

VINITHA GADIRAJU

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Education

University of Colorado, Boulder (CU Boulder)

August 2018 - Present

Ph.D. Computer Science

Expected Graduation Date: May 2023

Dissertation:

Designing collaborative learning tools for visually impaired children and their support network

Committee Members:

Shaun Kane (advisor), Richard Ladner, Tom Yeh, Ellen Do, Anke Brock, Deborah Palmer

University of Oregon (UOregon)

September 2015 – June 2018

B.S. Computer Science, Minor in Psychology

Awards

- 2022 **Outstanding Service Award**, CU Boulder, Computer Science Department (\$600)
 - 2021 **Sickle Cell Disease Challenge 1st Place Winner**, National Heart, Lung, and Blood Institute
Designed a trivia game prototype on Figma to help patients learn about Sickle Cell (\$25,000)
 - 2021 **Publication Recognition Award**, CU Boulder, Computer Science Department (\$200)
 - 2021 **Collegiate Award Finalist**, National Center for Women in Technology
 - 2020 **Department Summer Research Fellowship for Outstanding PhD TA**, CU Boulder,
Computer Science Department (\$6,000)
 - 2020 **Chateaubriand Fellow**, Embassy of France in the United States (€7,298)
 - 2020 **Graduate Research Fellow (NSF GRFP)**, National Science Foundation (\$114,000)
 - 2020 **Collegiate Award Finalist**, National Center for Women in Technology
 - 2020 **Award Winner for Aspirations in Computing**, National Center for Women in Technology
 - 2019 **Graduate Student Research Competition Winner**, ACM ASSETS 2019 (\$500)
1st Place Winner at the ACM Graduate Student Research Competition [P.2]
 - 2018 **Conference Travel Award**, CU Boulder, Computer Science Department (\$1,000)
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Publications

Peer-Reviewed Conference Papers

- [C.3] **Vinitha Gadiraju**, Jérémie Garcia, Shaun K. Kane, Anke M. Brock. 2021. “It is fascinating to make these beasts fly”: Understanding Visually Impaired People’s Motivations and Needs for Drone Piloting. In Proceedings of the 2021 SIGACCESS Conference on Computers and

Accessibility (ASSETS '21, 29% acceptance rate). ACM. DOI:

<https://doi.org/10.1145/3441852.3471219>

- [C.2] **Vinitha Gadiraju**, Olwyn Doyle, and Shaun K. Kane. 2021. Exploring Technology Design for Students with Vision Impairment in the Classroom and Remotely. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21, 26.3% acceptance rate)*. ACM. DOI: <https://doi.org/10.1145/3411764.3445755>
- [C.1] **Vinitha Gadiraju**, Annika Muehlbradt, and Shaun K. Kane. 2020. BrailleBlocks: Computational Braille Toys for Collaborative Learning. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20, 24.3% acceptance rate)*. ACM. DOI: <https://doi.org/10.1145/3313831.3376295>

Journal Articles

- [J.1] Amy Ouyang, Manasa Gadiraju, Veda Gadiraju, Landon Power, **Vinitha Gadiraju**, Gloria Liu, Kristin P. Williams, Michael M. Binkley, Sherif M. Badawy, and Melanie E. Fields. "GRAPES: Trivia game increases sickle cell disease knowledge in patients and providers and mitigates healthcare biases." *Pediatric Blood & Cancer* 69, no. 7 (2022): e29717.

Posters, Extended Abstracts, and Presentations

- [P.3] **Vinitha Gadiraju**. 2021. Tactile Play and Literacy Learning for Visually Impaired Children. Doctoral Consortium at the 2021 *International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '21)*. ACM.
- [P.2] **Vinitha Gadiraju**. 2019. BrailleBlocks: Braille Toys for Cross-Ability Collaboration. In *Proceedings of the 2019 International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '19)*, (pp. 688-690). ACM. DOI: <https://doi.org/10.1145/3308561.3356104>
- [P.1] **Vinitha Gadiraju** and Shaun K. Kane. 2019. Computational Tools to Enable Learning Braille. Poster at CRA-W Grad Cohort for Women.

Papers Under Review

- [R.1] **Vinitha Gadiraju**, Shaun Kane, Sunipa Dev, Alex Taylor, Ding Wang, Robin Brewer, and Emily Denton. 2022. "I wouldn't say offensive but...": Disability-Centered Perspectives on Large Language Models. Under review at the 2023 *CHI Conference on Human Factors in Computing Systems (CHI '23)*. Preprint available by request.

Academic Research

Graduate Researcher, Superhuman Computing Lab

CU Boulder, Fall 2018 - Current

- Currently studying collaborative Independent Living Skill Development for blind or visually impaired (BVI) children and their parents at home.

- Conducting an interview and diary study to characterize how families develop independence at home, what additional skills they value, and how technology can support development in these multifaceted areas.
- Led an ethnographic study at the Colorado School for the Deaf and the Blind to understand educator values for BVI children, current technology use for instruction, and how game-based technology can support instructors in the classroom and remotely [C.2].
 - Observed learning, teaching, and collaboration strategies between peers and educators related to Braille education, literacy, and Expanded Core Curriculum.
 - Conducted informal interviews with students, educators, and school administration.
 - Co-designed with educators to create games and activities to teach literacy and social skills for remote education and in-person instruction.
- Designed and created BrailleBlocks, a learning tool using tangible blocks and games to help visually impaired children and sighted collaborators learn, teach, and practice Braille [C.1].
 - Built tangible blocks representing Braille cells and coded an interface with corresponding educational games.
 - Programmed with OpenCV to color detect pegs in the blocks for real-time Braille letter and word detection.
 - Conducted user studies with sighted parents and visually impaired children to evaluate the system and elicit feedback.

Chateaubriand Research Fellow

École nationale de l'aviation civile, Spring 2021 – Summer 2021

- Led two projects to explore accessible drone piloting for BVI adults.
 - Surveyed and interviewed visually impaired participants to understand their motivation to fly and suggestions for how piloting can be made accessible [C.3].
 - Built a wearable accessible drone piloting system with audio and haptic feedback to indicate direction and depth during flight.
 - Conducted participatory design based user studies with visually impaired adults for early evaluation of the prototype.

Undergraduate Research Assistant, Human-Computer Interaction Lab

University of Oregon, Spring 2017 - Fall 2017

- Contributed to the design and analysis of personalized media technology for people with Rett Syndrome.
 - Built 3 working media device prototypes for people with Rett Syndrome.
 - Coded video data to analyze the prototypes' effectiveness for participants.

Undergraduate Research Assistant, Learning Lab

University of Oregon, Fall 2016 - Spring 2018

- Contributed to a PhD thesis studying the early auditor surroundings of infants.
 - Coded in ELAN to analyze audio files of an infant's surroundings for music.

- Led an independent project in the lab studying infant exposure to happy, upbeat music in their daily lives. Analyzed data in R.

Industry Experience

Research Intern, Google Research - People + AI Research

Mountain View, California, Summer 2022

- Led a project on characterizing Large Language Model harm and bias towards people with disabilities by facilitating interaction between participants and an associated chatbot.
 - Designed AI prompts to moderate conversations about disability between participants and the language model.
 - Moderated focus groups with 56 participants identifying across diverse disabilities.
 - Conducted iterative thematic analysis to generate a codebook for open coding.
 - A publication on this work is currently under review at ACM CHI 2023 [R.1].

Software Engineering Intern, Intel Corporation - Data Center Engineering Group

Hillsboro, Oregon, Summer 2016

- Designed and created visualization software for Platform Hardware of Intel Server products.
 - Drew Platform HW description graphics in browser with HTML Canvas and SVG elements and developed custom JavaScript code using D3.js Library.

Teaching

Fall 2021	Course Manager Fundamentals of Human-Computer Interaction (CSCI 3200), CU Boulder
Fall 2018 - Spring 2020	Teaching Assistant Fundamentals of Human-Computer Interaction (CSCI 3200), CU Boulder
Spring 2017	Program Manager and Tutor Top Research Methods in Psychology (PSY 303), UOregon
Fall 2017	Tutor Top Research Methods in Psychology (PSY 303), UOregon

Mentorship

Current	Lucia Jayne - M.S. in Computer Science (CU)
2022	Alexis Grémont - M.S. in Aeronautics (École nationale de l'aviation civile)
2019 - 2021	Olwyn Doyle - B.A. in Political Science and Government and Computer Science (CU)

Press

2020 [ATLAS affiliated PhD student honored by National Science Foundation](#)

- ATLAS Institute, April 15 2020
- 2019 [BrailleBlocks: Smart Toys for Collaborative Braille Education](#)
International Council on English Braille, December 2019 newsletter
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Service

- 2022 Late-Breaking Work Program Committee, ACM CHI '23, Hamburg, Germany
- 2022 Reviewer, ACM CHI '23, Hamburg, Germany
- 2022 Internship Guide Panelist, CU Boulder
- 2021 Teaching Assistant Hiring Interviewer, CU Boulder
- 2021 Late-Breaking Work Program Committee, ACM CHI '22, New Orleans, USA/Virtual
- 2021 Student Volunteer, ACM ASSETS, Virtual
- 2020 Prospective Faculty Student Host, CU Boulder
- 2020 Graduation Application Feedback Program Mentor, CU Boulder
- 2020 Student Volunteer, ACM CHI (Canceled due to COVID-19), Honolulu, USA
- 2019 Reviewer, ACM/IEEE HRI '20, Cambridge, UK
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Organizations

Graduate Committee and Graduate Student Association

CU Boulder, Department of Computer Science, Fall 2021 – Spring 2022

- Communicated and addressed departmental issues between faculty (Graduate Committee) and graduate student leaders (Graduate Student Association)
- Advocated for fair tuition for internship credits for international students.
- Planned inclusive, unifying departmental events, such as trivia nights and scavenger hunts.

Antiracism and Inclusion Committee

CU Boulder, Department of Engineering, Summer 2020 – Winter 2020

- Worked with administration to analyze student survey data and faculty/course review questionnaires to identify issues with inclusivity, racism, and harassment in the department.
- Advocated for and helped implement inclusive recruitment and retention practices for students and faculty.
- Designed a survey to characterize the current racial climate and culture of the department.

Graduate Student Advisory Board, Computer Science Representative

CU Boulder, Department of Engineering, Fall 2019 – Fall 2020

- Planned department-wide social events, such as mixers and virtual game nights.

TechTogether Conference, Director

University of Oregon, Spring 2018

- Directed a student-led conference to support students in professional development.
- Organized a keynote speaker, panels with industry and academia professionals, 1-on-1 resume sessions, and networking events.

Women in Computer Science, President (2017-2018) and Secretary (2016-2017)

University of Oregon, Fall 2016 – Spring 2018

- Organized professional networking events, social mixers, industry recruitment visits, and computer science study sessions.

Students of the Indian Subcontinent, Vice-President

University of Oregon, Fall 2017 - Spring 2018

- Organized university-wide cultural events, such as Holi and Diwali.
- Moderated movie nights followed by discussions of asian representation in the media.

Tutoring Program Co-Creator/Team Coordinator, Psychology Department

University of Oregon, Spring 2017 - Spring 2018

- Co-created a tutoring program to support introductory psychology courses.
 - Designed a syllabus for the program, created weekly presentation slides on effective tutoring strategies, trained future tutors, and held office hours.