Abigail Brooks-Ramirez

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Education

University of California, Berkeley August 2025 – May 2026
M.S. in Electrical Engineering & Computer Science *Berkeley, CA*

University of California, Berkeley August 2021 – May 2025
Bachelor of Arts in Computer Science, Minor in Ethnic Studies *Berkeley, CA*

Publications

A. Brooks-Ramirez, R. Dang, B. Adolfo Ventura Benitez, and L. Yan, "Scaling Responsible Data Science Education: The Role of a Teaching Assistant in Bridging the Sociotechnical Divide (ASEE 2025 - Papers)," ASEE 2025

A. Brooks-Ramirez and L. Yan, "By and for Teaching Assistants: Homegrown Tools in Computing Classrooms (SIGCSE TS 2026 - posters)," SIGCSE TS 2026

K. Patel, **A. Brooks-Ramirez**, R. Dang, B. Adolfo Ventura Benitez, and L. Yan, "Exploration of Undergraduate Teaching Assistant Identity and Teaching Goals in Data Science Courses (SIGCSE TS 2025 - posters)," SIGCSE TS 2025

Awards & Scholarships

Outstanding Graduate Student Instructor Award 2025
UC Berkeley EECS Department

National GEM Consortium Employee Fellow 2025
Sponsored by IBM

Research Experience

Design Processes in Educational Technology May 2025 – Present
UC Berkeley *Berkeley, CA*

- Conducting HCI research on the design processes, adoption, and classroom impacts of homegrown educational technologies in UC Berkeley computing courses; results will inform M.S. thesis on educational technology design
- Examining the efficacy of utilizing LLMs to automate portions of the documentation writing process

TA Pedagogy November 2023 – May 2025
UC Berkeley *Berkeley, CA*

- Examined the impact of a culturally responsive pedagogy training course for Data and Computer Science TAs under Professor Lisa Yan; work consolidated in SIGCSE poster & ASEE paper
- Performed thematic qualitative coding and conducted quantitative analysis techniques in Python, Numpy, and Seaborn, to evaluate TA's teaching identities and pedagogical methods
- Attended lectures to record ethnographic field notes, designed surveys, conducted interviews with TAs, drafted protocols for Berkeley's Institutional Review Board, and managed research data

Work Experience

Software Engineering Intern May 2025 – August 2025
IBM *San Jose, CA*

- Contributed to the development of the first version of the DB2 Assistant, an agentic AI system that leverages LangGraph and internal tools to troubleshoot user queries based on their DB2 instance context
- Engineered automated testing scripts, added persistent memory for context-aware agents, and expanded the system with new tools for deeper troubleshooting capabilities
- Managed and improved the internal testing UI by updating endpoints for smoother production integration and enhancing the interface to better support team testing needs

Software Engineering Intern May 2023 – August 2023
Spotify *New York, NY*

- Built and deployed a cross-project messaging service to detect and suspend fraudulent accounts, notify the payments team, and monitor fraud metrics, leveraging Java, Google Pub/Sub, and gRPC for cross-platform communication

Codebase: Student Contractor January 2022 – June 2023

UC Berkeley *Berkeley, CA*

- *Etsy:* Managed and supported the construction of two services authored in GoLang and Typescript using gRPC requests to handle file uploads to Google Cloud Storage and PDF-to-image conversion; the services worked in tandem with the eventual goal to replace Etsy's outdated image upload pipeline
- *Magnopus:* Implemented an interactive augmented reality iOS application that projected 3D mutable and scalable renditions of objects into extended reality space using Swift, Apple ARKit, and RealityKit. Prototyped Hockney Mode, which used LiDAR data from 2D images to reconstruct a 3D rendition of the photographed object
- *Berkeley Food Pantry:* Developed a full-stack web and mobile app to manage inventory, appointments, and stock. Designed a database schema for tracking data and implemented REST API request handling

Teaching Experience

CS195: Social Implications of Computer Technology Fall 2025

UC Berkeley

- Managed administrative tasks and assignments for a course of over 150 students; taught Honors discussion section

CS375: Teaching Techniques for Computer Science Fall 2025

UC Berkeley

- Managed administrative tasks and occasionally lectured for a required pedagogy course for first time TAs

Data C104: Contexts & Ethics of Data Fall 2024, Spring 2025

UC Berkeley

- Managed three discussion sections (around 80 students total) each semester, assisted with curriculum development to embed computing ethics into technical courses, created and maintained website for course (data104.org)

CS61B: Data Structures Spring 2024

UC Berkeley

- Taught discussion section, staffed office hours, assisted with "student support" meetings for students in distress, and designed first ever Diveristy, Equity, & Inclusion training for teaching staff

CS61A: Structure & Interpretation of Computer Programs Fall 2022, Spring 2023, Fall 2023

UC Berkeley

- Staffed office hours, taught discussion section, created course content (such as discussion walkthrough videos)

Leadership & Community Involvement

Diversity, Equity, & Inclusion Chair January 2023 – January 2024

Computer Science Mentors *Berkeley, CA*

- Spearheaded community outreach, establishing partnerships with other UC Berkeley organizations to host review sessions and community events for underrepresented students in STEM, created the DEI Newsletter to connect marginalized students in computing to opportunities — as of Jan. 2024, newsletter had over 300 subscribers
- Implemented *Affinity Sections*, tutoring sections for students from shared backgrounds, and created guidelines for leading Affinity Sections; organized priority enrollment and wellbeing events for Affinity Sections

Student Mentor January 2024 – May 2024

Berkeley Anova *Berkeley, CA*

- Mentored students from underserved middle and high schools through a weekly after-school computer science education program, ensure classrooms are equitable and inclusive for all students to lower barriers into STEM

Student Mentor June 2022 – May 2023

Navigating Cal *Berkeley, CA*

- Mentored a cohort of 2-3 students from underrepresented backgrounds in higher education to support them in their courses and connect them with campus resources

Presentations

Enhancing Pedagogy in Teaching Assistant Training May 2024

UC Berkeley Teaching & Learning Conference

Technical Skills

Languages: Python, Java, C, React, JavaScript, Typescript, HTML/CSS, SQL, NoSQL, Swift, MatLab
Tools/Frameworks: Node.js, Vite, JUnit, Postman, PostgreSQL, gRPC, REST APIs, Git, Docker, GCP, VS Code, XCode, IntelliJ, Maven, Kubernetes, Docker, Figma, Vim, Bash, Pandas, Seaborn, HuggingFace, CVX
Relevant Coursework: Data Structures, Discrete Math & Probability Theory, Database Systems, Computer Architecture, Machine Learning, Optimization Models, Natural Language Processing, Internet Architecture & Protocols, User Interface & Design, Principles of Data Science, Programming Languages & Compilers, Computer Graphics