical decision-making, \$50,000
- 2017 Rutgers SCI Research Development Grant (**PI**)  
 “Enhancing the Perception and Assessment of Indoor Environmental Quality in Low-Income Households”, \$3,600
- 2017 Rutgers University Council Grant (**PI**)  
 “The Wisdom of the Elderly: Engaging Seniors to Design Patient Portals for Older Adults”, \$3,400
- 2014 An invited participant at the Rising Stars in EECS, University of California, Berkeley
- 2013 A selected participant at the Human Computer Interaction Symposium
- 2011 IBM Research Graduate Fellowship

## **PUBLICATIONS**

### **Under submission**

1. **Kim, S.**, and Choundhury, A. “It’s Good but Not for Me: Exploring Older Adults’ Perceived Usefulness of Smart Speaker.” (to CHI 2020)
2. **Kim, S.** and Li, M., “Awareness, Understanding, and Action: A Conceptual Framework of User Experiences and Expectations about Indoor Air Quality Visualizations.” (to CHI 2020)
3. **Kim, S.**, Li, M., Senick, J., and Mainelis, G. “Exploring Design Factors to Engage Children in Monitoring Indoor Air Quality from Children’s Perspective” (to CHI 2020)
4. **Kim, S.**, Mikesell, L., Aakhus, M., “User-Centered Design to Improve the Communication about Prognosis with Leukemia Patients” (to the International Journal of Medical Informatics)
5. **Kim, S.**, Choundhury, A., “The Comparison of Older and Younger Adults’ Attitudes Towards the Adoption and Use of Wearable Activity Trackers” (to the Journal of Medical Internet Research)

## Journals

1. **Kim, S.**, Senick, J., and Mainelis, G. (2019) "Sensing the Invisible: Understanding the Perception of Indoor Air Quality Among Children in Low-Income Families", *International Journal of Child-Computer Interaction*.
2. **Kim, S.**, and Fadem, S. (2018) "Communication matters: Exploring older adults' current use of patient portals." *International journal of medical informatics* 120 (2018): 126-136.

## Peer-Reviewed Conference Proceedings

1. **Kim, S.**, Mikesell, L., Fadem, S., and Aakhus, M. (2019) "Designing a Personalized Support Tool for Patients Facing Bone Marrow Transplant." In Proceedings of *the 13th EAI International Conference on Pervasive Computing Technologies for Healthcare*, pp. 41-50. ACM, 2019.
2. **Kim, S.** (2019) "Comparative Review of Research on Health Information Technology in Biomedical Informatics and Human-Computer Interaction." In *the International Conference on Human-Computer Interaction*, pp. 16-32. Springer, Cham, 2019.
3. **Kim, S.**, Allen, T., and Bhatt, T. (2019). "Creating an EMR System to Support Mobile Clinics in Haiti." In Proceedings of *the ACM Conference on Information and Communication Technologies and Development*. p. 23. ACM, 2019.
4. **Kim, S.**, Ivarantchi, Y., and Gajos, K. Z. (2019). "SwellFit: Developing A Wearable Sensor for Monitoring Peripheral Edema." In Proceedings of *the 52nd Hawaii International Conference on System Sciences*. 2019. **(Best paper honorable mention)**
5. **Kim, S.** (2018). "Investigating Everyday Information Behavior of Using Ambient Displays: A Case of Indoor Air Quality Monitors." In Proceedings of *the ACM Conference on Human Information Interaction & Retrieval*, pp. 249-252. ACM.
6. **Kim, S.**, Gajos, K. Z., Muller, M., and Grosz, B. J. (2016). "Acceptance of mobile technology by older adults: a preliminary study." In Proceedings of *the ACM Conference on Human-Computer Interaction with Mobile Devices and Services*, pp. 147-157. ACM.
7. **Kim, S.**, Mankoff, J., and Paulos, E. (2015). "Exploring barriers to the adoption of mobile technologies for volunteer data collection campaigns." In Proceedings of *the ACM Conference on Human Factors in Computing Systems*, pp. 3117-3126. ACM.
8. **Kim, S.**, Paulos, E., and Mankoff, J. (2013). "inAir: a longitudinal study of indoor air quality measurements and visualizations." In Proceedings of *the ACM Conference on Human Factors in Computing Systems*, pp. 2745-2754. ACM.
9. **Kim, S.**, Mankoff, J., and Paulos, E. (2013). "Sensr: evaluating a flexible framework for authoring mobile data-collection tools for citizen science." In Proceedings of the ACM Conference on Computer Supported Cooperative Work and Social Computing, pp. 1453-1462. ACM.
10. **Kim, S.**, Robson, C., Zimmerman, T., Pierce, J., and Haber, E. M. (2011). "Creek watch: pairing usefulness and usability for successful citizen science." In Proceedings of *the ACM Conference on Human Factors in Computing Systems*, pp. 2125-2134. ACM.

11. **Kim, S.**, and Paulos, E. (2011). "Practices in the creative reuse of e-waste". In Proceedings of *the ACM Conference on Human Factors in Computing Systems* (pp. 2395-2404). ACM
12. **Kim, S.**, and Paulos, E. (2010). "InAir: sharing indoor air quality measurements and visualizations." In Proceedings of *the ACM Conference on Human Factors in Computing Systems*, pp. 1861-1870. ACM.
13. **Kim, S.**, Paulos, E., and Gross, M. D. (2010). "WearAir: expressive t-shirts for air quality sensing." In Proceedings of *the ACM Conference on Tangible, Embedded, and Embodied Interaction*, pp. 295-296. ACM.
14. **Kim, S.**, and Paulos, E. (2009). "Listening to air quality". In Proceedings of *the First international Conference on Expressive Interactions for Sustainability and Empowerment* (pp. 9-9). British Computer Society.
15. **Kim, S.**, and Paulos, E. (2009). "inAir: measuring and visualizing indoor air quality." In Proceedings of the ACM Conference on Ubiquitous Computing, pp. 81-84. ACM.
16. **Kim, S.**, Kientz, J. A., Patel, S. N., and Abowd, G. D. (2008). "Are you sleeping?: sharing portrayed sleeping status within a social network". In Proceedings of the ACM Conference on Computer Supported Cooperative Work and Social Computing (pp. 619-628). ACM.

### Book Chapter

1. Paulos, E., **Kim, S.**, and Kuznetsov, S (2010). "The Rise of the Expert Amateur: Citizen Science and Micro –Volunteerism", chapter contribution in *From Social Butterfly to Engaged Citizen*. Edited by Marcus Foth, MIT Press.

### Doctoral Consortium

1. **Kim, S.** (2012). "A flexible tool for participating, authoring, and managing citizen science campaigns on-the-go". In Proceedings of *the ACM Conference on Ubiquitous Computing* (pp. 556-559). ACM.

### Extended Abstracts

1. Sarah, F., **Kim, S.**, Mikesell, L., Aakhus, M., and Strair, R. (2018). "Personalizing Decision Support for AML Patients by Incorporating Experienced Patient Videos about Treatment Outcomes", In *the BMT Tandem Meetings*
2. Aakhus, M., Mikesell, L., and **Kim, S.** (2018). "Designing deliberation into Precision Medicine", In *Proceedings of the 9th Conference of the International Society for the Study of Argumentation*.
3. Fadem, S., **Kim, S.**, Mikesell, L., Bontempo, A. and Aakhus, M. (2017). "Designing an interactive system of experiential videos to support patients considering bone marrow transplant in their decision- making process", In *the Women's Healthcare Innovation and Leadership Showcase*.
4. **Kim, S.**, Mankoff, J., and Paulos, E. (2014). "Exploring the Opportunities of Mobile Technology Use in Nonprofit Organizations", In Proceedings of *the ACM Conference on Human Factor in Computing System*, Extended Abstracts (pp. 1939-1944). ACM.

5. **Kim, S.** and Paulos, E. (2012). "A subscription-based authoring tool for mobile citizen science campaigns". In Proceedings of *the ACM Conference on Human Factor in Computing System*, Extended Abstracts (pp. 2135-2140). ACM.

### **Workshop Papers and Others**

1. **Kim, S.**, Iravantchi, Y., Gajos, K. Z., and Grosz, B. J. (2015). "Exploring Opportunities for Social Infrastructure in Congestive Heart Failure Management". In *the ACM Conference on Computer Supported Cooperative Work and Social Computing*, Workshop on Moving Beyond e-Health and the Quantified Self, Vancouver, BC, Canada.
2. **Kim, S.**, Mankoff, J., and Paulos, E. (2014). "Reflecting the Current Practices of Technology Use in Volunteer Data Collection Activities on the Opportunities of Mobile Technology", Technical Report, CMU-HCII-14-107, Carnegie Mellon University.
3. **Kim, S.** (2013). "E-waste: Repair or Replace? That is the Question" In *the Human Computer Interaction Consortium*, Monterey, CA, USA
4. **Kim, S.** (2013). "Sustainable Reusability in the Rise of Electronic Waste" In *the ACM Conference on Human Factor in Computing Systems*, Workshop on Reclaiming Repair, Paris, France.
5. **Kim, S.** (2013). "Technology to empower citizen scientists", In *the U.S. Environmental Protection Agency*, Kentucky, USA.
6. **Kim, S.** (2011). "Environmental inference: using activity inference as a way to collect environmental data for urban health", In *the ACM Conference on Human Factor in Computing Systems*, Workshop on Data collection by the people for the people, Vancouver, BC, Canada.
7. **Kim, S.** and Paulos, E. (2010). "Understanding e-Waste: How to Encourage Re-use and Longevity-of-use of Domestic e-Waste", In *the ACM Conference on Human Factor in Computing Systems*, Workshop on Examining appropriation, re-use and maintenance for sustainability, Atlanta, Georgia, USA.
8. **Kim, S.** and Paulos, E. (2009). "Building a simple, low-cost air quality sensor for monitoring indoor air quality", In *the ACM Conference on Human Factor in Computing Systems*, Workshop of DIY for CHI: methods, Communities and values of reuse and customization, Boston, Massachusetts, USA.

## **TEACHING**

### **Instructor**

- Interaction Design, Fall 2019 - (Graduate level)
- Foundations of Interaction Design and Informatics, Spring 2019 - (Graduate level)
- Experimental Design and Evaluation for Interaction Design, Fall 2017 - (Graduate level)
- Critical Thinking in Designing Health Technologies, Spring 2017 - (Graduate level)
- Human Computer Interaction, Fall 2016 - (Undergraduate level)

## **Teaching Assistant**

- Fall 2010      Human-Computer Interaction Methods with Professor Bonnie John & Matthew Kam (Graduate level)
- Spring 2010    Basic Interaction Design with Professor Eric Paulos (Graduate level)

## **INVITED TALKS**

- 2019 “Digital Media and Human Behavior: Digital Innovation and Human-Computer Interaction” at LASER (Leonardo Art Science Evening Rendezvous) NB, the Zimmerman Art Museum, New Jersey
- 2017 “Human-Computer Interaction for Machine Learning” at the Department of Computer Science, Rutgers University
- 2016 “Personal Sensing and Feedback devices towards Healthy and Environmentally Sustainable Behaviors” at Simon Fraser University, Vancouver, Canada
- 2016 “Personal Sensing and Feedback devices towards Healthy and Environmentally Sustainable Behaviors” at Yale University, Connecticut
- 2016 “Personal Sensing and Feedback devices towards Healthy and Environmentally Sustainable Behaviors” at University of Illinois Urbana Champaign, Illinois
- 2016 “Personal Sensing and Feedback devices towards Healthy and Environmentally Sustainable Behaviors” at University California of Santa Barbara, Santa Barbara
- 2016 “Personal Sensing and Feedback devices towards Healthy and Environmentally Sustainable Behaviors” at San Jose State University, San Jose
- 2015 “Personal Sensing and Feedback towards Healthy and Environmentally Sustainable Behaviors” at the Harvard School of Engineering and Applied Science, Harvard
- 2014 “Democratizing Mobile Technology in Support of Volunteer Activities in Data Collection” at the Rising Starts in EECS workshop
- 2014 “Sensing and Feedback for Healthy and Environmentally Sustainable Behaviors” at Berkeley Institute of Design Seminar, University of California, Berkeley
- 2013 “Citizen Science: A mobile tool for promoting citizen’s engagement in solving real-world problems” at HCI – Environment, Technology and Society By Jennifer Mankoff
- 2013 “Technology to empower citizen scientists” at The U.S. Environmental Protection Agency, Kentucky, USA
- 2010 “Creek Watch: pairing usefulness and usability for successful citizen science” at IBM Workshop for Frontiers of Cloud Computing

## **IN PRESS**

- June 2013 Water-technology.net Smarter water for crowded cities, <http://www.water-technology.net/features/featureibm-smarter-water-project-smart-cities>
- November 2010 Forbes IBM Launches iPhone App For Crowdsourcing Water Quality, <http://www.forbes.com/sites/kerryadolan/2010/11/04/ibm-launches-iphone-app-for-crowdsourcing-water-quality/>
- September 2010 Huffpost Tech Citizen Science: Check out IBM's Creek Watch iPhone App, [http://www.huffingtonpost.com/2010/09/24/citizen-science-check-out\\_n\\_738220.html](http://www.huffingtonpost.com/2010/09/24/citizen-science-check-out_n_738220.html)
- August 2010 ABC Local Scientists use iPhone app to collect creek data, [http://abclocal.go.com/kfsn/story?section=resources/lifestyle\\_community/green&id=7639420](http://abclocal.go.com/kfsn/story?section=resources/lifestyle_community/green&id=7639420)

## **ACADEMIC SERVICE**

### **Conference Organizing Committee**

- Publication Chair, The ACM Conference on Ubiquitous Computing (ubicomp), 2019
- Accessibility Chair, The ACM Conference on Human Factors in Computing Systems (CHI), 2019
- Student Volunteer Chair, The ACM Conference on Human Information Interaction and Retrieval (CHIIR), 2018
- Demo Chair, The ACM Conference on Ubiquitous Computing (UbiComp), 2017

### **Journal Review**

- Transaction on Computer Human Interaction
- Computer Supported Cooperative Work (CSCW)
- IEEE Pervasive Computing
- IEEE Internet Computing
- EchoPsychology
- Indoor and Built Environment
- Media Psychology

### **Conference Proceedings Review**

- The ACM Conference on Human Factors in Computing Systems (CHI)
- The ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)
- The ACM Conference on Ubiquitous Computing (UbiComp)
- The ACM Conference on Human-Computer Interaction with Mobile Devices and Services (Mobile HCI)



- The ACM conference on Designing Interactive Systems (DIS)
- The ACM Conference on Tangible, Embedded and Embodied Interaction (TEI)
- The ACM Conference on Creativity & Cognition (Creativity & Cognition)
- The International Conference on Designing Pleasurable Products and Interfaces (DPPI)
- The Asia Pacific Conference on Computer Human Interaction (APCHI)

**Student volunteer**

- The ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW) 2013
- The ACM Conference on Human Factors in Computing Systems (CHI) 2009