Andrea Cuadra

Assistant Professor   Phone: +1 (786) 239 2893

Computer Science   Email: acuadra@olin.edu

Olin College of Engineering, Needham, MA   Website: www.andreacuadra.com

Research Interests

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

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.

Work Experience

Teaching

2023	CS 377E: Designing Solutions to Global Grand Challenges	Stanford University

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

Industry 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

Other Positions

2013–2020	Entrepreneur Toy and Game Inventor, Crazy Machine
2017	Research Contractor at REDlab, Stanford Graduate School of Education
2017	Summer Instructor, Stanford Pre-Collegiate Studies
2014–2015	Remote Technical Support, Modkit
2013–2014	User Experience Researcher and Designer, Hopper

Volunteer Service

2022	IxD Research Group RAship program, organizer and interviewer	Stanford University
2022	Smart Primer research retreat, organizer and speaker	Stanford University
2022	FRAME mentorship program, mentor to three Latinx undergrads	Olin College
2022	Social innovation company (Barrilete), advisor (since 2019)	Costa Rica
2021	Maker Lab, teaching volunteer (since 2018)	Cornell Tech
2020	Graduate Students for Gender Inclusion in Computing, member	Cornell University
2019	PhD Admissions Committee, Cornell Tech representative	Cornell University
2019	Undergraduate admissions, alumna interviewer	Olin College

Professional Activities

- Participant, NSF Engineering (ENG) CAREER Proposal Workshop Mock Panel Review Session, 2024

- Panelist, ACM CHI Workshop on EmpathiCH: Scrutinizing Empathy-Centric Design Beyond the Individual, 2024

- Participant, ACM CHI Workshop on Post-growth HCI: Co-Envisioning HCI Beyond Economic Growth, 2024

- Associate Chair, Proceedings of the ACM on Computer Supported Cooperative Work and Social Computing (CSCW), 2023–2024

- Research adviser, INSPiRE-CS Research Program (undergraduate research program of Stanford University), 2023

- Research adviser, CURIS (undergraduate research program of Stanford's Computer Science Department), 2023

- Reviewer, Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), 2023 & 2024

- Participant, ACM CHI Workshop on CUI@CHI: Inclusive Design of CUIs Across Modalities and Mobilities, 2023

- Participant, ACM DIS Workshop on Towards Mutual Benefit: Reflecting on Artist Residencies as a Method for Collaboration, 2023

- Fellow, Preparing Future Professors, mentored by Alark Joshi at the University of San Francisco, 2022–2023

- Reviewer, ACM CHI Conference on Human Factors in Computing Systems, 2018, 2019, 2021, 2022, 2023, & 2024

- Participant, Rochester Institute of Technology Future Faculty Career Exploration Program, 2022

- Reviewer, International Journal of Human-Computer Interaction, 2022

- Reviewer, Alt.HRI at the ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2022

- Reviewer, ACM Transactions on Human-Robot Interaction (THRI), 2021

- Program Committee Member, the first workshop on Healthy Interfaces (HEALTHI), 2021

- Participant, CMD-IT Academic Careers Workshop (ACW), 2021

- Reviewer, IEEE Robotics and Automation Letters (RA-L), 2021

- Reviewer, ACM Designing Interactive Systems (DIS) conference, 2020

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

- Reviewer, ACM International Conference on Tangible, Embedded and Embodied Interaction (TEI), 2017

Invited Talks

2023	Union College, CS Seminar Series, *Designing Voice Assistants Inclusively.*	Schenectady, New York
2022	Rochester Institute of Technology (RIT), *Designing Voice Assistants Inclusively.*	Rochester, New York
2022	La Salle University of Technology (ULSA), *Designing Voice Assistants Inclusively.*	León, Nicaragua
2021	Memorial Sloan Kettering, *Using Artificial Intelligence to Improve Healthcare Inclusion*	New York, NY
2014	TEDx, *Don't Shut Down Your Creativity*	Managua, Nicaragua
2014	Universidad Autónoma del Occidente, *The Fabrication Behind My Inventions*	Cali, Colombia
2014	IEEE 33rd Central American and Panama Student Conference, *Entrepreneurship in Digital Fabrication*	Managua, Nicaragua

Selected Honors and Awards

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)

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

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

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.), Olin College of Engineering

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

Publications

Conference Papers (peer reviewed)

[1] **Andrea Cuadra**, Samar Sabie, Yan Shvartzshnaider, Nicola Dell, and Deborah Estrin (In Submission). *Privacy Cards: Designing Consentful Interactions for Ubiquitous Computing.*

[2] Andrea Green, Gabrielle Polite, Isabelle Hung, Kristen Fessele, Sarah Billington, James A. Landay, and **Andrea Cuadra** (In submission). *"Not Until It's Absolutely Necessary": Black Older Adults' Perception of Supporting Medical Recovery with Voice Assistants.*

[3] Jianna So, Samantha Estrada, Matthew Jörke, Eva Bianchi, Maria Wang, Nava Haghighi, Kristen Fessele, James A. Landay, and **Andrea Cuadra** (In press, 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. CSCW.

[4] **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.***

[5] 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.* Pro-

ceedings of the 2024 CHI Conference on Human Factors in Computing Systems. Article No.: 275. (pp 1–23). https://doi.org/10.1145/3613904.3642041

[6] **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

[7] 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

[8] 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

[9] **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

[10] **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

[11] **Andrea Cuadra**, Oluseye Bankole, and Michael Sobolev. (2021). *Planning Habit: Daily Planning Prompts with Alexa.* In Persuasive Technology. PERSUASIVE 2021. Lecture Notes in Computer Science, vol 12684. Springer, Cham. https://doi.org/10.1007/978-3-030-79460-6_7

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

[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

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.