

Raechel Walker

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in raechel-walker

Education

Massachusetts Institute of Technology **Cambridge, MA**
Ph.D. in Media Arts and Sciences *09/2023 - 05/2026*
Dissertation title: Crown vs a Question Mark: Integrating Critical Reflexivity into Responsible AI Principles

Massachusetts Institute of Technology **Cambridge, MA**
M.A. in Media Arts and Sciences *09/2021 - 05/2023*
Thesis title: Liberatory Computing: Empowering Students to Mitigate Systemic Oppression Data Activism

University of California, San Diego **San Diego, CA**
B.S. in Data Science *09/2017 - 06/2021*

Research Interests

I coined the framework "liberatory computing" to ensure that minoritized youth can leverage their computing skills to challenge systemic oppression. To bring this framework to life, I founded the Data Activism Program, which empowers youth, social justice organizations, AI developers, and data scientists with liberation tools and data science skills to advance equity-centered innovation. My research advances reflexivity as a unifying principle that strengthens the entire K-12-to-Workforce AI ecosystem, transforming how youth, professionals, and community organizers design and use AI.

Honors & Awards

2025: **Best Paper Award**, Research on Equity and Sustained Participation in Eng., Computing, and Tech.

2025: **MIT IDEAS Social Innovation Challenge (\$10k)**, MIT Priscilla King Gray Public Service Center

2025: **Research Conference Travel Grant (\$2k)**, MIT Graduate Student Council

2025: **NCWIT Aspirations in Computing Ambassador**, National Center for Women & Information Technology

2024: **ACM FAccT DEI 2024 Scholarship (\$15k)**, Conference on Fairness, Accountability, and Transparency

2024: **The Learning Engineering Tools Competition (\$300k)**, App Inventor Mobile Data Science Toolkit

2024: **Research Conference Travel Grant (\$2k)**, Black in Robotics

2024: **Research Conference Travel Grant (\$2k)**, MIT Graduate Student Council

2024: **Research Conference Travel Grant (\$2k)**, National Center for Women & Information Technology

2023: **MIT Presidential Fellowship (\$49k)**

2023: **Emerson Collective (\$100k)**

2023: **NextProf Pathfinder Workshop Participant**, University of Michigan Engineering

2022: **MIT Prize for Open Data (\$5K)**, MIT School of Science and the MIT Libraries

2022: **Best Paper Award**, Research on Equity and Sustained Participation in Eng., Computing, and Tech.

2022: **Amazon Robotics Day One Fellow (\$100k)**, Amazon Robotics

2021: **GEM PhD Fellow (\$16k)**, National Consortium for Graduate Degrees for Minorities in Eng. and Science

Conference Papers

In Review	Raechel Walker, Nashlie Sephus, Sandeep Avula, Matthew Monfort, Jamie Morgenstern, Max Ramsay, Xiaoxiao Liu, Mia Mayer. "My Work Is Mostly Technical": Tech Employees' Perspectives on Integrating Critical Reflexivity into Responsible AI Principles. <i>In review, 2025.</i>
EAAMO 2025	Raechel Walker, Brady Cruse, Aisha Cora, Kantwon Rogers, Cynthia Breazeal. Archaeology of Self: Reflexivity in Data Activism to Address Systemic Injustices. <i>ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization.</i>
RESPECT 2025	Raechel Walker, Brady Cruse, Aisha Cora, Cynthia Breazeal, Matthew Taylor. Redefining Data Science: Where Transformative Youth Organizing Meets Arts-Based Abolitionist Education. <i>ACM Conference for Research on Equitable and Sustained Participation in Engineering, Computing, and Technology.</i> 🏆 Best Research Paper Award
RESPECT 2024	Raechel Walker, Cynthia Breazeal, Matthew Taylor, Olivia Dias. Alleviating the Danger of a Single Story Through Liberatory Computing Education. <i>ACM Conference on Research in Equitable and Sustained Participation in Engineering, Computing, and Technology.</i>
BICE 2024	Raechel Walker, Sophia Brady, Olivia Dias, Adriana Castillo, Kaleb Asfaw, Elijah Johnson, Matt Taylor, Cynthia Breazeal. Unveiling Voices: African American Students' Data Activism Journey with Community Catalysts. <i>IEEE Black Issues in Computing Education Symposium.</i>
RESPECT 2022	Raechel Walker, Eman Sherif, Cynthia Breazeal. Liberatory Computing for African American Students. <i>ACM Conference on Research in Equitable and Sustained Participation in Engineering, Computing, and Technology.</i> 🏆 Best Position Paper Award
RO-MAN 2022	Anastasia K. Ostrowski, Raechel Walker, Madhurima Das, Maria Yang, Cynthia Breazeal, Hae Won Park, Aditi Verma. Ethics, Equity, & Justice in Human-Robot Interaction: A Review and Future Directions. <i>31st IEEE International Conference on Robot and Human Interactive Communication.</i>

Short Papers and Posters

These papers were peer-reviewed:

In Review	Raechel Walker, Brady Cruse, Maya Rajan, Aisha Cora, Raneem Alsoby, Isaac Kiniti, Kortni P. Foreman, Sophia Brady, Chase Vanias, Samira Shirazy, Saara Y. Uthmaan, (Data Activism Program Participants). DIAL-A-DATA ACTIVIST. <i>Arts Gallery & Performance Track, International Society of the Learning Sciences (ISLS).</i> <i>In review, 2025.</i>
AERA 2024	Raechel Walker, Cynthia Breazeal. Liberatory Computing Framework: Empowering High School Students to Mitigate Systemic Oppression Through Data Activism. <i>Perspectives on Promoting Algorithmic Justice in Artificial Intelligence and Machine Learning Education in K-12, American Educational Research Association.</i>
MIT SPR 2024	Raechel Walker, Daniella Dipaola. Dr. Casey Fiesler: Making Tech Ethics Go Viral. <i>MIT Science Policy Review.</i>
SIGCSE 2023	Raechel Walker. Systemic Justice Capstone Project: Enabling Students to Mitigate Systemic Oppression Through Data Activism. <i>Technical Symposium on Computer Science Education (ACM SIGCSE).</i>
SIGCSE 2023	Olivia Dias, Raechel Walker, Cynthia Breazeal. Teaching an Intersectional Data Analysis on Affirmative Action. <i>Technical Symposium on Computer Science Education (ACM SIGCSE).</i>

SIGCSE 2023	Zeynep Yalcin, Raechel Walker , Cynthia Breazeal. Intersectional Data Analysis of Gun Violence in Boston: Teaching Data Activism to Mitigate Systemic Oppression . <i>Technical Symposium on Computer Science Education (ACM SIGCSE)</i> .
EAAI 2023	Raechel Walker , Zeynep Yalcin, Olivia Dias, Matthew Taylor, Cynthia Breazeal. Introduction to the COMPAS Recidivism Algorithm . <i>Model AI Assignments, Proceedings of the Thirteenth Symposium on Educational Advances in Artificial Intelligence (EAAI)</i> . (Citation: EAAI paper & Curriculum: COMPAS Model AI Assignment) 🏆 Tied for Best Model AI Assignment
NeurIPS 2020	Raechel Walker and Rose Yu. Multiresolution Tensor Learning for Efficient and Interpretable Spatiotemporal Analysis . <i>AI for Earth Sciences Workshop at NeurIPS</i> .

Selected Press

MIT Media Lab	2025	<i>"The Data Activism Program: Empowering High School Students to Challenge Systemic Racism"</i>
Education Development Center	2025	<i>"Our Data Paths: Three Stories"</i>
MIT Spectrum	2024	<i>"Presidential Fellowship Moves Innovation and Research Forward"</i>
Alley's School	2024	<i>"Empowering Ethical Innovators"</i>
STEAMunity project	2024	<i>"STEAMunity interview with Raechel Walker on Data Activism"</i>
The Concord Bridge	2023	<i>"CCHS Students Learn Data Activism at MIT"</i>
CSK8 Podcast	2022	<i>"Liberatory Computing Education for African American Students"</i> — Podcast with Jared O'Leary
MIT News	2022	<i>"Empowering Cambridge Youth Through Data Activism"</i>

Exhibitions

Dial-A-Data Activist at Harvard College, 2025

Medium: Drawing, Film, Sound, Postcards, Interactive Installation

Participants: Data Activism Program — Brady Cruse (Engineering), Maya Rajan (Music; SoundCloud: Maya the DJ, Spotify: Maya and the Beat), Aisha Cora (Sound), Raneem Alsoby (Design), and **Raechel Walker** (Curator)

- The installation features retro rotary phones that play youth participants' recorded reflections on AI bias, race, and justice, accompanied by layered background music that amplifies the emotion and rhythm of their voices. By blending sound, storytelling, and visual design, the exhibit transforms elements of the Data Activism Program into an immersive art experience that highlights the creativity and critical insight of its participants.

Funded Grants

- 1. MIT IDEAS Social Innovation Challenge** 2025
"Liberatory Computing Collective"
Lead proposal writer: Raechel Walker
PI: Raechel Walker
Award Amount: \$10,000
- 2. The Learning Engineering Tools Competition** 2024
"The Mobile Data Science Toolkit"
Lead proposal writer: Robert Parks
PIs: Robert Parks, Perna Ravi, David Kim, Raechel Walker
Award Amount: \$300,000
- 3. ACM FAccT 2024 Diversity, Equity, and Inclusion (DEI) Scholarship** 2024
"Liberatory Computing: Empowering Minoritized Communities through Data Activism"
Lead proposal writer: Raechel Walker
PIs: Cynthia Breazeal & Raechel Walker
Award Amount: \$15,000
- 4. MIT Sea Grant Award** 2024
"2024 Data Activism Program with MIT FutureMakers"
Lead proposal writer: Raechel Walker
PIs: Cynthia Breazeal & Raechel Walker
Award Amount: \$5,500
- 5. Emerson Collective Grant** 2023
"2023 Data Activism Program"
Lead proposal writer: Cynthia Breazeal & Raechel Walker
PIs: Cynthia Breazeal & Raechel Walker
Award Amount: \$100,000
- 6. Jaylen Brown's Juice Foundation Grant** 2023
"2023 Data Activism Program"
Lead proposal writer: Cynthia Breazeal & Raechel Walker
PIs: Cynthia Breazeal & Raechel Walker
Award Amount: \$3,000
- 7. MIT Prize for Open Data** 2022
"2022 Data Activism Program"
Lead proposal writer: Raechel Walker
PIs: Cynthia Breazeal & Raechel Walker
Award Amount: \$2,500

Invited Presentations

- MIT Priscilla King Gray Public Service Center, Invited Talk** Oct 2025
- Harvard College, Panelist** Oct 2025
Intercollegiate Summit of Undergraduate Generational African-Americans
- Amazon Research, Invited Talk** July 2025
"Archaeology of Self™: Reflexivity in Data Activism to Address Systemic Injustices"
- MIT Horizon, Invited Talk** June 2025
"Empowering Future Professionals Through Data – Rethinking Computing Education for Real-World Impact"

MIT Graduate Pathways with the McNair Scholars, Panelist	May 2025
MIT Mondays, Panelist "A Journey to Graduate School"	April 2025
Coolidge Corner Theatre Foundation, Invited Talk "Youth Data Activism for High School Students in Boston"	Feb. 2025
New York University, Guest Lecture "Diversity and Technology"	Dec. 2024
Young Visionary Leaders Conference at Northeastern University, Invited Talk "Youth Data Activism for Young Men of Color"	Nov. 2024
MIT Introduction to Technology, Engineering, and Science (MITES), Panelist "Inspiring Journeys in STEM"	Oct. 2024
MIT Graduate Pathways with McNair Scholars, Panelist	Oct. 2024
MIT AI + Education Summit, Invited Speaker "The Importance of Data Activism in AI Education"	Aug. 2024
Google and MIT, Invited Speaker "Liberatory Computing for African American Students"	Aug. 2024
MIT FutureMakers, Industry Expert Speaker "Data in Action: Inspiring Youth to Become Data Activists"	July 2024
MITES Saturdays Symposium, Keynote Speaker "Faith, Research, and Justice: My Journey Toward Liberatory Computing"	May 2024
American Educational Research Association, Poster Presenter "Perspectives on Promoting Algorithmic Justice in Artificial Intelligence and Machine Learning Education in K-12"	Apr. 2024
Innovators For A Purpose, Panelist "Unlocking AI's Potential for All"	Mar. 2024
MIT FutureMakers, Industry Expert Speaker "Data in Action: Inspiring Youth to Become Data Activists"	July 2023
Amazon Robotics Day One Fellowship, Summit Panelist "Pathways to the PhD: My Journey to MIT"	July 2023
MIT GradCatalyst, Panelist	Nov. 2023
Early Research Scholars Program, National Conference Keynote Speaker	Oct. 2023
Computer Science Teachers Association, Summit Speaker "Impacts of Computing"	Oct. 2023
MIT GradCatalyst, Panelist	Oct. 2023
SIGCSE Best RESPECT Papers Session, Invited Talk "Liberatory Computing for African American Students"	Feb. 2023
Jaylen Brown's 7uice Foundation, Invited Talk "Systemic Justice Capstone Project: Enabling Students to Mitigate Systemic Oppression Through Data Activism"	Feb. 2023
Emerson Collective, Invited Talk "Systemic Justice Capstone Project: Enabling Students to Mitigate Systemic Oppression Through Data Activism"	Feb. 2023
Georgia Tech Graduate School Showcase, Panelist	Oct. 2022
MIT EverydayAI Make-a-thon, Invited Talk	March 2022

"Liberatory Computing for African American Students"

MIT GradCatalyst, Panelist

Oct. 2021

Research Experience

Massachusetts Institute of Technology

GRADUATE STUDENT RESEARCHER

Sept. 2021 – Present

Cambridge, MA

- Created and taught over 120 hours of data activism curricula(linked here), combining Critical Participatory Action Research with AI, for 70 high school and college students over three years.
- Established and maintained seven partnerships with social justice organizations, including the Algorithmic Justice League, focusing on issues such as algorithmic bias, mass incarceration, environmental injustice, while ensuring that research amplified the voices of minoritized communities.
- Coined the term “liberatory computing” and won 2 **Best Paper Awards** at RESPECT.

Harvard University

GRADUATE STUDENT RESEARCHER

May 2025 – Present

Cambridge, MA

- Conducted an extensive literature review with Dr. Aaliyah El-Amin examining racial disparities in academic and research career pathways, focusing on (a) representation of people of color (POC) in research fields, (b) perceptions of research as a discipline or career among POC, (c) the impact of exposure to critical qualitative methodologies on POC’s experiences, and (d) how traditional epistemologies in research may marginalize or shape POC’s engagement with scholarly inquiry.

Amazon Web Services (Themis Responsible AI Team)

RESEARCH SCIENTIST INTERN

June 2025 – Sept 2025

Atlanta, GA

- Pioneering the integration of a new Responsible AI (RAI) Principle, Reflexivity, or the critical self-examination of bias, into Amazon’s RAI Best Practices, including the development of original training materials for company-wide use across AWS.
- Investigating how to embed reflexivity into RAI workflows by collaborating with Amazon engineers to assess whether structured prompts that encourage reflexive thinking enhance fairness-related risk evaluations in high-stakes applications, such as facial recognition.

Amazon Robotics

FELLOW INTERN

June 2022 – Aug. 2022

Cambridge, MA

- Developed the first Data Activism Program, engaging 12 students who used data science to address systemic injustice. The students showcased their data activism projects to the Mayor of Cambridge.

National Renewable Energy Laboratory

ARTIFICIAL INTELLIGENCE INTERN

June 2021 – Aug. 2021

Virtual

- Pioneered the identification of AI best practices to address bias in AI within the Building Technology Office.

Teaching & Mentoring Experience

Course Creator & Teacher, Data in Action

MIT Media Lab

Cambridge, MA

Spring 2026

- Designed and will teach a Google PATH-funded Data Science and Algorithmic Auditing course at MIT that integrates technical data analysis with ethical reflection on AI systems. Developed the lesson “LLM Auditing,” which introduces how large language models shape everyday experiences. Students learn manual text coding;

Python and Pandas for sentiment analysis; small language model based AI-assisted coding; and how to critically assess the bias of algorithmic decision-making.

Course Creator & Teacher, Data Activism Program
MIT Media Lab

Cambridge, MA and Virtual
Summer 2022, Spring 2023, Summer 2024

- Designed and taught a six-week intensive course on data activism and large-scale data analysis to mitigate systemic injustice (Python, data visualization, AI fairness metrics, Critical Participatory Action Research) to 70 college and high school students. Syllabus linked here.
- Supervised undergraduate and graduate students on real-world data science projects.
- Started and coordinated collaborations with 7 organizations, including the Vera Institute of Justice, Algorithmic Justice League, MIT Sea Grant, AfroPink, Food Link, Habitat for Humanity, Charles River Watershed Association.

Research Mentor

Lead research advisor for over 16 undergraduate researchers

Summer 2022 – present

(★ = co-authored a publication, ⚡ = pursuing a Master's)

- Brady Cruse★ (Undergraduate, MIT; Summer 2024 – present)
- Aisha Cora★(Undergraduate, University of Washington; 2024–present)
- Sophia Brady★⚡(Undergraduate, Boston College; Summer 2022– Winter 2024)
- Elijah Johnson★ (Undergraduate, MIT; Spring 2023– Spring 2024)
- Samira Shirazy (Undergraduate, University of Washington; Summer 2024)
- Saara Uthmaan (Undergraduate, University of Washington; Summer 2024)
- Eghosa Ohenhen (Undergraduate, MIT; Summer 2024)
- Chase Vanias (Undergraduate, MIT; Summer 2024)
- Isaac Kinti (Undergraduate, MIT; Summer 2024)
- Kortni Foreman (Undergraduate, MIT; Summer 2024)
- Olivia Dias ★⚡(Undergraduate, MIT; Summer 2022–Spring 2024)
- Zeynep Yalçın★ (Undergraduate, Wellesley College; Summer 2022– Spring 2023)
- Kaleb Asfaw ★ (Undergraduate, MIT; Spring 2023)
- Lian Liu★ (Undergraduate, Wellesley College; Spring 2023)
- Sneha Sriram★ (Undergraduate, Wellesley College; Spring 2023)
- Lina Henriquez (Undergraduate, Florida International University; Summer 2022)

Service

Leadership Positions

- Graduate Resident Assistant Aug. 2023 – Present
Facilitate community building for undergraduate students through weekly events, conflict mediation, and resource provision at MIT.
- MIT Graduate Diversity Ambassador Oct. 2021 – Present
Address questions at diversity recruitment conferences and volunteer for MIT GradCatalyst sessions, leading workshops to assist undergraduates in understanding the graduate application process.
- Chair, MIT AI & Education Summit Spring and Summer 2025

Volunteering

- Decolonizing STEM Working Group, EAAMO Present
- Submission Reviewer, CHI (ACM Conference on Human Factors in Computing Systems) Present
- Submission Reviewer, MIT AI & Education Summit 2025
- Student Volunteer, AI Career Pathways at Community Colleges Summit 2025

Skills & Research Methods

Technical Skills.....

- Python (core language for AI/ML work)
- pandas, NumPy, SciPy (data manipulation and analysis)
- scikit-learn (classical ML algorithms)
- PyTorch / TensorFlow / Keras (deep learning frameworks)
- Jupyter Notebook (prototyping and reproducible workflows)
- Data analysis & wrangling
- Data visualization
- SQL (databases & querying)
- Human-centered AI evaluation

Research Methods.....

- Mixed methods
- Design-based research
- Workshops
- Interviewing protocols
- Surveys
- Prototyping
- Co-design
- Thematic analysis
- Experimental design
- Building sustainable research partnerships
- Conducting research with minoritized communities