Vinitha Gadiraju

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Faculty Position

Wellesley College   July 2023 - Present
Assistant Professor in Computer Science, Tenure-Track

Education

University of Colorado, Boulder (CU Boulder)   August 2018 - May 2023
Ph.D. Computer Science
M.S. Computer Science

University of Oregon (UOregon)   September 2015 – June 2018
B.S. Computer Science, Minor in Psychology

Awards

2024   **Research Scholar Program Award**, Google Research ($60,000)
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]

Publications

Peer-Reviewed Conference Papers

[C.6]   Akankshita Dash, **Vinitha Gadiraju**, Elisa Kreiss. 2025. From Charts to Clarity: The Effects of
        Visualization Literacy on Accessibility Description Quality. Under Review.

[C.5]   **Vinitha Gadiraju**, Lucia Jayne, Shaun K. Kane. 2024. "It's an independent living skill, but
        covered with fun!": Prompting At-Home Skill Development for Children with Vision

Impairment. In Proceedings of the 2024 SIGACCESS *Conference on Computers and Accessibility* (ASSETS '24, *28% acceptance rate*). ACM. DOI: https://doi.org/10.1145/3663548.3675626

[C.4]   **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. In Proceedings of the 2023 *ACM Conference on Fairness, Accountability, and Transparency* (FAccT '23). ACM. DOI: https://doi.org/10.1145/3593013.3593989

[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. Guilliams, 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.

Workshop Papers

[W.1]   Tiffany Horter, Serena Booth, **Vinitha Gadiraju**. 2024. Helping People Predict Agent Behaviors by Operationalizing the Variation Theory of Learning. *NeurIPS 2024 Workshop on Behavioral Machine Learning.* https://openreview.net/forum?id=1mO4BuJowX

Posters and Extended Abstracts

[P.4]   Kayla Mullen, Wenhan Xue, Manasa Kudumu. Advised by **Vinitha Gadiraju**. 2024. "I'm treating it kind of like a diary": Characterizing How Users with Disabilities Use AI Chatbots. Student Research Competition (2nd Place Winner) at the 2024 *International ACM SIGACCESS Conference on Computers and Accessibility* (ASSETS '24). ACM. DOI: https://doi.org/10.1145/3663548.3688549

[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.*

Invited Talks

2025   University of Maryland (BBL Speaker Series)
Navigating Bias and Leveraging AI: Exploring the Dual Reality for Users with Disabilities

2024   Northeastern University (Guest Lecture)
Participatory Design Methods to Investigate Accessible Tools and Disability Representation

Academic Research

Principal Investigator, Gadiraju Lab
Wellesley College, July 2023 - Current

- Translating mental model visualizations to a digital tool to support adolescents in Dialectical Behavior Therapy (DBT). (In collaboration with Dr. Yaniv Yacoby at Wellesley College).
  - Surveying adolescents (college students) for individual mental models to capture the diverse ways in which people process their emotional state changes.
  - Running focus groups with small participant groups to understand how they discuss and converge on common visualizations to represent emotional and mental state changes using a design tool (FigJam).

- Investigating how older adults with disabilities form relationships with social companionship generative AI chatbots to navigate their disabilities. (In collaboration with Dr. Maitraye Das at Northeastern University).
  - Conducting a longitudinal diary study during which participants use Replika to support them as they navigate recent disability acquisition and/or diagnosis.
  - Utilizing weekly interviews during the diary study to capture how participant needs shift, Replika's adopted "personality" changes, and the potential harms that arise during vulnerable interaction contexts such as companionship and health advice.

- Characterized Large Language Model use among people with disabilities within their daily routines [P.4].

- ○ Interviewed people with disabilities to characterize how this population used generative AI tools in their daily routines and within their broader technological ecosystem.
- ○ Conducted diary studies to build a contextual conversational dataset between people with disabilities and chatbots, while highlighting challenges, benefits, and harms during interaction.

Graduate Researcher, Superhuman Computing Lab
CU Boulder, Fall 2018 - May 2023
- Investigated collaborative Independent Living Skill Development for blind or visually impaired (BVI) children and their parents at home.
  - ○ Conducted 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 [C.4]
    - 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.

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

Spring 2025	Introduction to Programming (CS111), Wellesley College Human-Computer Interaction (CS220), Wellesley College
Fall 2024	Introduction to Programming (CS111), Wellesley College Designing for Accessibility (CS325), Wellesley College
Spring 2024	Introduction to Programming (CS111), Wellesley College
Fall 2023	Introduction to Programming (CS111), Wellesley College Human-Computer Interaction (CS220), Wellesley College

| Fall 2021 | Course Manager |
| | Fundamentals of Human-Computer Interaction (CSCI 3200), CU Boulder |

| Fall 2018 – | Teaching Assistant |
| Spring 2020 | 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

<u>While at Wellesley College</u>

Independent Study/Lab Members

Spring 2025	Sneha Sriram, Wenhan Xue, Manasa Kudumu, Kamora Adejo, Emmie Regan
Fall 2024	Sneha Sriram, Wenhan Xue, Manasa Kudumu
Spring 2024	Sneha Sriram, Wenhan Xue

Honors Thesis Advisees

| 2023-2024 | Tiffany Horter |
| | CS Thesis: Getting In Your Robot's Head: Building Mental Models of Robots Using Human-Concept Learning [W.1] |

Honors Thesis Committees

2024-2025	Janavi Padala
	CS Thesis: It's Time To Chime In! A Video Game on Political Misinformation and Individual Impact
	Anna Zhou
	CS Thesis: Investigating How Technologies and Platforms Shape the VTuber Experience
	Maya Mau
	CS Thesis: Building and Assessing a Web-based, Accessible, Three-Dimensional Modeling Tool to allow High School Students to Explore Molecular Structure, Intermolecular Interactions, and Molecular Dynamics Simulations
2023-2024	Zhihan Xu
	CS Thesis: The Mysteries of Large Language Models: Tracing the Evolution of Transparency in OpenAI's GPT Models

Summer Research Advising

2025	Taniyah Hicks
	Project: Navigating Disability Diagnoses with Replika

2025	Kelly Ramos Pereira
	Project: Navigating Disability Diagnoses with Replika

2025	Wenhan Xue
	Project: Navigating Disability Diagnoses with Replika

2025	Ivy Wang
	Project: Mental Model Visualizations for DBT

2024	Kayla Mullen
	Project: Disability Representation in Large Language Models

2024	Wenhan Xue
	Project: Disability Representation in Large Language Models

2024	Manasa Kudumu
	Project: Disability Representation in Large Language Models

Other Student Mentoring

2024	Jami Johnson, Web Development Advising

Non-Wellesley Research Advising

2024-2025	Akankshita Dash, Graduate Student at Stanford University
	Project: Wikipedia Image Descriptions for BLV Users

2024	Sarah Adams, Undergraduate Student at Harvard University
	Project: Clinician Perspectives on ML in suicide risk prediction

2024	Sydney Levy, Graduate Student at Harvard University
	Project: Clinician Perspectives on ML in suicide risk prediction

2023-2025	Alicia Boyd, Postdoctoral Researcher at New York University
	Project: Disability Representation in Large Language Models

While at CU Boulder

2022-2023	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)

Service

2025	Hybrid Chair, ACM ASSETS '25,	Denver, USA
2025	Program Committee, ACM ASSETS '25,	Denver, USA
2024	Area Chair, Accessibility and Aging Track, ACM CHI '25,	Yokohama, Japan
2024	Juror, Experience Reports, ACM ASSETS '24,	St. John's, Newfoundland and Labrador
2024	Reviewer, ACM CSCW '24,	San José, Costa Rica
2024	Reviewer, ACM IDC '24,	Delft, Netherlands
2024	Program Committee, ACM FAccT '24,	Rio De Janeiro, Brazil
2023	Area Chair, Accessibility and Aging Track, ACM CHI '24,	Honolulu, USA
2023	Reviewer, ACM ASSETS '23,	New York, USA
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

Organizations and Departmental Service

Environmental Sustainability Committee
Wellesley College, Fall 2024 – Present
- Member of Advisory Board to Wellesley College on fostering a more sustainable and waste minimizing campus. Sub-committee focused on reducing dining hall waste.

WOC Faculty Mentoring Group
Wellesley College, Fall 2023 – Present
- Professional support/development group for tenure-track women of color at Wellesley.

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.

Graduate Committee and Graduate Student Association
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- 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.