

# Andrea Cuadra

Assistant Professor

Computer Science

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## Research Interests

Human-Computer Interaction (HCI), Human-Centered Artificial Intelligence, Inclusive Design, Ubiquitous Computing, Home Health, Education.

## Education

2022–2024 Postdoctoral Scholar, Computer Science (HCI), Stanford University

Supervisor: James A. Landay

2018–2022 Ph.D., Information Science, Cornell University

Advisors: Deborah Estrin (chair), Nicola Dell (co-chair), Malte Jung (minor member), Amon Millner (external member)

Dissertation title - Inclusive Interaction Design of Voice Assistants for Older Adults

2018–2020 M.Sc., Information Science, Cornell University

2015–2017 M.Sc., Engineering: Product Design, Stanford University

Advisors: Bill Burnett and David Kelley

Design Garage Project - *Increasing Child-Parent Quality Time*: identified specific user needs, and designed solutions as part of this year-long design project. Our final deliverable was a published children's book.

2009–2013 B.Sc., Engineering: Interaction Design, Olin College of Engineering

Advisor: Amon Millner

Senior Capstone Project - *Enhancing the Autodesk 123D Experience for Secondary School Students*: delivered bite-size pieces of curriculum to introduce 3D modeling software in various academic settings.

Grand Challenge Scholar Project - *Summer Camp: Motivating Students for Advanced Personalized Learning*: founded a sustainability summer camp for 8–12 year-old kids based on hands-on engineering projects and experiments.

## Publications

### Conference Papers (peer reviewed)

- [1] Andrea Green, Gabrielle Polite, Isabelle Hung, Kristen Fessele, Sarah Billington, James A. Landay, and **Andrea Cuadra** (In press, CSCW '25). *Black Older Adults' Perception of Using Voice Assistants to Enact a Medical Recovery Curriculum*.
- [2] Jianna So, Samantha Estrada, Matthew Jörke, Eva Bianchi, Maria Wang, Nava Haghighi, Kristen Fessele, James A. Landay, and **Andrea Cuadra** (2024). “*They Make Us Old Before We’re Old*”: *Designing Ethical Health Technology with and for Older Adults*. Proceedings of the ACM on Human-Computer Interaction. 8(CSCW2), (pp 1-30). <https://doi.org/10.1145/3687017>. **Best Paper Honorable Mention Award**.
- [3] **Andrea Cuadra**, Maria Wang, Lynn Andrea Stein, Malte F. Jung, Nicola Dell, Deborah Estrin, and James A. Landay (2024). *The Illusion of Empathy? Notes on Displays of Emotion in Human-Computer Interaction*. Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems. Article No.: 446. (pp 1–18). <https://doi.org/10.1145/3613904.3642336>. **Best Paper Honorable Mention Award**.
- [4] Alan Y. Cheng, Meng Guo, Melissa Ran, Arpit Ranasaria, Arjun Sharma, Anthony Xie, Khuyen N. Le, Bala Vinaithirthan, Shihe (Tracy) Luan, David Thomas Henry Wright, **Andrea Cuadra**, Roy Pea, and James A. Landay (2024). *Scientific and Fantastical: Creating Immersive, Culturally Relevant Learning Experiences with Augmented Reality and Large Language Models*. Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems. Article No.: 275. (pp 1–23). <https://doi.org/10.1145/3613904.3642041>
- [5] **Andrea Cuadra**, Jessica Bethune, Alexa Lempel, Rony Krell, Katrin Hänsel, Armin Shahrokni, Deborah Estrin, and Nicola Dell (2023). *Designing Voice-First Ambient Interfaces to Support Aging in Place*. Proceedings of the 2023 Designing Interactive Systems (DIS) Conference. <https://doi.org/10.1145/3563657.3596104>
- [6] Nava Haghighi, Matthew Jörke, Yousif Mohsen, **Andrea Cuadra**, and James A. Landay (2023). *A Workshop-Based Method for Navigating Value Tensions in Collectively Speculated Worlds*. Proceedings of the 2023 Designing Interactive Systems (DIS) Conference. <https://doi.org/10.1145/3563657.3595992>
- [7] Alan Y. Cheng, Jacob Ritchie, Niki Agrawal, Elizabeth Childs, Cyan DeVeaux, Yubin Jee, Trevor Leon, Bethanie Maples, **Andrea Cuadra**, and James A. Landay (2023). *Designing Immersive, Narrative-Based Interfaces to Guide Outdoor Learning*. Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems. <https://doi.org/10.1145/3544548.3581365>
- [8] **Andrea Cuadra**, Hyein Baek, Deborah Estrin, Malte F. Jung, and Nicola Dell (2022). *On Inclusion: Video Analysis of Older Adult Interactions with a Multi-Modal Voice Assistant in a Public Setting*. International Conference on Information & Communication Technologies and Development 2022 (ICTD). <https://doi.org/10.1145/3572334.3572371>
- [9] **Andrea Cuadra**, Shuran Li, Hansol Lee, Jason Cho, and Wendy Ju (2021). *My Bad! Repairing Intelligent Voice Assistant Errors Improves Interaction*. Proceedings of the ACM on Human-Computer Interaction. Volume 5. Issue CSCW1. Article No.: 27. (pp 1–24). <https://doi.org/10.1145/3449101>

- [10] **Andrea Cuadra**, Oluseye Bankole, and Michael Sobolev. (2021). *Planning Habit: Daily Planning Prompts with Alexa*. In *International Conference on Persuasive Technology* (pp. 73-87). Cham: Springer International. [https://doi.org/10.1007/978-3-030-79460-6\\_7](https://doi.org/10.1007/978-3-030-79460-6_7). **Shortlisted for Best Paper.**

### Journals (peer reviewed)

- [1] **Andrea Cuadra**, Justine Breuch, Samantha Estrada, David Ihim, Isabelle Hung, Derek Askaryar, Marwan Hassanien, Kristen Fessele, and James A. Landay (2024). *Digital Forms for All: A Holistic Multimodal Large Language Model Agent for Health Data Entry*. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies. Volume 8. Issue 2. Article No.: 72 (pp 1–39). <https://dl.acm.org/doi/pdf/10.1145/3659624>
- [2] **Andrea Cuadra**, Amy L. Tin, Gordon Taylor Moffat, Koshy Alexander, Robert J. Downey, Beatriz Korc-Grodzicki, Andrew J. Vickers, and Armin Shahrokni (2023). *The Association Between Perioperative Frailty and Ability to Complete a Web-Based Geriatric Assessment Among Older Adults with Cancer*. European Journal of Surgical Oncology. <https://doi.org/10.1016/j.ejso.2022.11.011>
- [3] **Andrea Cuadra**, Yen-Hao Chen, Kae-Jer Cho, Deborah Estrin, and Armin Shahrokni (2022). *Introducing the v-RFA, a voice assistant-based geriatric assessment*. Journal of Geriatric Oncology (Research Letter). <https://doi.org/10.1016/j.jgo.2022.05.001>
- [4] Jamy Li, **Andrea Cuadra**, Brian Mok, Byron Reeves, Jofish Kaye, and Wendy Ju (2019). *Communicating dominance in a nonanthropomorphic robot using locomotion*. Transactions on Human-Robot Interaction (THRI), 8(1), 4. <https://doi.org/10.1145/3310357>

### Posters and Abstracts

- [1] **Andrea Cuadra**, Amy L. Tin, and Armin Shahrokni (2022). The association between perioperative frailty and ability to complete a web-based geriatric assessment in older adults with cancer. J Clin Oncol 40. (Suppl; abstr e24022). [https://ascopubs.org/doi/abs/10.1200/JCO.2022.40.16\\_suppl.e24022](https://ascopubs.org/doi/abs/10.1200/JCO.2022.40.16_suppl.e24022)
- [2] **Andrea Cuadra**, David Goedicke, and J.D. Zamfirescu-Pereira (2021). *Democratizing Design and Fabrication Using Speech: Exploring co-design with a voice assistant*. In CUI 2021 - 3rd Conference on Conversational User Interfaces (CUI '21), July 27–29, 2021, Bilbao (online), Spain. ACM, New York, NY, USA, 8 pages. <https://doi.org/10.1145/3469595.3469624>
- [3] Natalie Friedman, **Andrea Cuadra**, Ruchi Patel, Shiri Azenkot, Joel Stein, and Wendy Ju (2019). *Voice Assistant Strategies and Opportunities for People with Tetraplegia*. In The 21st International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '19). ACM, New York, NY, USA, 575–577. <https://doi.org/10.1145/3308561.3354605>

### Workshops

- [1] Elizabeth Childs, Samir Ghosh, Sebastian Cmentowski, **Andrea Cuadra**, and Rabindra Ratan (In press, CHI '25). *Purposeful XR: Affordances, Challenges, and Speculations for an Ethical Future*.

## Creative Projects

- [1] **Andrea Cuadra.**, Sonia Doshi, Lynn Stechschulte. (2017). Goodnight News. Self-published on Amazon.
- [2] **Andrea Cuadra.** (2016). 20 1” Metal Cubes. Personal Statements art exhibit. Stanford, CA.
- [3] **Andrea Cuadra.** (2016). Baking Blocks. Materials: Inkjet on paper (24” by 45.5”). Look Closer art exhibit by show curator Camille Utterback. Coulter Art Gallery. Stanford, CA.

## Selected Honors and Awards

- 2024 Best Paper Honorable Mention, ACM CSCW for [2] in conference papers (top 4%)
- 2024 Best Paper Honorable Mention, ACM CHI for [3] in conference papers (top 5%)
- 2023 Stanford HAI—Personal and Private Ambient Intelligence for Senior Care Seed Grant (\$75,000 award)
- 2023 NAM Healthy Longevity Catalyst Award—COBRA: Cancer, Older adults, Balance, and Resistance Activities (\$50,000 award)
- 2023 Stanford HAI—Generative AI for the Future of Learning Seed Grant (\$5,000 award)
- 2022 Gordon and Betty Moore Foundation 9048 (\$120,000 subaward)
- 2022 Stanford PRISM Baker Postdoctoral Fellow (approx. \$35,000 award)
- 2022 ADA Health Disparities & Diabetes Innovative Clinical or Translational Science Award (\$600,000 award)
- 2020 MSKCC—Tele-Geriatric Oncology Program; Assessment, and Care at Home for the Most Vulnerable Patients. (\$200,000 award)
- 2019 Cornell Tech Digital Life Initiative Doctoral Fellow (\$6,000 award)
- 2013 National Academy of Engineering Grand Challenge Scholar
- 2009 Olin College four-year, full-tuition merit scholarship

## Invited Talks

2024	Olin College, AI and Society Class, <i>The Illusion of Empathy (?) in Conversational Agents</i> .	Needham, MA
2024	ACM CHI, <i>Workshop on EmpathiCH: Scrutinizing Empathy-Centric Design Beyond the Individual</i> , Panelist	Honolulu, HI
2023	Union College, CS Seminar Series, <i>Designing Voice Assistants Inclusively</i> .	Schenectady, NY
2022	Rochester Institute of Technology (RIT), <i>Designing Voice Assistants Inclusively</i> .	Rochester, New York
2022	La Salle University of Technology (ULSA), <i>Designing Voice Assistants Inclusively</i> .	León, Nicaragua
2021	Memorial Sloan Kettering, <i>Using Artificial Intelligence to Improve Healthcare Inclusion</i>	New York, NY
2014	TEDx, <i>Don't Shut Down Your Creativity</i>	Managua, Nicaragua
2014	Universidad Autónoma del Occidente, <i>The Fabrication Behind My Inventions</i>	Cali, Colombia
2014	IEEE 33rd Central American and Panama Student Conference, <i>Entrepreneurship in Digital Fabrication</i>	Managua, Nicaragua

## Hackathon Awards

2016	Yahoo internal, 1st Place
2015	NASA SpaceApps Challenge, 1st Place and People's Choice Award
2014	Hasbro-A-Thon, 1st Place
2013	Hasbro-A-Thon, 2nd Place
2013	MIT Education Design-A-Thon, 2nd Place

## Teaching Experience

### Instructor

2024	ENGR 2110: Principles of Integrated Engineering	Olin College
2023	CS 377E: Designing Solutions to Global Grand Challenges	Stanford University
2017	Pre-Collegiate Studies: Design Thinking	Stanford University

## Academic Advising

- 2024     **Elías López Dalla Nora**, undergraduate (B.Sc.), Olin College of Engineering
- 2024     **Minuja Rajasinghe**, undergraduate (B.Sc.), Olin College of Engineering
- 2024     **Jiayuan Liu**, undergraduate (B.Sc.), Electrical and Computer Engineering, Olin College of Engineering
- 2023     **Andrea Green**, graduate (Ph.D.), Civil and Environmental Engineering, Stanford University
- 2023     **Jianna So**, graduate (Ph.D.), Computer Science, Harvard University
- 2023     **David Ihim**, graduate (M.Sc.), Computer Science, Stanford University
- 2023     **Carina Ly**, graduate (M.Sc.), Management Science and Engineering, Stanford University
- 2023     **Maria Wang**, undergraduate (B.Sc.), Product Design, Stanford University
- 2023     **Gabrielle Polite**, undergraduate (B.Sc.), Symbolic Systems, Stanford University
- 2023     **Samantha Estrada**, undergraduate (B.Sc.), Computer Science, Stanford University
- 2022     **Marwan Hassanien**, undergraduate (B.Sc.), Computer Science, Stanford University
- 2022     **Derek Askaryar**, undergraduate (B.Sc.), Computer Science, Stanford University
- 2022     **Justine Breuch**, graduate (volunteer), Software Engineering, Google
- 2022     **Isabelle Hung**, high school (volunteer), User Experience Design, Monta Vista High School

## Teaching Assistantships

2018	INFO 5345, Developing and Designing Interactive Devices	Cornell Tech
2018	INFO 5345, Developing and Designing Interactive Devices	Cornell Tech
2017	From Ideas to Action	IDEO U
2017	Leading for Creativity	IDEO U
2017	Executive Education, Design Thinking for Customer Experience	INCAE
2017	ENGR 280, From Play to Innovation	Stanford University
2017	ME 120, History and Philosophy of Design	Stanford University
2017	ME 216B, Advanced Product Design: Implementation 1	Stanford University
2017	ME 110B, Digital Design Principles and Applications	Stanford University
2017	ME 110, Design Sketching	Stanford University
2016	ME 110B, Digital Design Principles and Applications	Stanford University
2016	ME 110, Design Sketching	Stanford University
2016	ME 115A, Introduction to Human Values in Design	Stanford University
2016	ME 101, Visual Thinking	Stanford University
2012	ENGR 2599A, Computing and Craft	Olin College

## Academic Service

### Chair positions

- Associate Chair, Proceedings of the ACM on Computer Supported Cooperative Work and Social Computing (CSCW), July cycle spanning 2023 & 2024
- Session Chair, Speculative Design and Emerging Technologies, CSCW, 2024

### Reviewer

- ACM CHI Conference on Human Factors in Computing Systems, 2018, 2019, 2021, 2022, 2023, & 2024
- Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), 2023 & 2024
- Proceedings of the ACM on CSCW, 2023 & 2024
- International Journal of Human-Computer Interaction, 2022
- Alt.HRI at the ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2022
- ACM Transactions on Human-Robot Interaction (THRI), 2021

- IEEE Robotics and Automation Letters (RA-L), 2021
- ACM Designing Interactive Systems (DIS) conference, 2020
- ACM International Conference on Tangible, Embedded and Embodied Interaction (TEI), 2017

### **University Service**

- Stanford INSPiRE-CS Research Program (undergraduate research program), research advisor, 2023
- Stanford CURIS (Computer Science undergraduate research program), research advisor, 2023
- Stanford IxD Research Group RAship program, organizer and interviewer, 2022
- Stanford Smart Primer research retreat, organizer and speaker, 2022
- Olin College FRAME mentorship program, mentor to three Latinx undergrads, 2022
- Cornell Tech Maker Lab, teaching volunteer, 2018–2021
- Cornell University Graduate Students for Gender Inclusion in Computing, 2020
- Cornell University Cornell Tech PhD Admissions Committee, 2019
- Olin College alumna interviewer for undergraduate admissions, 2019

### **Other Community Service**

- Babson College Global Health Innovation Lab final presentations, judge, 2024
- The first workshop on Healthy Interfaces (HEALTHI), program committee member, 2021
- Costa Rica Social innovation company (Barrilete), advisor, 2019–present
- Universidad Autónoma de Occidente FabLab inauguration via Fulbright, workshop lead and speaker, 2014

### **Program Participation**

- NSF Engineering (ENG) CAREER Proposal Workshop Mock Panel Review Session, 2024
- ACM CHI Workshop on Post-growth HCI: Co-Envisioning HCI Beyond Economic Growth, 2024
- ACM CHI Workshop on CUI@CHI: Inclusive Design of CUIs Across Modalities and Mobilities, 2023
- ACM DIS Workshop on Towards Mutual Benefit: Reflecting on Artist Residencies as a Method for Collaboration, 2023
- Preparing Future Professors, mentored by Alark Joshi at the University of San Francisco, 2022–2023
- Rochester Institute of Technology Future Faculty Career Exploration Program, 2022
- CMD-IT Academic Careers Workshop (ACW), 2021



- ACM CHI Workshop on Conversational Agents for Health and Wellbeing, 2020

## Industry Experience

### Internships

2021	Sidewalk Labs, Mesa and Delve User Experience Research	New York, NY
2019	Google, Search User Experience Research	Mountain View, CA
2018	Google, Chrome User Experience Research	San Francisco, CA
2016	Yahoo, Flurry User Experience Research	Sunnyvale, CA
2012	(Fall) Hopper, User Experience Research and Design	Cambridge , MA
2012	(Summer) Hopper, Product Management	Boston, MA

### Professional Jobs

2013–2020	Entrepreneur Toy and Game Inventor, Crazy Machine
2014–2015	Remote Technical Support, Modkit
2013–2014	User Experience Researcher and Designer, Hopper