Diversity Statement

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Computer science is one of many fields where there is a critical need to enhance diversity and encourage broad inclusivity. In the 21st century, technology mediums will continue to play a defining role in shaping narratives on a community and global scale. To promote a society that encourages equity, justice, and diversity of opinions, it is essential that computer science has representation across different facets, such as races, ethnicities, gender identities, religious backgrounds, and socioeconomic backgrounds. Enhancing diversity will not only create equal opportunities for underrepresented groups, it will help uncover a higher number of talented researchers and developers that make substantial contributions to our field. To encourage more students from underrepresented groups, we must promote our colleagues and collaborators from traditionally marginalized populations. As a faculty member, I will take concrete steps to enhance diversity in the CS department and our field.

Since my undergraduate years in Pakistan, I realized that I am privileged and that other groups do not share the same experiences. Living in Pakistan (undergraduate and early education) and in the US (for graduate studies), I have seen race-, gender-, class-, and religious discrimination manifest in different ways for other less privileged communities and groups. I attended my high school in *Forman Christian College (FCC)* in Lahore, Pakistan, where a large fraction of students were from the Christian faith, a religious minority in Pakistan. Through this experience of closely working with and being friends with students from different faith backgrounds, I was able to observe their struggles and challenges. I saw a stark class division in my early education years where the rich and the fortunate would attend the best schools and colleges. At the same time, the same opportunities were not available to people with harsh economic circumstances. In US schools, in addition to similar socioeconomic divisions, I also see divisions along racial and ethnic boundaries. As computer science researchers and faculty, we must collectively create an environment that makes education and job opportunities accessible to people of all backgrounds.

1 UNDERSTANDING MODES OF DISCRIMINATION THROUGH ENGAGEMENT

At UIUC, I attended two discussion sessions on broadening participation in computer science (BPC), organized by Professor Colleen Lewis. These discussions were very informative, and they helped broaden my perspectives on diversity, inclusion, and discrimination. The first session discussed diversity, equity, and inclusion (DEI) and how unfair barriers exist for many underrepresented groups. After this discussion, I educated myself and was shocked to learn that women's participation in computer science in the US has constantly been declining since the 1980s. Pakistan has similar trends with one of the highest gender gaps in STEM fields. We must educate more people about these worrying trends. We need to collectively work to reduce this unfair gender disparity in computer science and other STEM fields.

In the second session, I learned about *intersectionality* (term conceptualized by Professor Kimberlé Crenshaw); the idea that multiple identities and factors can combine and lead to different modes of discrimination. For instance, black women are often discriminated against in ways worse than black men or white women. In group discussions, we also discussed how black trans women are more likely to be discriminated against compared to white trans women. This session was eye-opening in that it made me realize how discrimination against an individual must often be viewed through the lens of intersectionality, and that attributing discrimination to only one of many compounding factors is dangerous and leads to injustice.

2 GROWING DIVERSITY THROUGH MENTORING AND TEACHING

In my PhD at UIUC, I mentored two women, Yasmin Sarita, and Elizabeth Wang. I mentored Yasmin in the Summer of 2019 when she visited UIUC while an undergraduate student at Cornell University. After Yasmin returned to Cornell at the end of the Summer, we continued collaborating through Zoom meetings and email conversations. These experiences encouraged Yasmin to apply for graduate school, and she is now pursuing a PhD at UIUC. I mentored Elizabeth while she was pursuing her undergraduate programs at UIUC. We worked together on the ApproxTuner project [2] in the Fall of 2019. I co-authored two papers [1, 2] with Yasmin, and one paper [2] with Elizabeth. I have shared great working relationships with all my women colleagues, and learned valuable technical and non-technical skills through these collaborations.

As a faculty member, I hope to engage with and collaborate with people from all groups and backgrounds. I want to nurture an environment where no one feels intimidated to give their opinions and thoughts in lectures and seminars. I want to make sure everyone feels equally valued regardless of their background or affiliations.

When hiring teaching assistants for my courses, I will try to also hire people from underrepresented groups who are interested and qualified to teach these courses.

3 GROWING DIVERSITY THROUGH OUTREACH

Outreach has tremendous potential to encourage talented students into graduate and undergraduate programs. I have seen the impact of outreach firsthand. I have given three different seminars at Lahore University of Management Sciences (Pakistan) and the National University of Computer and Emerging Sciences (Pakistan) focused on encouraging students to apply to graduate school. Many students were encouraged to apply for graduate studies in the US through these seminars, and many received offers from top schools. In the future, I plan to give similar seminar talks in historically black colleges and universities (HBCUs) and Hispanic serving institutions (HSIs), and talk to undergraduate students about research opportunities in other universities, give them a detailed perspective on graduate research and encourage them to apply for graduate studies. My PhD advisor is currently collaborating with professors and students from Tuskegee University (an HBCU). Through his contacts, I will like to get in touch with students and researchers.

4 FUTURE PLANS

As a faculty member, I aim to develop a diverse research group with people from different backgrounds. I plan to take the following concrete steps as a faculty member:

- I will collaborate with research groups from historically black colleges and universities (HBCUs) and Hispanic serving institutions (HSIs). Through my PhD advisor, I would like to establish contact with students and researchers at Tuskegee University.
- I will actively participate in departmental BPC plans and use these as an opportunity to develop collaborations with HBCUs and HSIs, and to attract promising undergraduate students from these institutions.
- I would like to collaborate on research grants with researchers from HBCUs and HSIs.
- For promising undergraduate students in HBCUs and HSIs, I would like to extend Summer internship opportunities in my research group.
- Leveraging my accessibility as a course instructor, I will encourage students to do independent research studies (possibly for credit) and mentor them through weekly meetings. I will particularly encourage students from underrepresented groups.
- I will continue to educate myself on implicit bias and encourage my students to learn about it.
- Lastly, I will try my best not to be affected by implicit biases when hiring and evaluating incoming students.

REFERENCES

[1] **Hashim Sharif**, Prakalp Srivastava, Muhammad Huzaifa, Maria Kotsifakou, Keyur Joshi, Yasmin Sarita, Nathan Zhao, Vikram S. Adve, Sasa Misailovic, and Sarita Adve. 2019. ApproxHPVM: A Portable Compiler IR for Accuracy-aware Optimizations. ***(OOPSLA'19)*** .

[2] **Hashim Sharif**, Yifan Zhao, Maria Kotsifakou, Akash Kothari, Ben Schreiber, Elizabeth Wang, Yasmin Sarita, Nathan Zhao, Keyur Joshi, Vikram Adve, Sasa Misailovic, and Sarita Adve. 2021. ApproxTuner: A Compiler and Runtime System for Adaptive Approximations. ***(PPoPP'21)*** .