According to the 2019 Taulbee Survey, only 3.1% of the computer science (CS) Ph.D. awarded in the US went to students from underrepresented racial or ethnic groups in CS, and 20.3% went to women. Yet, according to the 2010 US census, 29.8% of the US population are from the underrepresented ethnic groups in CS, and 50.8% of the population are women. This imbalance between the percentage of Ph.D. awarded and the percentage of the US population for the groups mentioned shows a clear lack of diversity in CS. Given the broad importance of CS research, it is particularly crucial that the CS researcher population represent all experiences and perspectives.

I have contributed to increasing the diversity of students from underrepresented groups by mentoring two female undergraduate students. One of them has gone on to pursue an M.S. degree at UPenn. The other has already won an award for the research that she did with me. I have also served as a panelist for a session related to disability disclosure at the Richard Tapia Celebration of Diversity in Computing Conference (Tapia Conference) in 2018. Due to my aspiration to pursue a professorship and my prior, ongoing, and planned contributions to increase diversity in CS, I won the 2020 Google – CMD-IT FLIP Alliance Fellowship, which provides full financial support for the last year of my graduate studies. In the future, I plan to continue my efforts to increase the diversity in CS. My strong commitment and passion towards this plan have been influenced by my advisors and my personal experiences as someone with a disability.

My undergraduate and Ph.D. advisors, David Notkin and Tao Xie, respectively, are both well-known advocates for promoting diversity in computing. David was the founding co-director of the NCWIT Academic Alliance and has been a vital source of inspiration, especially for my mentoring of female students. Tao Xie has recently served as the General Chair and Program Chair for the Tapia Conference in 2018 and 2017, respectively. Tao’s focus on diversity has created a lab environment consisting of many students from underrepresented groups, which I have benefited from due to my interactions and publications with such students.

Beyond the influence of my advisors, I believe that my experiences as someone with a disability have also helped me become a good role-model to students from underrepresented groups. As a type-1 diabetic since I was three years old, I have experienced many of the challenges (e.g., prejudiced opinions, exclusion) students from underrepresented groups may face, and I have enjoyed guiding such students with solutions from my personal experiences. For example, a major challenge faced by some students with disabilities is that they may need to devote substantial time to manage their disability. Hence, they may benefit from my time management strategies as they generally have less time than students without disabilities to conduct research, attend classes, etc.

In the rest of this statement, I will discuss the contributions that I have made to increase diversity in CS and my plans to continue doing so.

### 1 Contributions to Diversity

#### 1.1 Service

I am an active member of several diversity-oriented organizations, such as AccessComputing and the Diversifying Future Leadership in the Professoriate (FLIP) Alliance, and I have been a volunteer for diversity-oriented events, such as the Rising Star workshop. AccessComputing is a national organization for graduate and undergraduate students with disabilities to connect and receive help from one another. As a graduate student in AccessComputing, I provide insights to other members about dealing with a disability in academic and industry settings. For example, I was a panelist for AccessComputing at the 2018 Tapia Conference for the “Disability Disclosure in Education and Employment” session [1]. In the session, I discussed how I had disclosed my disability in the past to various academic and industry colleagues. Also, as a member of the FLIP Alliance, I participate in monthly discussions on how to increase the diversity of doctoral students
who pursue academic faculty positions after graduation. Our discussions often lead to events aimed at improving the retention and advancement of students from underrepresented groups in CS.

1.2 Mentoring  Besides my service efforts, I have also mentored students who published papers, released open-source code, went to graduate school, and won awards for their research. Two undergraduate students I mentored are female, and one of them has gone on to pursue an M.S. degree at UPenn. The other is still pursuing an undergraduate degree, but she has already won the best presentation award at the Promoting Undergraduate Research in Engineering [2] Spring 2019 poster symposium for the research that she did with me. Overall, the students I mentored have coauthored eight publications with me (with two more in submission). Three of the students have moved on to pursue graduate degrees (Ph.D. at PKU, M.Eng. at Cornell, M.S. at UPenn), two more will be applying for graduate school this year, and two have accepted jobs in industry.

2 Plan to Increase Diversity  I believe that much work needs to be done to address the lack of diversity in CS. My plans to increase the diversity of students from underrepresented groups focus on how I will do so (1) in my lab by working with such students, (2) locally by improving the interest in CS among such students in the vicinity of my institution, and (3) nationally by increasing my collaboration with such students. I will look to align my plans with any departmental broadening participation in computing (BPC) plans.

To recruit more students from underrepresented groups, I will look to work with students of varying backgrounds. I will work with these students to make sure that I create an inclusive environment and make the environment accessible to them. Programs such as CRA’s Distributed Research Experiences for Undergraduates (DREU) and AccessComputing are of particular interest to me as I intend to use them for recruiting such students. I will also look to recruit students at diversity-oriented conferences, such as the Tapia Conference. To help the retention and advancement of my students, I will expose them early in their career to the benefits of being involved in diversity-oriented organizations such as AccessComputing and the FLIP alliance.

To improve the interest in CS among students from underrepresented groups, I will volunteer my time at my institution and local schools to teach and demonstrate the impact and excitement that studying CS can bring. By engaging with students early in their education, I hope to motivate them to pursue CS. I will also help the students from underrepresented groups at my institution to attend diversity-oriented conferences so that the students can benefit from the connections, advice, and inspirations that such conferences have provided me.

To increase collaboration with students from underrepresented groups in CS, I will collaborate more often with underrepresented researchers. By establishing collaborations with such researchers, I hope to develop long-lasting relationships with them so that they would have more opportunities in academia and so that my students can better learn to work with underrepresented researchers. Similar to my participation as a panelist for AccessComputing at Tapia 2018, I will also look to organize and participate in more diversity-oriented events at conferences in the future.

I have been privileged to be able to pursue a Ph.D. in CS, especially as someone with a disability. To increase the diversity of those in CS, it would be an honor to give back to the community by helping in whatever means I can afford to do so.

References