In 2020, only 21% of doctoral degrees in computer science in the United States were awarded to women, less than 2% were awarded to Hispanic or Latino students, and only 1% were awarded to Black or African American students [1]. Worse still, these percentages have remained static compared to 2010 [2]. As a computer science student myself, these statistics trouble me deeply. I kept thinking about the reasons behind these disturbing statistics and asking myself what I could do to make a difference.

I think two factors play a role in these statistics. First, underrepresented groups face significant barriers to entry into the field of computer science due to lack of exposure and opportunity. For example, high-minority schools are twelve times less likely to offer Advanced Placement (AP) Computer Science than low-minority schools in California [3]. Second, even once in the field, underrepresented groups face significant challenges in succeeding and advancing due to barriers such as social stereotyping and lack of mentors. To improve diversity in my field, I am committed to supporting underrepresented groups in two ways: first, by supporting early exposure to computer science for underrepresented groups to make sure they don't disappear early in the pipeline; and second, by being an active mentor and ally to underrepresented groups once they are in the field, to help them navigate the challenges they face and succeed in spite of them.

My Past Initiatives for Diversity, Equity, and Inclusion

Teaching AP CS at Revere High School Underrepresented students are disproportionately less likely to have access to computer science education [3]. To help address this problem, I taught an AP Computer Science course at Revere High School **for a year** through a Microsoft Philanthropies program. Revere High School is a public school with 65% Hispanic or Black students. I taught half of the students, created problem sets, and graded assignments with another instructor. One thing I didn't realize before teaching this class was that most of my students didn't know what computer science was or what it meant to be a computer scientist. Most of them took the class because they wanted to learn more about engineering or STEM. Therefore, I created an optional class to share with them my journey through computer science and how computer science is used in my current research on natural language processing, which was well-received by my students. The experience was a great reminder for me that computer science is still an unfamiliar field for many people, and that it is my responsibility as a computer science researcher to help increase awareness of the field and make it more accessible. One of my students from an underrepresented group got admitted to Brown University – I was thrilled to have played a small part in his success.

Serving as a Mentor at Harvard WiCS Committed to increasing the representation of women in computer science, I have served as a mentor at Harvard Women in Computer Science (WiCS) for two years. In this role, I have **initiated** a reading group that meets **every two weeks since 2020** to discuss research papers together. Preference is given to papers authored by women and scientists of other minority groups in order to uplift their voices in our field and provide role models for my mentees. I also offer general academic and career advice and share information about upcoming conferences, courses, and collaboration and fellowship opportunities. I am very proud that **two of my mentees have decided to pursue a Ph.D. degree**.

Serving on the D&I Team at NAACL 2022 Students with children, especially single mothers, face unique financial and time management challenges in academic settings [4]. To help student parents, I served as the **Childcare Chair on the Diversity & Inclusion (D&I) committee** at a conference (NAACL 2022). My goal is to make academic conferences more accessible for student parents. I surveyed the childcare needs of attendees, managed a subsidy program that subsidized all applicants, set up a childcare room with essential facilities during the conference, and organized a social hour for parents to connect. In this process, I learned a lot about the obstacles faced by student parents to attend conferences. For example, I noticed that due to Covid, many childcare providers suspended their temporary/backup care program even though their websites didn't explicitly say so, and as a result, many student parents could not come to the conference even with a subsidy. Therefore, I reached out to all childcare providers in Seattle (where the conference was held) and listed on our website the only two that still offered short-term childcare services. I find it extremely rewarding when people talk about their children having a great time at this conference.

Mentoring Underrepresented Students I have also mentored three undergraduate and graduate students from underrepresented groups. I provide career advice, help with research, and connect them with resources and opportunities. One of my mentees has been admitted to the Ph.D. program at Stanford, and another has recently submitted a first-author paper to a top conference.

Other Efforts I have helped prepare the materials for two labs in the Break Through Tech AI program, which prepares college women and nonbinary students for a career in the tech industry. I have also served as the leader of the Harvard English Language Table to help international students overcome language barriers since Sep 2021.

My Future Plans for Diversity, Equity, and Inclusion

Through my involvement in various diversity initiatives, I have seen first-hand how important it is to foster a supportive and inclusive community for all students to grow and thrive in computer science. I am proud to have played a role in creating such a community and hope to continue supporting diversity as a professor in the future.

As a professor, I plan to improve diversity in my field in three directions. First, I will continue my work on supporting early computer science education in high-minority communities through outreach programs or community partnerships. I will use my experience in teaching AP CS to develop outreach programs at local high schools to improve the exposure and access to the field of computer science for minority students. Second, I will try to mentor a diverse body of students/postdocs. For example, I will provide research and career mentorship to minority undergraduate students at my university, and I will also present my research at high-minority colleges and motivate students there to apply to graduate programs. Third, I will encourage my mentees to take the lead in addressing the diversity issues in my field. I will share with my students the lessons I have learned through my experiences to help them become effective mentors/allies. With these efforts, I aim to build a supportive and inclusive community in my research group where everyone can feel comfortable and valued and thrive in their work.

References

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