

PRERNA RAVI

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EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY | CAMBRIDGE, MA

Ph.D., Electrical Engineering and Computer Science (EECS) | 2022 - Present

- MIT Computer Science and Artificial Intelligence Laboratory (CSAIL)
- Advisor: Hal Abelson
- Mentors: Michiel Bakker (MIT Sloan), Cynthia Breazeal (MIT Media Lab), Eric Klopfer (MIT CMSW)

S.M., Electrical Engineering and Computer Science (EECS) | 2022 - 2024

- Thesis: *Large Language Model Tools for Project-Based Learning* [[link](#)]

GEORGIA INSTITUTE OF TECHNOLOGY | ATLANTA, GA

B.S., Computer Science | 2018 - 2022

- Advisors: Thad Starner and Neha Kumar
- GPA: 4.0 / 4.0 (Highest Honors)
- Thesis: *Leveraging Sign Language Recognition in Educational Games for Deaf Children*

RESEARCH STATEMENT

My research explores how AI systems can support effective **group collaboration** and **deliberation** across diverse settings. I investigate discourse and team dynamics to design frameworks that scaffold equitable team participation, foster group trust and connection, and facilitate consensus-building in civic contexts. These insights inform applications in **education**, **creative practice**, and **democratic decision-making**. In parallel, I develop **AI and data literacy** programs for policymakers, educators, learners, and community org leaders—empowering them to critically engage with generative AI as both responsible creators and informed users.

Situated at the intersection of **Human-Computer Interaction (HCI)** and **Artificial Intelligence (AI)**, my work employs mixed methods experiments—combining qualitative and quantitative approaches—and spans participatory design, system development, and empirical evaluation.

INDUSTRY RESEARCH INTERNSHIPS

Microsoft, Design Researcher Intern | *May 2023 – August 2023*

Co-designed generative AI tools *with and for* neurodivergent and motor disability groups within Microsoft's Windows + AI UX research team.

Google, Student Researcher Intern | *January 2022 – April 2022*

Developed new fingerspelling datasets and models for sign language recognition and integrated those into educational games for deaf children born to hearing parents. Advised by [Dr. Thad Starner](#).

Google Research Blog at I/O 2023: [Technologies for inclusive and fair ML applications](#) | [YouTube Video](#)

SOFTWARE ENGINEERING INTERNSHIPS

Microsoft, Software Engineer Intern | *May 2022 – July 2022*

Built an end-to-end Office 365 Extension for Microsoft's Artifact Management System with ML-based recommendations, used for onboarding all legal matters (involving law firms for example), their stakeholders and documents into the Office 365 Infrastructure (used by 220,000 employees).

Microsoft, Software Engineer Intern | *May 2021 – July 2021*

Developed new intelligent solutions and microservices for the Office 365 Enterprise Records Management System used for storing, migrating, and retrieving 6M+ regulatory, legal, and business-critical electronic records spanning 100 countries for 160K+ employees. Trained ML models to automatically categorize records and extract their metadata.

Microsoft, Software Engineer Intern | *May 2020 – July 2020*

Designed a centralized telemetry service and data dashboards (for web platforms used by internal consultants tracking their projects and finances) to assist debugging and product improvement, thereby directly impacting 5000+ users.

PUBLICATIONS

Journal Papers

[J1] **Perna Ravi***, Dong Won Lee*, Emma Anderson, and Grace C. Lin. "Leveraging Large Language Models to Identify Conversation Threads in Collaborative Learning." *In submission: Journal of Educational Data Mining (JEDM) 2025*.

[J2] Ariel Blobstein, Marc T. Facciotti, Michele Igo, David Karger, **Perna Ravi**, Kamali Sripathi, and Kobi Gal. "[#let's-discuss: Analyzing Students' use of Emoji when interacting with course readings](#)". *Intl. Journal of Artificial Intelligence in Education (IJAIED) 2024*.

Peer-Reviewed Conference Papers

- [C1] **Prerna Ravi**, John Masla, Gisella Kakoti, Grace Lin, Emma Anderson, Matt Taylor, Anastasia Ostrowski, Cynthia Breazeal, Eric Klopfer, and Hal Abelson. [“Co-designing Large Language Model Tools for Project-Based Learning with K12 Educators.”](#) *Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI 2025)*. 🏆 **Honorable Mention (Top 5%)**.
- [C2] Isabella Pu, **Prerna Ravi**, Linh Dinh, Chelsea Joe, Caitlin Ogoe, Zixuan Li, Cynthia Breazeal, and Anastasia Ostrowski. [“How can we learn and use AI at the same time?: Participatory Design of GenAI with High School Students.”](#) *Proceedings of the ACM Interaction Design and Children (IDC 2025)*.
- [C3] Grace Lin, Carúmey Stevens, Amalia Toutziaridi, **Prerna Ravi**, and Emma Anderson. [“ABCDE: An Action-Oriented Framework for Collaborative Activities.”](#) *Proceedings of the 18th International Conference on Computer-Supported Collaborative Learning (CSCL 2025)*
- [C4] Mak Ahmad, **Prerna Ravi**, David Karger, Marc Facciotti, and Kwan-Liu Ma. [“Beyond AI Feedback: How Metacognitive Requirements in Practice Exams Transform Student Learning Behaviors.”](#) *Proceedings of the 12th ACM Conference on Learning @ Scale (L@S 2025)*.
- [C5] John Masla, Christina Bosch, **Prerna Ravi**, Lydia Guterman, Sarah Wharton, Mary Cate Gustafson-Quiett, Samar Abu Hegly, Calvin Macatantan, Eric Klopfer, Cynthia Breazeal and Hal Abelson. [“Supporting AI Fluency Teaching Through the Development of Assessments for Classroom Use.”](#) *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI 2025)*.
- [C6] **Prerna Ravi**, Robert Parks, John Masla, Hal Abelson, and Cynthia Breazeal. [“Data comes from the real world”: A Constructionist Approach to Mainstreaming K12 Data Science Education”.](#) *Proceedings of the ACM Virtual Global Computing Education Conference V.1 (SIGCSE Virtual 2024)*.
- [C7] Safinah Ali, **Prerna Ravi**, Katherine Moore, Hal Abelson, and Cynthia Breazeal. [“A Picture is Worth a Thousand Words: Co-designing Text-to-image Generation Learning Materials for K-12 with Educators”.](#) *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI 2024)*.
- [C8] Safinah Ali, **Prerna Ravi**, Daniella DiPaola, Randi Williams, and Cynthia Breazeal. [“Constructing Dreams using Generative AI”.](#) *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI 2024)*.
- [C9] David Kim, **Prerna Ravi**, Randi Williams, and Daeun Yoo. [“App Planner: Utilizing Generative AI in K-12 Mobile App Development Education”.](#) *Proceedings of the ACM Interaction Design and Children (IDC 2024)*.
- [C10] **Prerna Ravi**, Annalisa J. Broski, Glenda Stump, Hal Abelson, Eric Klopfer, and Cynthia Breazeal. [“Understanding Teacher Perspectives and Experiences after Deployment of AI Literacy Curriculum in Middle-school Classrooms”.](#) *Proceedings of the 16th annual International Conference of Education, Research and Innovation (ICERI 2023)*, IATED 2023.
- [C11] Alex Duncan, Ana Rusch, **Prerna Ravi**, and David Joyner. [“The L@St Eight Years: A Review of Papers and Authors at Learning @ Scale”.](#) *Proceedings of the 10th ACM Conference on Learning @ Scale (L@S 2023)*.
- [C12] **Prerna Ravi**, Azra Ismail, and Neha Kumar. [“The Pandemic Shift to Remote Learning under Resource Constraints”.](#) *Proceedings of the ACM on Human-Computer Interaction (CSCW 2021)*.
- [C13] Dhruva Bansal, **Prerna Ravi**, Matthew So, Pranay Agrawal, Ishan Chadha, Ganesh Murugappan, and Colby Duke. 2021. [“CopyCat: Using Sign Language Recognition to Help Deaf Children Acquire Language Skills.”](#) *Extended Abstracts of the CHI Conference on Human Factors in Computing Systems (CHI 2021)* 🏆 **ACM CHI Student Research Competition Winner 2021**

Short Papers and Organized Workshops

- [S1] **Prerna Ravi**, Annalisa J. Broski, Glenda Stump, Angela Daniel, Hal Abelson, Eric Klopfer, and Cynthia Breazeal. [“An Art Teacher and AI: Creating Adaptable Curriculum for AI Literacy”.](#) *Play Make Learn Conference (PML 2023)*.
- [S2] Safinah Ali, **Prerna Ravi**, Katherine Moore, Cynthia Breazeal, and Hal Abelson. [“Demystifying Text-to-Image Generation for K12 Educators.”](#) *In Workshops and Tutorials: International Society of Learning Sciences (ISLS 2023)*.
- [S3] Glenda Stump, **Prerna Ravi**, Annalisa J. Broski, Angela Daniel, Hal Abelson, Eric Klopfer, and Cynthia Breazeal. [“Ethical by Design: Teaching Middle-school Students to Think Ethically About AI”.](#) *AI Literacy Workshop at the CHI Conference on Human Factors in Computing Systems (CHI 2023)*.

GRANTS

- Empowering Learners with a Low-Barrier Mobile Data Science Toolkit | **Award amount: \$300,000**
 - Learning Engineering Tools Competition, 2024
 - **Prerna Ravi** (Lead researcher and proposal writer), Robert Parks, Raechel Walker, David Kim, Hal Abelson (PI)

FELLOWSHIPS

- Teaching Development Fellow, Teaching and Learning Lab (TLL) MIT, 2024-2025
- Artificial Intelligence in Education (AIED) DEIA Fellow, 2024-2025 (w/ Prof. Victor Lee, Stanford GSE)
- MIT CIS/Starr Student Travel Fellow, 2024 (UNESCO HQ speaker)
- MIT Work of the Future Fellow, 2023-2024
- Ida M. Green Memorial Fellow, 2022-2023
- MIT Vice Chancellor’s Inclusive Excellence Fellow, 2022-2023
- Adobe Research Women in Technology Scholar, 2021

AWARDS

- Best Paper Honorable Mention (top 5% of submissions), CHI 2025
- MIT Graduate Student Council (GSC) Travel Grant, 2025
- Winner - Learning Engineering Tools Competition, 2024
- Special Recognition for Outstanding Reviews, CHI 2024
- Kaufman Teaching Certificate, 2024
- Winner - ACM CHI Student Research Competition, 2021
- Georgia Tech Outstanding Junior (EDS Rising Senior) Award, 2020-2021
- Georgia Tech Outstanding Sophomore Award, 2019-2020
- Google Computer Science Research Mentorship (CSRMP), 2021
- President's Undergraduate Research Award (PURA), 2020
- Apple Women in Science and Engineering Scholarship, 2021
- Georgia Tech Faces of Inclusive Excellence Honoree, 2021
- Microsoft Invent Finalist, 2021
- Winner - Nunn School of International Affairs Paper Competition for Global Development, 2021
- Rewriting the Code Fellowship, 2020-2021
- Apple's Grace Hopper Conference Scholarship, 2020
- Honorable Mention, Microsoft Global Hackathon, 2020
- GT College of Computing Grace Hopper Conference Scholarship, 2019
- Faculty Honors for 4.0 GPA, 2018-2022

SERVICE AND NON-PROFIT WORK

- **Organizing Committee** (Global co-chair), CHI 2026
- **Organizing Committee** (Diversity and Inclusion co-chair), UIST 2024
 - Introduced a new category of best paper awards to UIST for those fostering *Belonging and Inclusion* in the HCI community, organized diversity lunches for women and LGBTQ+ participants, spearheaded a panel of women leaders in HCI, and organized travel awards to support historically marginalized groups
- **Student Volunteer**, CHI 2025
- **Program Committee** (Associate Chair), CHI 2025: Late Breaking Work [10 reviews]
- **Program Committee** (Senior reviewer), ISLS 2025 [5 reviews]
- **Program Committee** (Associate Chair), CSCW 2024 [4 reviews]
- **Program Committee**, MIT AI + Education Summit 2024 [10 reviews]
- **Reviewer**, CHI 2024, 2025 [2 reviews] [Special Recognition for Outstanding Reviews](#)
- **Reviewer**, Journal of Education, 2025 [1 review]
- **Reviewer**, JMIR Applications of AI, 2024 [1 review]
- **Reviewer**, ACM Designing Interactive Systems (DIS) 2023 [1 review]
- **Feature Editor**, ACM XRDS Magazine, 2025 - Present
- Tech Vetter, MIT Solve Global Learning Challenge, 2024
- Workshops and Outreach, App Inventor Foundation
- Founder and President, UNICEF @ Georgia Tech, 2018-2022
- Executive Project Lead, CS + Social Good @ Georgia Tech, 2019-2022
- Training Manager, Robogals @ Georgia Tech, 2019-2020

TEACHING

Designed curricula and co-led instruction for the following courses:

Instructor	6.S062 Generative Artificial Intelligence In K-12 Education Massachusetts Institute of Technology, Fall 2023. Enrollment: MIT & Harvard graduate and undergraduate students
Instructor	MAS.SX Text-to-Image Generation for K-12 Education Massachusetts Institute of Technology, IAP 2023. Enrollment: MIT & Harvard graduate and undergraduate students, MIT staff
Instructor	Impact and Application of Generative Artificial Intelligence within Education (Module on Text-to-image Generation) IEEE Education Society hosted by Universidad Nacional de Educación a Distancia (UNED), Fall 2023 Massive Open Online Course (MOOC)
Head Teaching Assistant	CS 1331 Introduction to Object Oriented Programming Georgia Institute of Technology, Spring 2019 – Fall 2021.

	Enrollment: GT undergraduate students
Curriculum Developer	Environmental Data Collection and Analysis using Micro:bits Day of AI, 2024. Enrollment: Middle and high school teachers & students
Instructor + Curriculum Developer	Data Science and AI with Micro:bits and MIT App Inventor MIT Futuremakers Program 2024 Enrollment: Middle and high school students
Instructor	Human Centered Design Code.X, Summer 2021. Enrollment: Middle and high school students

SELECTED TALKS

- **Large Language Model Tools for Project-based Learning**
Lifelong Kindergarten Group, MIT Media Lab
- **Democratizing K12 Data Science Education through Student-Centered Interdisciplinary Curricula**
[UNESCO's Digital Learning Week 2024](#), held at UNESCO Headquarters, Paris
- **The Future of Generative AI in Higher Education**
81st Annual Conference of Louisiana Colleges & Universities (CLCU) 2024
- **How Might We Redefine Learning in the Age of AI?**
Center for Constructive Communication (CCC), MIT Media Lab
- **AI is for Everyone: Transforming K-12 Learning and Education in the Era of AI**
Center of Excellence in Teacher Education (CETE) at Tata Institute of Social Sciences (TISS), Mumbai, India
- **PopSign: Mobile Games to teach Sign Language**
Imagine RIT 2022, Rochester, NY