

Anhong Guo Curriculum Vitæ

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Academic Positions

- 01/2021 – **University of Michigan, Ann Arbor**
Assistant Professor, Computer Science and Engineering (EECS); School of Information (by courtesy)
- 09/2020 – **Carnegie Mellon University**
12/2020 Postdoctoral Fellow, Human-Computer Interaction Institute, School of Computer Science

Education




- 08/2014 – **Carnegie Mellon University**
08/2020 Ph.D. in Human-Computer Interaction
M.S. in Human-Computer Interaction
Human-Computer Interaction Institute, School of Computer Science
Thesis: Human-AI Systems for Visual Information Access
Advisor: Jeffrey P. Bigham; Committee: Chris Harrison, Jodi Forlizzi, and Meredith Ringel Morris
- 08/2012 – **Georgia Institute of Technology**
05/2014 M.S. in Human-Computer Interaction
School of Interactive Computing
Thesis: BeyondTouch: Extending the Input Language with Built-in Sensors on Commodity Smartphones
Advisor: Gregory Abowd
- 09/2008 – **Beijing University of Posts and Telecommunications (BUPT)**
06/2012 B.Eng. in Electronic Information Engineering
School of Information and Communication Engineering



Awards and Honors

- 2022 **Google Research Scholar Award**
- 2022 **CHI 2022 Best Paper Honorable Mention [C.27]**
- 2021 **CHI 2021 Best Paper Honorable Mention [C.23]**
- 2021 **Forbes' Top 30 Scientists Under 30 ('30 Under 30')**
- 2020 **ASSETS 2020 Best Paper Nominee [C.21]**
- 2019 **ASSETS 2019 Best Artifact Award [C.17]**
- 2018 **CMU Swartz Innovation Fellowship**
- 2018 **McGinnis Venture Capital Award**
- 2017 **Snap Inc. Research Fellowship**
- 2017 **W4A 2017 Paciello Group Accessibility Challenge Delegates Award [A.5]**
- 2016 **Qualcomm Innovation Fellowship Finalist**
- 2016 **MobileHCI 2016 Best Paper Honorable Mention [C.8]**
- 2014 **ISWC 2014 Best Paper Honorable Mention [C.1]**

Peer-Reviewed Conference and Journal Papers

- [C.34] Chen Liang, Yasha Iravantchi, Thomas Krolkowski, Ruijie Geng, Alanson P. Sample, **Anhong Guo**. BrushLens: Hardware Interaction Proxies for Accessible Touchscreen Interface Actuation. In *Proceedings of the 36th Annual ACM Symposium on User Interface Software & Technology (UIST 2023)*. San Francisco, CA. 2023. [Acceptance Rate: 25.1%]
- [C.33] Jaylin Herskovitz, Andi Xu, Rahaf Alharbi, **Anhong Guo**. Hacking, Switching, Combining: Understanding and Supporting DIY Assistive Technology Design by Blind People. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2023)*. Hamburg, Germany. [Acceptance Rate: 28.4%]
- [C.32] Lei Zhang, Ashutosh Agrawal, Steve Oney, **Anhong Guo**. VRGit: A Version Control System for Collaborative Content Creation in Virtual Reality. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2023)*. Hamburg, Germany. [Acceptance Rate: 28.4%]
- [C.31] Stephan J. Lemmer, **Anhong Guo**, Jason J. Corso. Human-Centered Deferred Inference: Measuring User Interactions and Setting Deferral Criteria for Human-AI Teams. In *Proceedings of the 28th International Conference on Intelligent User Interfaces (IUI 2023)*. Sydney, Australia. 2023. [Acceptance Rate: 24.1%]
- [C.30] Ruei-Che Chang, Chao-Hsien Ting, Chia-Sheng Hung, Wan-Chen Lee, Liang-Jin Chen, Yu-Tzu Chao, Bing-Yu Chen, **Anhong Guo**. OmniScribe: Authoring Immersive Audio Descriptions for 360° Videos. In *Proceedings of the 35th Annual ACM Symposium on User Interface Software & Technology (UIST 2022)*. Bend, OR. 2022. [Acceptance Rate: 26.3%]
- [C.29] Jaylin Herskovitz, Yi Fei Cheng, **Anhong Guo**, Alanson Sample, Michael Nebeling. XSpace: An Augmented Reality Toolkit for Enabling Spatially-Aware Distributed Collaboration. In *Proceedings of the ACM on Human-Computer Interaction (ISS 2022)*. Wellington, New Zealand. 2022.
- [C.28] Chen Liang, **Anhong Guo**, Jeeun Kim. CustomizAR: Facilitating Interactive Exploration and Measurement of 3D Customizable Adaptive Designs. In *Proceedings of the 2022 ACM Conference on Designing Interactive Systems (DIS 2022)*. Virtual Event, 2022. [Acceptance Rate: 21.5%]
- [C.27]  Cheuk Yin Phipson Lee*, Zhuohao Zhang*, Jaylin Herskovitz, JooYoung Seo, **Anhong Guo**. CollabAlly: Accessible Collaboration Awareness in Document Editing. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2022)*. New Orleans, LA. [Acceptance Rate: 24.7%]
Best Paper Honorable Mention
- [C.26] Jaewook Lee, Jaylin Herskovitz, Yi-Hao Peng, **Anhong Guo**. ImageExplorer: Multi-Layered Touch Exploration to Encourage Skepticism Towards Imperfect AI-Generated Image Captions. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2022)*. New Orleans, LA. [Acceptance Rate: 24.7%]
- [C.25] Junhan Kong, Dena Sabha, Jeffrey P. Bigham, Amy Pavel, **Anhong Guo**. TutorialLens: Authoring Interactive Augmented Reality Tutorials Through Narration and Demonstration. In *Proceedings of the Symposium on Spatial User Interaction (SUI 2021)*. Virtual Event, 2021.
- [C.24] Solon Barocas, **Anhong Guo**, Ece Kamar, Jacquelyn Kroner, Meredith Ringel Morris, Jennifer Wortman Vaughan, Duncan Wadsworth, Hanna Wallach. Designing Disaggregated Evaluations of AI Systems: Choices, Considerations, and Tradeoffs. In *Proceedings of the Fourth AAAI/ACM Conference on AI, Ethics, and Society (AIES 2021)*. Virtual Event, 2021. [Acceptance Rate: 37.3%]
- [C.23]  Cynthia L. Bennett, Cole Gleason, Morgan Klaus Scheuerman, Jeffrey P. Bigham, **Anhong Guo**, Alexandra To. “It’s Complicated”: Negotiating Accessibility and (Mis)Representation in Image Descriptions of Race, Gender, and Disability. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2021)*. Virtual Event, Japan. 2021. [Acceptance Rate: 26.3%]
Best Paper Honorable Mention
- [C.22] Jaylin Herskovitz, Jason Wu, Samuel White, Amy Pavel, Gabriel Reyes, **Anhong Guo**, Jeffrey P. Bigham. Making Mobile Augmented Reality Applications Accessible. In *Proceedings of the 22nd International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2020)*. Virtual Event, Greece. 2020. [Acceptance Rate: 28%]

- [C.21]  Shaun Kane, **Anhong Guo**, Meredith Ringel Morris. Sense and Accessibility: Understanding People with Physical Disabilities' Experiences with Sensing Systems. In *Proceedings of the 22nd International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2020)*. Virtual Event, Greece. 2020. [Acceptance Rate: 28%]
Best Paper Nominee
- [C.20] Cole Gleason*, Stephanie Valencia*, Lynn Kirabo, Jason Wu, **Anhong Guo**, Elizabeth Jeanne Carter, Jeffrey P. Bigham, Cynthia L. Bennett⁺, Amy Pavel⁺. Disability and the COVID-19 Pandemic: Using Social Media to Understand Accessibility during Rapid Societal Transition. In *Proceedings of the 22nd International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2020)*. Virtual Event, Greece. 2020. [Acceptance Rate: 28%]
- [C.19] **Anhong Guo**, Junhan Kong, Michael Rivera, Frank F. Xu, Jeffrey P. Bigham. StateLens: A Reverse Engineering Solution for Making Existing Dynamic Touchscreens Accessible. In *Proceedings of the 32nd Annual ACM Symposium on User Interface Software & Technology (UIST 2019)*. New Orleans, LA. 2019. [Acceptance Rate: 24.4%]
- [C.18] **Anhong Guo**, Ilter Canberk, Hannah Murphy, Andrés Monroy-Hernández, Rajan Vaish. Blocks: Collaborative and Persistent Augmented Reality Experiences. In *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (UbiComp 2019)* 3.3: 83. London, United Kingdom. 2019.
- [C.17]  Sujeath Pareddy, **Anhong Guo**, Jeffrey P. Bigham. X-Ray: Screenshot Accessibility via Embedded Metadata. In *Proceedings of the 21st International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2019)*. Pittsburgh, PA. 2019. [Acceptance Rate: 26%]
Best Artifact Award
- [C.16] Danna Gurari, Qing Li, Chi Lin, Yinan Zhao, **Anhong Guo**, Abigale Stangl, Jeffrey P. Bigham. VizWiz-Priv: A Dataset for Recognizing the Presence and Purpose of Private Visual Information in Images Taken by Blind People. In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2019)*. Long Beach, CA. 2019. [Acceptance Rate: 25.2%]
- [C.15] Runchang Kang, **Anhong Guo**, Gierad Laput, Yang Li, Xiang 'Anthony' Chen. Minuet: Multimodal Interaction with an Internet of Things. In *Proceedings of the Symposium on Spatial User Interaction (SUI 2019)*. New Orleans, LA. 2019.
- [C.14] **Anhong Guo**, Anuraag Jain, Shomiron Ghose, Gierad Laput, Chris Harrison, Jeffrey P. Bigham. Crowd-AI Camera Sensing in the Real World. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (UbiComp 2018)* 2.3: 111. Singapore. 2018.
- [C.13] **Anhong Guo**, Saige McVea, Xu Wang, Patrick Clary, Ken Goldman, Yang Li, Yu Zhong, Jeffrey Bigham. Investigating Cursor-based Interactions to Support Non-Visual Exploration in the Real World. In *Proceedings of the 20th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2018)*. Galway, Ireland. 2018. [Acceptance Rate: 26%]
- [C.12]  Danna Gurari, Qing Li, Abigale Stangl, **Anhong Guo**, Chi Lin, Kristen Grauman, Jiebo Luo, Jeffrey P. Bigham. VizWiz Grand Challenge: Answering Visual Questions from Blind People. In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2018)*. Salt Lake City, Utah. 2018. [Acceptance Rate: 29%]
Spotlight Presentation (Top 9% of 3309 submissions)
- [C.11] **Anhong Guo**, Jeeun Kim, Xiang 'Anthony' Chen, Tom Yeh, Scott Hudson, Jennifer Mankoff, Jeffrey P. Bigham. Facade: Auto-generating Tactile Interfaces to Appliances. In *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2017)*. Denver, CO. 2017. [Acceptance Rate: 25%]
- [C.10] Jeeun Kim, **Anhong Guo**, Tom Yeh, Scott Hudson, Jennifer Mankoff. Understanding Uncertainty in Measurement and Accommodating its Impact in 3D Modeling and Printing. In *Proceedings of the 2017 ACM Conference on Designing Interactive Systems (DIS 2017)*. Edinburgh, United Kingdom. 2017. [Acceptance Rate: 22%]
- [C.9] **Anhong Guo**, Xiang 'Anthony' Chen, Haoran Qi, Samuel White, Suman Ghosh, Chieko Asakawa, Jeffrey P. Bigham. VizLens: A Robust and Interactive Screen Reader for Interfaces in the Real World. In *Proceedings of the 29th Annual ACM Symposium on User Interface Software & Technology (UIST 2016)*. Tokyo, Japan. 2016. [Acceptance Rate: 20.6%]

- [C.8]  **Anhong Guo**, Tim Paek. Exploring Tilt for No-Touch, Wrist-Only Interactions on Smartwatches. In *Proceedings of the 14th international conference on Human-computer interaction with mobile devices and services (MobileHCI 2016)*. Florence, Italy. 2016. [Acceptance Rate: 24%]
Best Paper Honorable Mention
- [C.7] Michael Nebeling, Alexandra To, **Anhong Guo**, Adrian de Freitas, Jaime Teevan, Steven Dow, Jeffrey P. Bigham. WearWrite: Crowd-Assisted Writing from Smartwatches. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI 2016)*. San Jose, CA. 2016. [Acceptance Rate: 23.4%]
- [C.6] Xiaolong Wu, Malcolm Haynes, **Anhong Guo**, Thad Starner. A Comparison of Order Picking Methods Augmented with Weight Checking Error Detection. In *Proceedings of the 2016 ACM International Symposium on Wearable Computers (ISWC 2016)*. Heidelberg, Germany. 2016. [Acceptance Rate: 19%]
- [C.5] Cheng Zhang, **Anhong Guo**, Dingtian Zhang, Yang Li, Caleb Southern, Rosa Arriaga, Gregory Abowd. Beyond the Touchscreen: An Exploration of Extending Interactions on Commodity Smartphones. *ACM Transactions on Interactive Intelligent Systems (TiiS)*. 6.2 (2016).
- [C.4] **Anhong Guo**, Robert Xiao, Chris Harrison. CapAuth: Identifying and Differentiating User Handprints on Commodity Capacitive Touchscreens. In *Proceedings of the 10th ACM International Conference on Interactive Tabletops and Surfaces (ITS 2015)*. Madeira, Portugal. 2015. [Acceptance Rate: 24%]
- [C.3] Cheng Zhang, **Anhong Guo**, Dingtian Zhang, Caleb Southern, Rosa Arriaga, Gregory Abowd. Beyond-Touch: Extending the Input Language with Built-in Sensors on Commodity Smartphones. In *Proceedings of the 20th International Conference on Intelligent User Interfaces (IUI 2015)*. Atlanta, GA. 2015. [Acceptance Rate: 23%]
- [C.2] Xiaolong Wu, Malcolm Haynes, Yixin Zhang, Ziyi Jiang, Zhengyang Shen, **Anhong Guo**, Thad Starner, Scott Gilliland. Comparing Order Picking Assisted by Head-up Display Versus Pick-by-light with Explicit Pick Confirmation. In *Proceedings of the 2015 ACM International Symposium on Wearable Computers (ISWC 2015)*. Osaka, Japan. 2015. [Acceptance Rate: 25%]
- [C.1]  **Anhong Guo**, Shashank Raghu, Xuwen Xie, Saad Ismail, Xiaohui Luo, Joseph Simoneau, Scott Gilliland, Hannes Baumann, Caleb Southern, Thad Starner. A Comparison of Order Picking Assisted by Head-up Display (HUD), Cart-mounted Display (CMD), Light, and Paper Pick List. In *Proceedings of the 2014 ACM International Symposium on Wearable Computers (ISWC 2014)*. Seattle, WA. 2014. [Acceptance Rate: 25%]
Best Paper Honorable Mention

Posters, Demos, Works in Progress, and Extended Abstracts

- [A.11] Gregory Croisdale, John Joon Young Chung, Emily Huang, Gage Birchmeier, Xu Wang, **Anhong Guo**. DeckFlow: A Card Game Interface for Exploring Generative Model Flows. In *Adjunct Proceedings of the 36th Annual ACM Symposium on User Interface Software and Technology (UIST Demo 2023)*. San Francisco, California. 2023.
- [A.10] Rwei-Che Chang, Chia-Sheng Hung, Dhruv Jain, **Anhong Guo**. SoundBlender: Manipulating Sounds for Accessible Mixed-Reality Awareness. In *Adjunct Proceedings of the 36th Annual ACM Symposium on User Interface Software and Technology (UIST Demo 2023)*. San Francisco, California. 2023.
- [A.9] Andi Xu*, Mahdi Qazwini*, Chen Liang, **Anhong Guo**. Deploying VizLens: Characterizing User Needs, Preferences, and Challenges on Physical Interfaces Usage in the Wild. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS Demo 2023)*. New York, NY, 2023.
- [A.8] Cheuk Yin Phipson Lee*, Zhuohao Zhang*, Jaylin Herskovitz, JooYoung Seo, **Anhong Guo**. CollabAlly: Accessible Collaboration Awareness in Document Editing. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS Demo 2021)*. Virtual Event, 2021.
- [A.7] Jaewook Lee, Yi-Hao Peng, Jaylin Herskovitz, **Anhong Guo**. Image Explorer: Multi-Layered Touch Exploration to Make Images Accessible. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS Demo 2021)*. Virtual Event, 2021.
- [A.6] Junhan Kong, **Anhong Guo**, Jeffrey P. Bigham. Supporting Older Adults in Using Complex User Interfaces with Augmented Reality. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS Demo 2019)*. Pittsburgh, PA. 2019.

- [A.5] **Anhong Guo**, Jeffrey P. Bigham. Making Real-World Interfaces Accessible Through Crowdsourcing, Computer Vision, and Fabrication. In *Proceedings of the 14th Web for All Conference (W4A 2017)*. Perth, Australia. 2016.
 **TPG Web Accessibility Challenge Delegates Award**
- [A.4] **Anhong Guo**, Jeeun Kim, Xiang ‘Anthony’ Chen, Tom Yeh, Scott Hudson, Jennifer Mankoff, Jeffrey P. Bigham. Facade: Auto-generating Tactile Interfaces to Appliances. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS Poster 2016)*. Reno, NV. 2016.
- [A.3] Cole Gleason, **Anhong Guo**, Gierad Laput, Kris Kitani, Jeffrey P. Bigham. VizMap: Accessible Visual Information Through Crowdsourced Map Reconstruction. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS Poster 2016)*. Reno, NV. 2016.
- [A.2] Michael Nebeling, **Anhong Guo**, Alexandra To, Steven Dow, Jaime Teevan, Jeffrey P. Bigham. WearWrite: Orchestrating the Crowd to Complete Complex Tasks from Wearables. In *Proceedings of the Symposium on User Interface Software and Technology (UIST Demo 2015)*. Charlotte, NC. Seoul, Korea. 2015.
- [A.1] **Anhong Guo**, Xiang ‘Anthony’ Chen, Jeffrey P. Bigham. ApplianceReader: A Wearable, Crowdsourced, Vision-based System to Make Appliances Accessible. In *Proceedings of the 33rd Annual ACM Conference Extended Abstracts on Human Factors in Computing Systems (CHI WIP 2015)*. Seoul, Korea. 2015.

Magazine Articles

- [M.2] **Anhong Guo**, Jeffrey P. Bigham. Making Everyday Interfaces Accessible: Tactile Overlays by and for Blind People. *IEEE Pervasive Computing* 17.2 (2018).
- [M.1] **Anhong Guo**, Xiaolong Wu, Zhengyang Shen, Thad Starner, Hannes Baumann, Scott Gilliland. Order picking with head-up displays. *IEEE Computer* 6 (2015).

Workshop, Symposia, and Consortia Papers

- [W.9] **Anhong Guo**, Ece Kamar, Jennifer Wortman Vaughan, Hanna Wallach, Meredith Ringel Morris. Toward Fairness in AI for People with Disabilities: A Research Roadmap. In *ACM ASSETS 2019 Workshop on AI Fairness for People with Disabilities (ASSETS 2019 AI Fairness Workshop)*. Pittsburgh, PA. 2019.
- [W.8] Danna Gurari, Qing Li, Chi Lin, Yinan Zhao, **Anhong Guo**, Abigale Stangl, Jeffrey P. Bigham. VizWiz-Priv: A Dataset for Recognizing the Presence and Purpose of Private Visual Information in Images Taken by Blind People. *Workshop on Fairness Accountability Transparency and Ethics in Computer Vision at CVPR 2019 (FATE-CV 2019 Workshop)*. Long Beach, CA. 2019.
- [W.7] Danna Gurari, Qing Li, Chi Lin, Yinan Zhao, **Anhong Guo**, Abigale Stangl, Jeffrey P. Bigham. VizWiz-Priv: A Dataset for Recognizing the Presence and Purpose of Private Visual Information in Images Taken by Blind People. *Workshop on language and vision at CVPR 2019 (Language and Vision 2019 Workshop)*. Long Beach, CA. 2019.
- [W.6] Danna Gurari, Qing Li, Chi Lin, Yinan Zhao, **Anhong Guo**, Abigale Stangl, Jeffrey P. Bigham. VizWiz-Priv: A Dataset for Recognizing the Presence and Purpose of Private Visual Information in Images Taken by Blind People. *The Bright and Dark Sides of Computer Vision: Challenges and Opportunities for Privacy and Security (CV-COPS 2019 Workshop)*. Long Beach, CA. 2019.
- [W.5] Danna Gurari, Qing Li, Abigale Stangl, **Anhong Guo**, Chi Lin, Kristen Grauman, Jiebo Luo, Jeffrey P. Bigham. VizWiz Grand Challenge: Answering Visual Questions from Blind People. In *VQA Challenge and Visual Dialog Workshop at CVPR 2018 (VQA 2019 Workshop)*. Salt Lake City, Utah. 2018.
- [W.4] **Anhong Guo**. Crowd-AI Systems for Non-Visual Information Access in the Real World. In *The 31st Annual ACM Symposium on User Interface Software and Technology Adjunct Proceedings (UIST 2018 Adjunct Doctoral Symposium)*. Berlin, Germany. 2018.
- [W.3] **Anhong Guo**. Crowd-AI Systems for Non-Visual Information Access in the Real World. In *Proceedings of the 2018 CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI 2018 Doctoral Consortium)*. Montréal, Canada. 2018.

- [W.2] Saiganesh Swaminathan, Ting-Hao K. Huang, Irene Lin, **Anhong Guo**, Gierad Laput, and Jeffrey P. Bigham. Epistemo: A Crowd-Powered Conversational Search Interface. In the Talking with Conversational Agents in Collaborative Action Workshop at the *20th ACM conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2017 Workshop)*. Portland, OR. 2017.
- [W.1] Jeffrey P. Bigham, Erin L. Brady, Cole Gleason, **Anhong Guo**, David A. Shamma. An Uninteresting Tour Through Why Our Research Papers Aren't Accessible. In *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems (alt.chi 2016)*. San Jose, CA. 2016.

Dissertation

- [D.1] **Anhong Guo**. Human-AI Systems for Visual Information Access. Ph.D. Dissertation. Human-Computer Interaction Institute, School of Computer Science, Carnegie Mellon University. Pittsburgh, PA. 2020.

Patents

- [P.1] **Anhong Guo**, Junhan Kong, Michael Rivera, Frank F. Xu, Jeffrey P. Bigham. StateLens: A Reverse Engineering Solution for Making Existing Dynamic Touchscreens Accessible. U.S. Provisional Patent Application 19/207, filed June 6, 2019.

Other Publications

- [O.1] Michael Nebeling, **Anhong Guo**, Kyle Murray, Annika Tostengard, Angelos Giannopoulos, Martin Mihajlov, Steven Dow, Jaime Teevan, Jeffrey P. Bigham. WearWrite: Orchestrating the Crowd to Complete Complex Tasks from Wearables (We Wrote This Paper on a Watch). *arXiv preprint arXiv:1508.02982 (Computer Science > Human-Computer Interaction)*.

Professional Experience

- 05/2019 – **Microsoft Research, Redmond**
12/2019 Research Intern in the Ability Group with Meredith Ringel Morris
Collaborated with Ece Kamar, Jennifer Wortman Vaughan, and Hanna Wallach
Investigated fairness issues of AI systems for people with disabilities [W.9]
Investigated people with physical disabilities' experiences with sensing systems [C.21]
Investigated challenges and tradeoffs in evaluating face recognition systems for fairness [C.24]
- 2017 – 2018 **Sensors Inc.**
Founding Member of startup to unleash visual sensing and turn video data into business insights [C.14]
- 05/2018 – **Snap Research, Venice**
12/2018 Research Intern in the HCI Group with Rajan Vaish and Andrés Monroy-Hernández
Developed Blocks: collaborative and persistent augmented reality experiences [C.18]
- 05/2017 – **Google Research, Mountain View**
08/2017 Research Intern in the Accessibility Engineering Team with Yu Zhong and Yang Li
Developed cursor-based interactions to support non-visual exploration [C.13]
- 05/2015 – **Microsoft Research, Redmond**
08/2015 Research Intern in the Intelligent User Experience Group with Tim Paek
Developed tilt-based techniques for no-touch, wrist-only interactions on smartwatches [C.8]
- 05/2013 – **SAP America, Atlanta**
07/2013 UX Designer and Developer Intern in the Mobile Innovation Center with Jonathan Zufi and Jeff Collier
Designed and developed a highly sophisticated, strategic and critical concept application for Costco's consumers, which involved advanced graphics, cloud integration, and offline requirements
Re-branded apps for Delta, FedEx, Lowe's, Kimberly Clark, etc. by modifying design and code, using the Apple app build system with Perforce, Git and Maven

- 07/2011 – **Qihoo 360, Beijing**
 09/2011 Product Manager Intern in the Mobile Internet Division with Sean Ma and Howard Hu
 Designed an automatic response system to collect feedback and offer customer service by employing natural language processing and knowledge database establishment technologies
 Conducted competitive analysis and feedback analysis to optimize UI and text of the Instant Messaging Product KouXin

Selected Press Coverage

- 06/2023 **Tech Xplore**. “New apps for visually impaired users provide virtual labels for controls and a way to explore images”
- 06/2023 **DBusiness Magazine**. “New Apps for Visually Impaired Users Provide Virtual Labels to Explore Images”
- 06/2023 **University of Michigan News**. “New apps for visually impaired users provide virtual labels for controls and a way to explore images”
- 06/2023 **University of Michigan Engineering Research News**. “New apps for visually impaired users provide virtual labels for controls and a way to explore images”
- 06/2023 **University of Michigan CSE News**. “New apps for visually impaired users provide virtual labels for controls and a way to explore images”
- 05/2022 **University of Michigan CSE News**. “Making collaborative online document editing accessible to blind users”
- 04/2022 **University of Michigan CSE News**. “Designing more accessible augmented reality for people with visual impairments”
- 12/2020 **University of Michigan CSE News**. “Incoming faculty Anhong Guo named one of Forbes’ 30 Under 30 in Science”
- 12/2020 **Detroit Free Press**. “Young Michigan experts make Forbes’s annual 30 under 30 list”
- 12/2020 **CMU SCS News**. “Forbes Names Guo Among ’30 Under 30’ Outstanding Young Scientists”
- 12/2020 **Forbes**. “Forbes 30 Under 30 2021: Science”
- 12/2019 **El País Economía**. “Ethics – Decisions based on artificial intelligence do not know (or do not want to) address disability.”
- 04/2019 **IEEE Computer Society**. “How the Blind Point a Smartphone at Everyday Control Panels—and Hear Prompts on Which of Those Microwave Buttons to Push. They Can Even Order Up Braille Labels.”
- 09/2018 **CMU HCII News**. “Three from HCII named 2018-19 Innovation Fellows”
- 03/2018 **Pittsburgh Business Times**. “AI startup wins McGinnis Venture Competition”
- 02/2018 **MIT Tech Review**. “A new data trove could teach computers to tell blind people what they need”
- 02/2018 **PittsburghPA.gov**. “City Announces Third Cohort of PGH Lab Startup Program”
- 02/2018 **GeekWire**. “These 8 Pittsburgh-area startups make up the city-backed PGH Lab incubator”
- 02/2018 **TribLIVE**. “PGH Lab announces third cohort of startup partnerships”
- 05/2017 **CMU HCII News**. “3D Printing Project, Façade, presented this week at CHI”
- 02/2017 **Perkins School for the blind eLEARNING**. “VizLens: iOS Appliance App”
- 02/2017 **VisionAware**. “Making Touch Controls Accessible”
- 01/2017 **Cool Blind Tech**. “VizLens Helps The Blind Operate Appliances With Digital Screens And Unlabeled Physical Buttons”
- 01/2017 **American Foundation for the Blind**. “VizLens and HALOS: Making Touchscreen Appliances and Other Devices More Blind Friendly”
- 01/2017 **MSWorld**. “Microwave Keypad App and Keypad for the Blind and Visual Difficulties”

- 10/2016 **E-Access Bulletin Live.** “Hacking for good: the Hackaday Assistive Technology Prize winners in their own words”
- 10/2016 **CMU HCII News.** “VizLens – An Interactive Smartphone App for the Blind”
- 09/2016 **CMU HCII News.** “Guo Receives Honorable Mention at MobileHCI 2016”
- 12/2013 **WABE 90.1FM.** “Cycling in Atlanta Is Gaining Momentum”
- 05/2013 **The Chattanooga.com.** “Georgia Highway Safety Officials, Bicycle Advocates Call For Safer Cycling Year In 2013”
- 05/2013 **Georgia Tech News.** “Making Atlanta a Better Place to Ride”
- 05/2013 **Channel 2’s People 2 People.** “Cycle Atlanta App”
- 12/2012 **Georgia Tech News.** “There’s an app for that. Tackling Atlanta’s Transit Conundrum”
- 12/2012 **Phys.org.** “Cycling app that tracks riders’ routes to assist city of Atlanta”
- 12/2012 **Creative Loafing.** “City, Georgia Tech roll out CycleAtlanta bicycling app”
- 12/2012 **Georgia Tech News.** “Georgia Tech Cycling App to Assist City of Atlanta”

Teaching

Instructor – EECS 493 User Interface Development

Electrical Engineering and Computer Science, University of Michigan
Winter 2021, Fall 2021, Fall 2022

Instructor – EECS 598 Human-AI Interaction & Systems

Electrical Engineering and Computer Science, University of Michigan
Winter 2022, Winter 2023

Teaching Assistant

- Fall 2018* **Co-Instructor – Weekly Recitation of HCII 05610: User Centered Research & Evaluation**
School of Computer Science, Carnegie Mellon University
Instructor rating: 4.6/5.0
- Spring 2018* **Teaching Assistant – HCII 05899: Accessibility Project Course**
School of Computer Science, Carnegie Mellon University
- Spring 2017* **Teaching Assistant – HCII 05391: Designing Human-Centered Systems**
School of Computer Science, Carnegie Mellon University
- Spring 2016* **Teaching Assistant – HCII 05899: Crowd Programming**
School of Computer Science, Carnegie Mellon University

Invited Talks and Presentations

- 08/2023 **Human-AI Systems for Accessible Immersion**
Lightning Talk, Google Fairness in Datasets for Machine Learning in Accessibility Workshop
- 11/2022 **Human-AI Systems for Accessibility**
Guest Lecture, Future User Interfaces Course (Host: Misha Sra)
- 11/2022 **Human-AI Systems for Accessibility**
Guest Lecture, Graduate Human-Computer Interaction Course (Host: Nikola Banovic)
- 09/2022 **Panel on Critical Perspectives on Algorithmic Fairness**
Panelist, U-M Algorithmic Reparation Workshop
- 08/2022 **Human-AI Systems for Accessibility**
Invited Talk, U-M CS KickStart

- 06/2022 **Human-AI Systems for Accessibility**
Invited Talk, Google Lookout Team (Host: Scott Adams)
- 11/2021 **Human-AI Systems for Accessibility**
Guest Lecture, Graduate Human-Computer Interaction Course (Host: Nikola Banovic)
- 10/2021 **Human-AI Systems for Visual Information Access**
Guest Lecture, Human-Centered Computing Research (Host: Toby Jia-Jun Li)
- 10/2021 **Human-AI Systems for Accessibility**
Invited Talk, U-M CDHW Disability Research Symposium
- 04/2021 **Human-AI Systems for Accessibility**
Accessibility Course, Carnegie Mellon University (Host: Patrick Carrington)
- 04/2021 **HCI-ML Expert Panel**
HCI for ML Course, University of Illinois at Urbana-Champaign (Host: Ranjitha Kumar)
- 04/2021 **Human-AI Systems for Accessibility**
Accessibility & AI Design Workshop, Facebook (Host: Yao Ding)
- 11/2020 **Toward Fairness in AI for People with Disabilities**
Introduction to Accessibility Course, University of Michigan (Host: Robin Brewer)
- 11/2020 **Toward Fairness in AI for People with Disabilities**
Future of Work and Disability Panel, OCAD University (Host: Jutta Treviranus)
- 10/2020 **Human-AI Systems for Visual Information Access**
Invited Talk, Michigan AI Symposium
- 08/2020 **Human-AI Systems for Visual Information Access**
Guest Lecture, Mercari R4D (Host: Bektur Ryskeldiev)
- Spring 2020 **Human-AI Systems for Visual Information Access**
University of Illinois at Urbana-Champaign, Department of Computer Science
University of Wisconsin-Madison, Department of Computer Sciences
Microsoft Research, Ability Group
University of Michigan, Computer Science and Engineering
University of Virginia, Department of Computer Science
Massachusetts Institute of Technology, Department of Electrical Engineering and Computer Science
University of Pittsburgh, School of Computing and Information
University of Rochester, Department of Computer Science
University of Toronto, Department of Computer Science
Simon Fraser University, School of Computing Science
Purdue University, Department of Computer Science
- 04/2020 **Human-AI Systems for Visual Information Access**
Crowdsourcing & Crowd-AI Systems Course, Pennsylvania State University (Host: Kenneth Huang)
- 03/2020 **Human-AI Systems to Make Physical Interfaces Accessible**
Harvard Center for Research on Computation and Society (CRCS) Workshop on AI for Social Impact
- 11/2019 **Human-AI Systems for Visual Information Access**
Human Factors Course, Carnegie Mellon University (Host: Laura Dabbish)
- 11/2019 **Human-AI Systems for Visual Information Access**
Robots Perceiving and Doing (R-PAD) Seminar, Carnegie Mellon University (Host: David Held)
- 10/2019 **Human-AI Systems for Visual Information Access**
Guest Lecture, Texas A&M University (Host: Jeeun Kim)
- 07/2019 **Fairness in AI for People with Disabilities**
HCI Lunch Talk Series, Microsoft Research Redmond
- 07/2019 **Human-AI Systems for Visual Information Access**
DUB Seminar, University of Washington (Host: Leah Findlater, Richard Ladner)

- 04/2019 **Crowd-AI Systems for Making Physical Interfaces Accessible**
Edge Computing Seminar, Carnegie Mellon University (Host: Mahadev Satyanarayanan)
- 03/2019 **Crowd-AI Systems for Accessing Visual Information in the Real World**
HCI Group, University of California, Los Angeles (Host: Xiang 'Anthony' Chen)
- 04/2018 **Crowd-AI Systems for Accessing Visual Information in the Real World**
Computational Ethics for NLP, Carnegie Mellon University (Host: Yulia Tsvetkov and Alan W. Black)
- 06/2017 **Making Real-World Interfaces Accessible Through Crowdsourcing, Vision, and Fabrication**
Invited Talk, Google Accessibility Engineering (Host: Yu Zhong and Ken Goldman)
- 07/2015 **Exploring Tilt for No-Touch, Wrist-Only Interactions on Smartwatches**
HCI Lunch Talk Series, Microsoft Research Redmond

Advising and Mentoring

PhD Advisees

- 2022 – **Ruei-Che Chang (Computer Science and Engineering, University of Michigan)**
Weinberg Cognitive Science Fellowship, 2024
CSE Departmental Fellowship, 2022
- 2022 – **Gregory Croisdale (Computer Science and Engineering, University of Michigan)**
Co-advised with Xu Wang
Rackham Merit Fellowship, 2022
- 2021 – **Chen Liang (Computer Science and Engineering, University of Michigan)**
CSE Outstanding Graduate Student Instructor Award, 2023
CSE Departmental Fellowship, 2021
- 2021 – **Jaylin Herskovitz (Computer Science and Engineering, University of Michigan)**
CSE Service Award for Excellence in Climate and DEI, 2023
NSF Graduate Research Fellowship, 2022
- 2021 – **Lei Zhang (School of Information, University of Michigan)**
Co-advised with Steve Oney

Thesis Committees (Ph.D.)

- 2023 **Mauli Pandey (School of Information, University of Michigan)**
Accessibility of Collaborative Programming for Blind and Visually Impaired Developers
- 2023 **Matthew Perez (Computer Science and Engineering, University of Michigan)**
Proposal: Quantitative Speech-Based Biomarkers for Automated Characterization of Pathological Speech
- 2023 **Stephan J. Lemmer (Robotics, University of Michigan)**
Hazy Oracles in Deep Learning
- 2023 **John Joon Young Chung (Computer Science and Engineering, University of Michigan)**
Steerable AI-powered Art-making Tools
- 2022 **Rebecca Krosnick (Computer Science and Engineering, University of Michigan)**
Proposal: Tools for Creating User Interface Automation Macros
- 2022 **Vaishnav Kameswaran (School of Information, University of Michigan)**
Proposal: Understanding the Helping-related Interactions of People with Visual Impairments in India

Thesis Committees (M.S.)

- 2020 – 2021 **Chen Liang (Texas A&M University)**
“An Interactive System to Support the Exploration and Measurement of Adaptive 3D Designs”
First position: Ph.D. student at UMich CSE

Visiting Scholars

- 2023 **Rosiana Natalie (Singapore Management University)**
“The Efficacy of Audio Description Customization for Blind and Low Vision People”

Master’s Students

- 2023 – **Emily Huang (University of Michigan)**
- 2021 – 2022 **Ruei-Che Chang (National Taiwan University)**
First position: Ph.D. student at UMich CSE
- 2020 – 2021 **Zhuohao Zhang (University of Illinois at Urbana-Champaign)**
First position: Ph.D. student at the University of Washington iSchool
- 2020 – 2021 **Cheuk Yin Phipson Lee (Carnegie Mellon University)**
First position: Apple AR Team
- 2017 – 2020 **Junhan Kong (Carnegie Mellon University)**
First Position: Ph.D. student at the University of Washington iSchool
- 2019 **Frank F. Xu (Shanghai Jiao Tong University)**
First Position: Ph.D. student at the Language Technologies Institute of Carnegie Mellon University
- 2019 **Runchang Kang (Carnegie Mellon University)**
First Position: Software Development Engineer at iRobot
- 2017 **Anuraag Jain (Carnegie Mellon University)**
First Position: Founder at Zensors Inc.
- 2016 **Haoran Qi (Carnegie Mellon University)**
First Position: Software Engineer at Google
- 2013 – 2016 **Xiaolong Wu (Georgia Institute of Technology)**
First Position: iOS Software Engineer at FitBit

Undergraduate Students

- 2023 – **Jacob Gettig (University of Michigan)**
- 2023 – **Jin Pan (University of Michigan)**
- 2023 **Gerrard (Hyung Yul) Choe (University of Michigan)**
- 2023 **Qiyuan Song (University of Michigan)**
- 2023 **Gage Birchmeier (University of Michigan)**
- 2023 – **Yuxuan Liu (University of Michigan)**
- 2023 – **Sirui Zhan (University of Michigan)**
- 2023 – **Samantha Au (University of Michigan)**
- 2023 – **Bella Palumbi (University of Michigan)**
- 2023 – **Zaizhe Liu (University of Michigan)**
First Position: Master’s student at the University of Southern California
- 2022 – 2023 **Minyu Cai (University of Michigan)**
First Position: Master’s student at Carnegie Mellon University

- 2022 – 2023 **Dier Hou (University of Michigan)**
First Position: Master’s student at the University of California, San Diego
- 2022 – 2023 **Tao Lu (University of Michigan)**
First Position: Master’s student at Georgia Institute of Technology
- 2022 – **Haocheng (Leo) Ren (University of Michigan)**
First Position: Master’s student at the University of Michigan
- 2022 – **Linfeng (Oscar) Song (University of Michigan)**
- 2022 – **Muzhe Wu (University of Michigan)**
First Position: Master’s student at Carnegie Mellon University
- 2022 – **Andi Xu (University of Michigan)**
- 2022 – 2023 **Tianying (Dannie) Zhang (University of Michigan)**
First Position: Software Engineer at Amazon
- 2022 – 2023 **Hongxiao Zheng (University of Michigan)**
First Position: Master’s student at Dartmouth College
- 2022 **Gabriela Lopez-Salgado (University of Michigan)**
- 2022 **Chenhao Zheng (University of Michigan)**
- 2021 – 2023 **Mahdi Qazwini (University of Michigan)**
First Position:
- 2021 **Yatharth Chhabra (University of Michigan)**
First Position: Master’s student at the University of Michigan
- 2020 – 2021 **Jaewook Lee (University of Illinois at Urbana-Champaign)**
First position: Ph.D. student at the University of Washington CSE
- 2020 **Dena Sabha (University of Washington)**
First Position: Designer at Disney
- 2018 **Hannah Murphy (Wellesley College)**
First Position: Software Engineer at Microsoft
- 2018 **Emily Porat (Carnegie Mellon University)**
First Position: UX Designer at Deloitte Digital
- 2016 – 2017 **Ronnie Shomiron Ghose (Carnegie Mellon University)**
First Position: Software Engineer at Salesforce.com
- 2015 **Suman Ghosh (Jadavpur University)**
First Position: Master’s student at the University of Genoa
- 2014 **Joan Chen (Georgia Institute of Technology)**
First Position: Security Architect at Morgan Stanley
- 2014 **Kelcy Newton (Georgia Institute of Technology)**
First Position: Software Engineer at Microsoft

Other Mentoring

- 2018 **Codetalk program with St. Joseph Center and Snap Inc.**
Help low income, underemployed and underserved women pursue entry level positions in the tech sector

Service

Program Committee

ACM CHI 2022, 2023, 2024
ACM UIST 2020, 2021, 2022
ACM ASSETS 2020, 2021, 2022, 2023
ACM WWW 2023
ACM IUI 2019, 2020, 2021
ACM FAccT 2021
ACM CHI Late Breaking Work 2019
ACM COMPASS 2018, 2019

Organizing Committee

ACM UIST 2023 Doctoral Symposium Chair
Michigan AI Symposium 2022, 2023 General Chair
ACM CHI 2022 E-Rights Chair
ACM UIST 2021, 2022 Proceedings Chair
AAAI HCOMP 2022 CrowdCamp Chair
ACM ASSETS 2019 Web Chair

Session Chair

UIST 2022 Session: Information and Visualization Interfaces
CHI 2022 Session: Technologies to Support Accessibility
ASSETS 2021 Session: AI and Accessibility
UIST 2021 Session: Understanding and Modifying UI
CHI 2021 Session: Affection and Support in a Digital World
ASSETS 2020 Session: Tangible Interaction
UIST 2020 Session: Transcribing Words and Directing Voice
CHI 2018 Session: Accessible Interaction Techniques
CHI 2017 Session: Learning and Reading

2021 – University of Michigan

Faculty Hiring Committee, Computer Science and Engineering
Graduate Program Committee, Computer Science and Engineering

2018 – 2020 Carnegie Mellon University

PhD Admissions Committee student representative, Human-Computer Interaction Institute
Faculty Hiring Committee student representative, Human-Computer Interaction Institute

Reviewer

CHI '15 '16 '17 '18 '19 '20* '21 '22, UIST '16 '17 '18 '19 '20 '21 '22*, Ubicomp (IMWUT) '15 '16 '17 '18 '19 '21, CSCW '21, IUI '15 '19, MobileHCI '17 '18 '19, ISWC '15 '18 '19, DIS '20 '22, TEI '19, GI '16, VRST '21, JAIR, TACCESS, IJHCS, Computer & Graphics, JINT, IEEE THMS, IEEE Access, etc.

***Special Recognition for Excellent Review**

Volunteer

CHI 2016 San Jose, CA
UbiComp/ISWC 2013 Zurich, Switzerland
UbiComp 2011 Beijing, China
Vice President of the Volunteer Association at BUPT

Last updated: September 2, 2023