

I believe promoting diversity should be an integral core value in all facets of a faculty member's work. Being an Asian male, I recognize that I am often afforded privileges as a researcher in the computing field due to unfair biases. For example, I have never felt alienated or been dissuaded from staying in computing research based on my gender or skin color, which many of my friends and colleagues from underrepresented groups have experienced. Growing up in China before moving to the U.S. for college, I know the feeling of finding oneself outside the dominant culture, understand the differences between cultures and individuals, and realize some of the challenges of diversity. In this statement, I discuss my commitment to diversity, equity, and inclusion through three major aspects of my work as an academic: service, teaching, and research.

COMMITMENT TO DIVERSITY THROUGH SERVICE

I have been a part of several department-, school-, and community-wide efforts to promote participation from underrepresented groups in computing education and research.

At Carnegie Mellon University (CMU), I seek to address the lack of diversity in computing research by removing the long-standing structural barriers. As a member of the Ph.D. admissions committee of the Human-Computer Interaction Institute (HCII) at CMU from 2018-2019, I witnessed firsthand how barriers such as the lack of access to research resources in historically black colleges and universities (HBCU), primarily undergraduate institutions (PUI), and academic institutions in developing countries, the financial stress caused by applications fees and GRE tests, and the implicit biases in the decision-making process hindered diversity in Ph.D. admissions. To address these issues, I, together with 8 other Ph.D. students, started a new initiative that calls for changes to the Ph.D. recruiting process in HCII. So far, many of our proposed changes have been implemented, such as waiving the GRE requirement, streamlining the application procedure for fee waivers, enhancing recruitment programs at HBCUs and PUIs, and requiring implicit bias training for the admissions committee. We are currently in the process of addressing the longer-term issue of ensuring fair access to the "pipelines" to computing research by improving HCII's recruitment procedure for the Research Experiences for Undergraduates (REU) program, and expanding the local K-12 outreach programs.

Beyond CMU, I contribute to the inclusion of the research community through my academic service. For instance, I served as an Associate Chair on the program committee of the Late Breaking Work (LBW) track for the ACM CHI conference in 2019 and 2020. The LBW track, as the more lightweight (6-page extended abstract) program with a higher acceptance rate focused on earlier-stage research work, often serves as an entry point to publishing in the CHI community (the premier venue of HCI research) for junior students, authors from less-resourced institutions, and researchers from non-traditional backgrounds. In my service as an Associate Chair, I applied inclusive practices, such as recruiting external reviewers from diverse backgrounds who can understand the research context, informing the reviewers to avoid biases and hurtful language, and promoting the growth mindset of how much can the submission benefit from the feedback at CHI LBW. Together with other colleagues on the program committee, we documented our reflections and the best practices for future CHI conferences.

As I transit to a faculty role, I will continue to foster the diversity of my research group, classroom, department, school, community, and society through my service work. At my new position, I look forward to getting involved in and leading community-building efforts towards a more diverse academic environment. I am particularly excited about organizing reading groups, seminars, and workshops on DEI issues and engaging in community outreach events to promote participation in computing from underrepresented groups.

SUPPORTING DIVERSITY IN TEACHING AND MENTORSHIP

As a teacher and mentor, I bring my values of inclusion into the classroom and the research environment. In the past 8 years, I have worked teaching roles on a variety of classes ranging from an introductory computer science class in a large public university, a graduate-level human-computer interaction class in a private university, to a massive open online course (MOOC) with over 20,000 enrolled students all over the globe. Through these roles and the training course I took in *Creating Inclusive Classroom Environments*, I have accumulated valuable knowledge and experience of working with students who come from different disciplines, races, genders, sexualities, cultures,

nationalities, and socioeconomic backgrounds. In my teaching, I encourage a diverse variety of students to contribute to the class discussion, teach the subject matter from multiple perspectives, use gender-neutral and inclusive language, help first-generation college students and international students navigate the American academic environment, and design class materials that are inclusive for students who are from non-traditional academic backgrounds or use English as a second language.

My experiences and reflections on diversity in teaching allow me to make impacts beyond my own classes.

As a member of the Anti-Racism Work Group in the School of Computer Science (SCS) at CMU, I am leading a group of 8 Ph.D. students to study the DEI issues in our courses and curriculums. As a part of this effort, we have recently developed a new guideline with 13 heuristic rules for auditing and revising the course syllabus on different aspects of DEI. These rules can be used as a resource to help instructors to create more inclusive learning environments for students from underrepresented groups, to design course contents that reflect cultural, racial, and gender diversity in the subject areas, and to cover important ethical and societal implications of technology. As of Fall 2020, this guideline has been widely used within our department.

My commitment to diversity, equity, and inclusion also guides how I approach research mentorship.

During my Ph.D., I have mentored research students from diverse and underrepresented backgrounds, including 8 women, 4 international students, 2 from underrepresented racial groups in computing, and 2 from primarily undergraduate institutions. I strive to create a welcoming research culture where all students can ask any questions in a non-judgmental environment. With my support and encouragement, my students have been active in organizations and activities such as the ACM-W chapter, the local Women in Computer Science group, and the Grace Hopper conference. In my mentorship, in addition to the research methods and skills, I also explicitly discuss the broader societal implications of our research work and the ethical and inclusive practices in research collaborations, human subject studies, and system deployment.

In the future, I plan to expand my pursuit of diversity and inclusion as a teacher and mentor.

A goal of mine is to create a learning environment that welcomes a diversity of experiences and backgrounds while accommodating the various struggles and challenges that students face. I also commit to fostering a diverse research environment by recruiting students from underrepresented groups and unconventional backgrounds to join my research group. Based on my personal experience, I believe that their diverse skills, cultures, and life backgrounds will bring in valuable unique perspectives into the research we conduct.

BROADENING PARTICIPATION IN COMPUTING THROUGH RESEARCH

The goal of broadening participation in computing motivated my research. For instance, the open-sourced SUGILITE system I developed allows end users without programming expertise to teach a smartphone-based intelligent task automation agent new automation tasks, rules, and concepts using a combination of natural language instruction and demonstration, lowering the barriers to automating everyday computing tasks. By supporting end-user development on smartphones, my work makes programming more accessible to persons from economically disadvantaged backgrounds and from underrepresented groups, where many have become “smartphone-only” internet users without access to computers or broadband connection at home. My work also helps users with accessibility needs—the multimodal interactive task learning approach of SUGILITE enables the friends, volunteers, or community members to create task automation for common tasks by demonstration, so that users with motor or vision impairments can operate these tasks in otherwise inaccessible apps by speech.

As articulated in my research statement, my future agenda centers around designing, building, and studying new interactive systems for democratizing AI to empower individuals.

A major goal of my planned research is to enable individual workers to automate and augment their work-related tasks with AI systems. In this research, I will specifically focus on the needs, values, and interests of users from people of color, disabled, low-socioeconomic, or LGBTQ backgrounds as they are often disproportionately impacted by biases in many current AI systems at workplaces, especially in the newly emerging area of “gig works”. My work aims to use AI to augment workers to support their individual interests, motivation, and creativity instead of displacing them with AI systems.