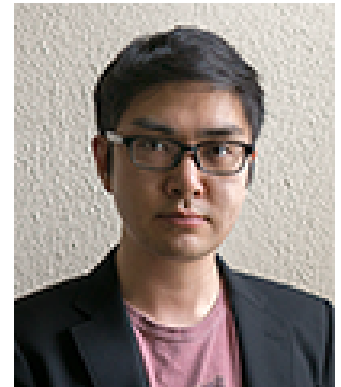


**HARA, Kotaro**

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**Education**

PhD, University of Maryland, United States of America, 2016  
Bachelor of Engineering, Osaka University, Japan, 2010

**Academic Appointments**

Assistant Professor of Computer Science, School of Computing and Information Systems, SMU, Apr 2021 - Present  
Assistant Professor of Information Systems, School of Computing and Information Systems, SMU, Nov 2017 - Mar 2021  
Postdoctoral Fellow, Carnegie Mellon University, United States of America, Jan 2016 - Jan 2017

**Awards and Honors**

CHI 2019 Best Paper Award, SIGCHI, 2019  
CHI 2018 Honourable Mention Award, ACM SIGCHI, 2018  
Best Paper Nomination, The Web for All conference Addressing information barriers 2017, 2017  
IBM PhD Fellowship, IBM, 2014  
The ACM Computing Reviews Best of Computing 2014, Association for Computing Machinery, 2014  
HCIL Conference Travel Award, HCIL 2013, 2013  
ASSETS 2013 Best Paper Award, ACM SIGACCESS, 2013  
The International Conference Student Support Award, UMD, 2013  
Jacob K. Goldhaber Travel Award, Jacob K. Goldhaber, 2013

**RESEARCH**

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**Research Interests**

My research interests cover Human-Computer Interaction and accessibility and assistive technologies, and crowdsourcing. My work focuses on design, development and deployment of smart systems that support people with special needs, such as people with disabilities and older adults. Beyond my immediate background in computer science, my research often incorporates technologies like machine learning, computer vision, and AI planning, as well as qualitative research of people and how they interact with technologies.

## Publications

### Journal Articles [Refereed]

Conversational localization: Indoor human localization through intelligent conversation, by SHESHADRI, Smitha; HARA, Kotaro. (2024). *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, 7 (4), 1-32. <https://doi.org/10.1145/3631404> (Published)

The gender wage gap in an online labor market: The cost of interruptions, by ADAMS-PRASSL, Abi; HARA, Kotaro; MILLAND, Kristy; CALLISON-BURCH, Chris

. (2023). *Review of Economics and Statistics*, 1-23. [https://doi.org/10.1162/rest\\_a\\_01282](https://doi.org/10.1162/rest_a_01282) (Advance Online)

Commanding and Re-Dictation: Developing Eyes-Free Voice-Based Interaction for Editing Dictated Text, by GHOSH, Debjyoti; LIU, Can; ZHAO, Shengdong; HARA, Kotaro. (2020). *ACM Transactions on Computer-Human Interaction*, 27 (4), 1-31. <https://doi.org/10.1145/3390889> (Published)

Improving public transit accessibility for blind riders by crowdsourcing bus stop landmark locations with Google street view: An extended analysis, by HARA, Kotaro; AZENKOT, Shiri; CAMPBELL, Megan; BENNETT, Cynthia L.; LE, Vicki; PANNELLA, Sean; MOORE, Robert; MINCKLER, Kelly; NG, Rochelle H.; FROEHLICH, Jon E.. (2015). *ACM Transactions on Accessible Computing*, 6 (2), 5-1-8. <https://doi.org/10.1145/2717513> (Published)

### Conference Proceedings

Exploring conversations between a practitioner and a person with dementia, by HARA, Kotaro; NATALIE, Rosiana; CHEONG, Wei Soon; GU, Jingjing; XU, Qianli. (2024.0). *ASSETS'24: Proceedings of the 26th International ACM SIGACCESS Conference on Computers and Accessibility, St. John's, October 28-30*, (pp. 1-5) New York: ACM. <https://doi.org/10.1145/3663548.3688523> (Published)

Audio Description Customization, by NATALIE, Rosiana; CHANG, Ruei-Che; SHESHADRI, Smitha; GUO, Anhong; HARA, Kotaro. (2024.0). *Proceedings of the 26th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2024) : Newfoundland and Labrador, Canada, October 28-30*, Newfoundland and Labrador, Canada: Association for Computing Machinery. <https://doi.org/10.1145/3663548.3675617> (Published)

How people prompt generative AI to create interactive VR scenes, by AGHEL MANESH, Setareh; ZHANG, Tianyi; ONISHI, Yuki; HARA, Kotaro; BATEMAN, Scott; LI, Jiannan; TANG, Anthony. (2024.0). *DIS '24: Proceedings of the 2024 ACM Designing Interactive Systems Conference, Copenhagen Denmark, July 1-5*, (pp. 2319-2340) New York: ACM. <https://doi.org/10.1145/3643834.3661547> (Published)

SwapVid: Integrating video viewing and document exploration with direct manipulation, by MURAKAMI, Taichi; FUJITA, Kazuyuki; HARA, Kotaro; TAKASHIMA, Kazuki; KITAMURA, Yoshifumi. (2024.0). *CHI '24: Proceedings of the CHI Conference on Human Factors in Computing Systems, Honolulu, May 11-16*, (pp. 1-13) New York: ACM. <https://doi.org/10.1145/3613904.3642515> (Published)

Navigating real-world challenges: A quadruped robot guiding system for visually impaired people in diverse environments, by CAI, Shaojun; RAM, Ashwin; GOU, Zhengtai; SHAIKH, Mohd Alqama Wasim; CHEN, Yu-An; WAN, Yingjia; HARA, Kotaro; ZHAO, Shengdong; HSU, David. (2024.0). *CHI '24: Proceedings of the CHI Conference on Human Factors in Computing Systems, Honolulu, May 11-16*, New York: ACM. (Published)

Beyond anthropomorphism: Unraveling the true priorities of chatbot usage in SMEs, by MAKANY, Tamas;

ROH, Sungjong; HARA, Kotaro; HUA, Jie Min; GOH, Si Ying Felicia; TEH, Yang Jie Wilson. (2023.0). *CUI '23: Proceedings of the 5th International Conference on Conversational User Interfaces, Eindhoven, July 19-21*, (pp. 1-5) New York: ACM. (Published)

Supporting novices author audio descriptions via automatic feedback, by NATALIE, Rosiana; TSENG, Joshua; KACORRI, Hernisa; HARA, Kotaro. (2023.0). *CHI '23: Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems, Hamburg, Germany, April 23-28*, (pp. 1-18) New York: ACM. <https://doi.org/10.1145/3544548.3581023> (Published)

Investigating accessibility challenges and opportunities for users with low vision disabilities in customer-to-customer (C2C) marketplaces, by RYSKELDIEV, Bektur; HARA, Kotaro; KOBAYASHI, Mariko; KUSANO, Koki. (2022.0). *ASSETS '22: Proceedings of the 24th International ACM SIGACCESS Conference on Computers and Accessibility, Athens, Greece, October 23-26*, (pp. 1-4) New York: ACM. <https://doi.org/10.1145/3517428.3550390> (Published)

Understanding crowdsourcing requesters' wage setting behaviors, by HARA, Kotaro; TANAKA, Yudai. (2022.0). *CHI EA '22: Extended Abstracts of the 2022 CHI Conference on Human Factors in Computing Systems, New Orleans, April 29 - May 5*, (pp. 1-6) New Orleans, LA, USA: ACM. <https://doi.org/10.1145/3491101.3519660> (Published)

Feasibility studies in indoor localization through intelligent conversation, by SHESHADRI, Smitha; CHENG, Linus; HARA, Kotaro. (2022.0). *CHI EA '22: Extended Abstracts of the 2022 CHI Conference on Human Factors in Computing Systems, New Orleans, April 29 - May 5*, (pp. 1-6) New Orleans, LA, USA: ACM. <https://doi.org/10.1145/3491101.3519617> (Published)

Uncovering patterns in reviewers' feedback to scene description authors, by NATALIE, Rosiana; LOH, Jolene Kar Inn; TAN, Huei Suen, TSENG, Joshua Shi Hao, KACORRI, Hernisa; HARA, Kotaro. (2021.0). *ASSETS '21: Proceedings of the 23rd International ACM SIGACCESS Conference on Computers and Accessibility, Virtual Conference, October 18-22*, (pp. 1-4) New York: ACM. <https://doi.org/10.1145/3441852.3476550> (Published)

Uncovering patterns in reviewers' feedback to scene description authors, by NATALIE, Rosiana; LOH, Jolene K. I.; TAN, Huei Suen; TSENG, Joshua; KACORRI, Hernisa; HARA, Kotaro. (2021.0). *ASSETS '21: Proceedings of the 23rd International ACM SIGACCESS Conference on Computers and Accessibility, Virtual, October 18-22*, (pp. 1-4) New York: ACM. <https://doi.org/10.1145/3441852.3476550> (Published)

Visionary Caption: Improving the accessibility of presentation slides through highlighting visualization, by YIP, Carmen; CHONG, Jie Mi; KWEK, Sin Yee; WANG, Yong; HARA, Kotaro. (2021.0). *ASSETS '21: Proceedings of the 23rd International ACM SIGACCESS Conference on Computers and Accessibility, Virtual Conference, October 18-21*, (pp. 1-4) New York: ACM. <https://doi.org/10.1145/3441852.3476539> (Published)

The efficacy of collaborative authoring of video scene descriptions, by NATALIE, Rosiana; LOH, Jolene; TAN, Huei Suen; TSENG, Joshua; CHAN, Ian Luke Yi-Ren; JARJUE, Ebrima H.; KACORRI, Hernisa; HARA, Kotaro. (2021.0). *ASSETS '21: Proceedings of the 23rd International ACM SIGACCESS Conference on Computers and Accessibility, Virtual Conference, October 18-21*, (pp. 1-15) New York: ACM. <https://doi.org/10.1145/3441852.3471201> (Published)

ViScene: A collaborative authoring tool for scene descriptions in videos, by NATALIE, Rosiana; JARJUE, Ebrima; KACORRI, Hernisa; HARA, Kotaro. (2020.0). *ASSETS '20: Proceedings of the 22nd International ACM SIGACCESS Conference on Computers and Accessibility: Virtual, October 26-28*, (pp. 1-5) New York: ACM. <https://doi.org/10.1145/3373625.3418030> (Published)

LiveSnippets: Voice-based live authoring of multimedia articles about experiences, by KIM, Hyeongcheo; ZHAO, Shengdong; LIU, Can; HARA, Kotaro. (2020.0). *MobileHCI '20: Proceedings of the 22nd International Conference on Human-Computer Interaction with Mobile Devices and Services: Expanding the Horizon of Mobile Interaction, Virtual, Germany, October 5-9*, (pp. 1-11) New York: ACM. <https://doi.org/10.1145/3379503.3403556> (Published)

Techniques to visualize occluded graph elements for 2.5D map editing, by FUJITA, Kazuyuki; HAYASHI, Daigo; HARA, Kotaro; TAKASHIMA, Kazuki; KITAMURA, Yoshifumi. (2020.0). *CHI EA '20: Proceedings of Conference on Human Factors in Computing Systems, Virtual, Honolulu, April 25-30*, (pp. 1-9) New York: ACM. <https://doi.org/10.1145/3334480.3382987> (Published)

Worker demographics and earnings on amazon mechanical turk: An exploratory analysis, by HARA, Kotaro; MILLAND, Kristy; HANRAHAN, Benjamin V.; CALLISON-BURCH, Chris; ADAMS, Abigail; SAVAGE,

Saiph; BIGHAM, Jeffrey P.. (2019.0). *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems, CHI EA 2019, Glasgow, United Kingdom, 2019 May 4-9*, (pp. 1-6) Glasgow, United Kingdom: <https://doi.org/10.1145/3290607.3312970> (Published)

Project Sidewalk: A Web-based crowdsourcing tool for collecting sidewalk accessibility data at scale, by SAHA, Manaswi; SAUGSTAD, Michael; MADDALI, Hanuma; ZENG, Aileen; HOLLAND, Ryan; BOWER, Steven; DASH, Aditya; CHEN, Sage; Li, Anthony; HARA, Kotaro; FROEHLICH, Jon. (2019.0). *CHI '19: Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems, Glasgow, Scotland, May 4-9*, (pp. 62:1-14) New York: ACM. <https://doi.org/10.1145/3290605.3300292> (Published)

Striving to earn more: A survey of work strategies and tool use among crowd workers, by KAPLAN, Toni; SAITO, Susumu; HARA, Kotaro; BIGHAM, Jeffrey P.. (2018.0). *Proceedings of the 6th AAAI Conference on Human Computation and Crowdsourcing HCOMP 2018: Zürich, Switzerland, July 5-8*, (pp. 70-78) Palo Alto, CA: AAAI Press. (Published)

A data-driven analysis of workers' earnings on Amazon Mechanical Turk, by HARA, Kotaro; ADAMS, Abigail; MILLAND, Kristy; SAVAGE, Saiph; CALLISON-BURCH, Chris; BIGHAM, Jeffrey P.. (2018.0). *CHI '18: Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems, Montreal, April 21-26*, (pp. 449:1-14) New York: ACM. <https://doi.org/10.1145/3173574.3174023> (Published)

Vocal programming for people with upper-body motor impairments, by ROSENBLATT, Lucas; CARRINGTON, Patrick; HARA, Kotaro; BIGHAM, Jeffrey P.. (2018.0). *15th Web for All Conference W4A 2018: April 23-25, Proceedings*, (pp. 1-10) New York: ACM. <https://doi.org/10.1145/3192714.3192821> (Published)

Introducing people with ASD to crowd work, by HARA, Kotaro; BIGHAM, Jeffrey P.. (2017.0). *ASSETS '17: Proceedings of the 19th International ACM SIGACCESS Conference on Computers and Accessibility, Baltimore, MA, October 20 - November 01*, (pp. 42-51) New York: ACM. <https://doi.org/10.1145/3132525.3132544> (Published)

A pilot deployment of an online tool for large-scale virtual auditing of urban accessibility, by SAHA, Manaswi; HARA, Kotaro; BEHNEZHAD, Soheil; LI, Anthony; SAUGSTAD, Michael; MADDALI, Hanuma; CHEN, Sage; FROEHLICH, Jon. (2017.0). *ASSETS '17 Proceedings of the 19th International ACM SIGACCESS Conference on Computers and Accessibility, Baltimore, Maryland, USA, 2017, October 20 - November 01*, (pp. 305-306) Baltimore, Maryland, USA: ACM New York. <https://doi.org/10.1145/3132525.3134775> (Published)

The crowd work accessibility problem, by SWAMINATHAN, Saiganesh; HARA, Kotaro; BIGHAM, Jeffrey P.. (2017.0). *W4A '17 Proceedings of the 14th Web for All Conference on The Future of Accessible Work, Perth, Western Australia, Australia, 2017, April 02 - 04*, Perth, Australia: ACM New York. <https://doi.org/10.1145/3058555.3058569> (Published)

The design of assistive location-based technologies for people with ambulatory disabilities: A formative study, by HARA, Kotaro; CHEN, Christine; FROEHLICH, Jon E.. (2016.0). *CHI '16: Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems, San Jose, CA, May 7-12*, (pp. 1757-1768) New York: ACM. <https://doi.org/10.1145/2858036.2858315> (Published)

FluTCHA: Using fluency to distinguish humans from computers, by HARA, Kotaro; HAJIAGHAYI, Mohammad Taghi; BENDERSON, Benjamin B.. (2015.0). *WWW '15 Companion Proceedings of the 24th International Conference on World Wide Web, Florence, Italy, 18-22 May 2015*, (pp. 43-44) Florence, Italy: <https://doi.org/10.1145/2740908.2742759> (Published)

Effect of machine translation in interlingual conversation: Lessons from a formative study, by HARA, Kotaro; IQBAL, Shamsi T.. (2015.0). *CHI '15: Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems, Seoul, April 18-23*, (pp. 3473-3482) New York: ACM. <https://doi.org/10.1145/2702123.2702407> (Published)

Tohme: Detecting curb ramps in Google street view using crowdsourcing, computer vision, and machine learning, by HARA, Kotaro; SUN, Jin; MOORE, Robert; JACOBS, David; FROEHLICH, Jon E.. (2014.0). *UIST '14 Proceedings of the 27th annual ACM symposium on User interface software and technology, Honolulu, Hawaii, USA, 2014, October 05 - 08*, (pp. 189-204) Honolulu, Hawaii, USA: ACM New York. <https://doi.org/10.1145/2642918.2647403> (Published)

Combining crowdsourcing and Google street view to identify street-level accessibility problems, by HARA, Kotaro; LE, Victoria; FROEHLICH, Jon. (2013.0). *CHI '13 Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, Paris, France, 2013, April 27 - May 02*, (pp. 631-640) Paris, France: ACM New York. <https://doi.org/10.1145/2470654.2470744> (Published)

A feasibility study of crowdsourcing and Google street view to determine sidewalk accessibility, by HARA, Kotaro; LE, Victoria; FROEHLICH, Jon. (2012.0). *ASSETS'12: Proceedings of the 14th International ACM SIGACCESS Conference on Computers and Accessibility, Boulder, CO, October 22-24*, (pp. 273-274) New York: ACM. <https://doi.org/10.1145/2384916.2384989> (Published)

### Conference Papers

Improving public transit accessibility for blind riders by crowdsourcing bus stop landmark locations with Google street view, by HARA, Kotaro; AZENKOT, Shiri; CAMPBELL, Megan; BENNETT, Cynthia L.; LE, Vicki; PANNELLA, Sean; MOORE, Robert; MINCKLER, Kelly; NG, Rochelle H.; FROEHLICH, Jon E.. (2013.0). *Proceedings of ASSETS 2013*, Bellevue, Washington, USA. <https://doi.org/10.1145/2717513> (Published)

### Edited Conference Proceedings

*Characterizing and visualizing physical world accessibility at scale using crowdsourcing, computer vision, and machine learning*, edited by HARA, Kotaro; FROEHLICH, Jon E.. (01/01/2015). Portugal: <https://doi.org/10.1145/2850440.2850442> (Presented)

### Magazine Articles

Grand challenges in accessible maps, by FROEHLICH, Jon E.; BROCK, Anke M.; CASPI, Anat; GUERREIRO, Joao; HARA, Kotaro; KIRKHAM, Reuben; SCHONING, Johannes; TANNERT, Benjamin. (2019, February). *Interactions: Studies in Communication and Culture*, 78-81. (Published)

### **Other Outputs and Contributions**

#### Posters

Low effort crowdsourcing: Leveraging peripheral attention for crowd work, by RAJAN, Vaish; ORGANISCIAK, Peter; HARA, Kotaro; BIGHAM, Jeffrey P.; ZHANG, Haoqi. (01 Jan 2015). *Poster Proceedings of HCOMP 2014*, (Published)

An initial study of automatic curb ramp detection with crowdsourced verification using Google street view images, by HARA, Kotaro; SUN, Jin; CHAZAN, Jonah; JACOBS, David; FROEHLICH, Jin. (01 Jan 2013). *Poster Proceedings of HCOMP 2013*, (Published)

### **Research Grants**

#### Singapore Management University

Mobile-friendly Data Visualization, Academic Research Fund (AcRF) Tier 2, Ministry of Education (MOE) , PI (Project Level): WANG Yong , Co-PI (Project Level): HARA, Kotaro, 2023, S\$632,684

Improving Fairness and Accessibility of Crowd Work, Academic Research Fund (AcRF) Tier 2, Ministry of Education (MOE) , PI (Project Level): HARA, Kotaro , Co-PI (Project Level): Rajesh Krishna BALAN, 2021, S\$579,384

Business communication practices with chatbots for SMEs in Singapore, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): Tamas MAKANY , Co-PI (Project Level): Sungjong ROH, 2022, S\$39,960

Multi-modal, Real-time Comprehension for Interactive Intelligent Human-Agent Interaction, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): Jing JIANG , Co-PI (Project Level): Archan MISRA, HARA, Kotaro, 2019, S\$499,750

The Design of a Requester Toolkit to Foster an Understanding of Crowd Work, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): HARA, Kotaro, 2018, S\$64,500

Combining Crowdsourcing and Machine Learning to Map Geographical Information, SMU Internal Grant,

Ministry of Education (MOE) Tier 1 , PI (Project Level): HARA, Kotaro, 2017, S\$38,750

### Other Institutions

Transition from Living Analytics Research Centre to Social Urban Observatory, Strategic Capabilities Research Centres Funding Initiative, NRF PI (Project Level): LIM Ee Peng, Co-PI (Project Level): ZHENG Baihua, Archan MISRA, Jing JIANG, Wei GAO, SUN Qianru, HARA, Kotaro, Palakorn ACHANANUPARP, 2021, SGD2,687,280

Transition from Living Analytics Research Centre to Social Urban Observatory, NRF, National Research Foundation - Strategic Capabilities Research Centres Funding Initiative , PI (Programme Level): LIM Ee Peng, PI (Project Level): LIM Ee Peng, Archan MISRA, Jing JIANG, ZHENG Baihua, Co-PI (Project Level): HARA, Kotaro, SUN Qianru, Palakorn ACHANANUPARP, Wei GAO, 2021, SGD2,687,280

## TEACHING

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### Courses Taught

#### Singapore Management University

Undergraduate Programmes :

Interaction Design and Prototyping

Postgraduate Research Programmes :

Computational Interaction

Empirical Research Project 1

Empirical Research Project 2

Empirical Research Project 3

Empirical Research Project 4

### Presentation and Talks

#### Presentations

Characterizing and Visualizing Physical World Accessibility at Scale Using Crowdsourcing, Computer Vision, and Machine Learning, (01 Jan 2015). *SIGACCESS 2015*,

Scalable Methods to Collect and Visualize Sidewalk Accessibility Data for People with Mobility Impairments, (01 Oct 2014). *27th ACM User Interface Software and Technology Symposium (UIST 2014)*,

Scalable Methods to Collect and Visualize Sidewalk Accessibility Data for People with Mobility Impairments, (01 Oct 2014). *ASSETS 2014*,

Exploring Early Solutions for Automatically Identifying Inaccessible Sidewalks in the Physical World Using Google Street View, (01 Aug 2013). *Human Computer Interaction Consortium 2013*,

## EXTERNAL SERVICE – PROFESSIONAL

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Associate Chair, The ACM CHI Conference on Human Factors in Computing Systems, 2018 - Present

Student Research Competition Chair, The 20th International ACM SIGACCESS Conference on Computers and Accessibility, 2018 - Present

Program Committee Member, Program Committee, The 20th International ACM SIGACCESS Conference on Computers and Accessibility, 2018 - Present

Local Arrangement Chair, ACM UbiComp/ISWC 2018, 2018 - Present

Program Committee Member, Program Committee, The 19th International ACM SIGACCESS Conference on Computers and Accessibility, 2017 - Present

Committee Member, The 30th ACM User Interface Software and Technology Symposium (UIST 2017), 2017

Member, ACM SIGACCESS (ASSETS), 2015 - Present

Member, ACM Computer Supported Cooperative Work (CSCW), 2014 - 2017

Member, ACM Human Factors in Computing Systems (CHI), 2013 - Present