

One of my main passions in the computing career is **to promote diversity, equity, and inclusion in the research group, in the department, in the university, and in the research community.**

*Having seen the negative impacts of lack of diversity, equity, and inclusion, I determined to broaden the participation of underrepresented groups in the computing community.* Born in a mountainous and underdeveloped area, my ethnic group, Tujia, is an ethnic minority group in China. Our Tujia people use a totally different language, Tujia language or “Bifzivsar”, instead of Chinese as our mother tongue, which posed significant challenges for us to receive high-quality education and get access to computing technologies since they are all delivered in Chinese or English. To receive high-quality computing education and enroll in a university in China, we needed to spend a significant amount of additional effort to overcome all these inequities including language differences and education level disparity. Even after successfully enrolling in the college, we felt a lack of support and depression seeing much fewer amounts of ethnic minority students. Since then, I established my faith to eliminate this type of depression by promoting diversity, equity, and inclusion.

*Promoting diversity, equity, and inclusion both benefits the environment and boosts productivity.* Having worked in different places with people from different cultural backgrounds, I found an environment with more diverse subgroups is much more friendly for members to freely express their needs, thoughts, research ideas, and get constructive feedback. For example, our research group had Ph.D. students from multiple races, including African American, Asian (Korean, mainland Chinese, Hong Kong Chinese), Hispanic, and White. In group meetings, we usually share customs and views of the same research project from different cultural backgrounds. Such sharing was quite fruitful in terms of both research (e.g., leading to new research ideas) and living (e.g., learning customs and taboos to respect). Moreover, a diverse, equal, and inclusive environment is healthy and welcoming, making people more delightful and motivated so as to boost productivity.

**Past Efforts on Promoting Diversity, Equity, and Inclusion.** Since I established my faith in promoting diversity, equity, and inclusion, I have been trying my best toward this goal.

When I was an undergraduate student, I was in a middle school education support club. Our club organizes university students to help with middle school education in rural undeveloped areas in China. My role there was to design the contents and materials for the introductory computing course for K-12 schools in underdeveloped areas.

Now, as a Ph.D. student, I enjoyed working with people from underrepresented groups. In the department, I volunteered to be a student mentor for new Ph.D. students and a graduate ambassador for prospective Ph.D. students. As the mentor and ambassador, I am paired with a few junior or prospective students, many of whom are international students or from underrepresented groups such as females, LGBT groups, and African Americans, to give them general advice and guide them to kick off the Ph.D. journey.

In my research, one of my advisors, and many of my collaborators (junior Ph.D. students and undergraduate students) are from underrepresented groups. I had great collaborations with them and am always open to more collaborations with people from diverse backgrounds.

Furthermore, my research topic itself promotes equity directly. Specifically, I aim at building certifiably trustworthy AI, and such trustworthy AI should contain no bias with respect to different subgroups. My recent research [2] develops an approach to compute the worst-case fairness bound for a given AI model. As a result, the general public can leverage our approach to evaluate the degree of fairness for general AI models, and develop future enhancing approaches to promote AI fairness.

**Plan for Promoting Diversity, Equity, and Inclusion.** Having established faith in promising diversity, equity, and inclusion in mind, first I will take my obligation as a university employee to report any issues that might hurt diversity, equity, or inclusion, then I will aim at establishing such a friendly environment during teaching, research advising, and determining research projects.

For teaching, I will make sure the course contents are comfortable for students of any subgroups. I will do a strict and thorough review of all course materials. During the lectures and office hours, I plan to promote opportunity equity whenever possible. For example, if there are limited slots for course project presentations, I plan to divide the slots based on subgroup quotas to ensure equity. Moreover, to broaden the participation of K-12 students, I will proactively connect with local middle schools and high schools and design intriguing and exploratory research projects for K-12 students.

For research advising, I aim to build a research group where members are with diverse identities. Specifically, I will aim to increase the ratio of underrepresented groups within our group to above 40%, as my effort to increase diversity, equity, and inclusion in the department and in the academic community. Then, I will propose best practices and inclusion-oriented activities to establish an open and constructive atmosphere within the research group.

Lastly, my future research directions will have more weight on certifiably fair AI. Continuing my existing line of research [2, 1], I will explore training approaches to achieve better certified fairness for AI. Moreover, I plan to conduct empirical studies to understand how normal AI and fairness-aware AI impact the real world, i.e., are they really deployed, and do they really alleviate the lack of diversity, equity, and inclusion in our society?

In summary, I believe that promoting diversity, equity, and inclusion in the university is an essential duty of our future faculty members, and I will do my best to maintain and enhance such an environment.

## References

- [1] Bhaskar Ray Chaudhury, **Linyi Li**, Mintong Kang, Bo Li, and Ruta Mehta. Fairness in federated learning via core-stability. In Alice H. Oh, Alekh Agarwal, Danielle Belgrave, and Kyunghyun Cho, editors, *Advances in Neural Information Processing Systems (NeurIPS)*, 2022.
- [2] Mintong Kang\*, **Linyi Li\***, Maurice Weber, Yang Liu, Ce Zhang, and Bo Li. Certifying some distributional fairness with subpopulation decomposition. In *Advances in Neural Information Processing Systems 35 (NeurIPS)*, 2022.