I believe diversity covers every aspect from multi-disciplinarity to organizational partnerships, research areas to international collaborations, and across the range of people conducting research, attending conferences and events, outreaching to the community, and more. In the past, I have built my worldview on valuing diversity, respecting equality, and appreciating inclusion by getting education from diverse countries and disciplines, interacting with diverse groups of people, and attending diversity workshops and seminars (e.g., N²Women [1]). As an early-career researcher, I am committed to contributing to a welcoming climate with diversity, equality, and inclusion.

We can do better: While many people may be aware of the importance of diversity, we have yet to achieve diversity and inclusion in scientific workplaces such as universities, research institutions, and tech companies. In an NSF 2019 Women, Minorities, and Persons with Disabilities in Science and Engineering (WMPD) report [2], “the share of women receiving bachelor’s and doctorate degrees in Computer Science (CS) has declined over time. At the bachelor’s level, only 19% of the CS degrees in 2016 were awarded to women, down from 27% in 1997.” Correspondingly, underrepresented minority students can face steeper obstacles as they are statistically two-thirds as likely (40% vs. 61%) as other students to graduate within six years in a STEM degree program [3]. Although the problems themselves are complex with many contributing factors, I believe we as a community need to take action to foster an environment where everyone can find a comfortable space regardless of their background.

Value diversity, equality, and inclusion in action: Based on my prior experience, I notice that underrepresented minority students may face unique challenges in their study that could affect their career choices. Sometimes, lacking mentorship, role models, a sense of belonging, or confidence can significantly affect students’ career paths. In my opinion, every effort counts, and everyone’s action will make diversity, equality, and inclusion the new norms in every aspect of our society. During my Ph.D. at Johns Hopkins University, I have had opportunities to closely interact with several underrepresented minority students who were not CS/ECE majors. One student from the Applied Math Department came to my TA office hours and wanted to talk about her potential career choice in CS as I had some similar transition in college from focusing physics to CS major. We had an hour-long discussion: She talked about her concerns about lacking coding skills and how to handle peer pressure and get research training, and I shared my understanding of these issues. I encouraged her not to overestimate the obstacles as long as she liked to build a career in this direction. The student now is doing research in Computer Vision at Hopkins as a CS master’s student.

At Carnegie Mellon University, I am directly mentoring two female Ph.D. students and one female M.S. student. It is an enjoyable experience working with these students. As a mentor, my method is to appreciate students’ efforts in the first place, listen and consider the realistic obstacles from students’ views, and help them throughout. In general, underrepresented minority students might feel more isolated and too scared to participate in research. It is my role to guide the students to discover their unique advantages and overcome these issues. For example, the master student I am mentoring once came to me asking about research opportunities, and I shared my research interests and experiences. I believe her efforts to seek new challenges and break out of her previous comfort zone were really important in the first place. We then figured out a research project together that matched her interests and background on hardware-related design and programming. The student now is finalizing the project towards a conference submission and actively applying to a Ph.D. program to continue her research.

Be cautious on unconscious bias: Sometimes, unconscious or implicit bias [4] is an even more severe issue as it does not reflect or align with our conscious, declared beliefs. Unconscious bias is automatically activated without an individual’s awareness. These implicit biases are different from beliefs and attitudes that individuals are aware they hold but choose to conceal for complying with social or legal norms. For instance, in long-term history, people are exposed to media portrayals of certain racial groups, genders, and nationalities. These hidden but harmful biases may be reinforced on a daily basis without us knowing, or thinking consciously about them.

To me, unconscious bias has profound implications in our community. When universities or departments are deciding on who gets admitted to their undergraduate or graduate programs, who gets hired, who gets awarded or promoted, the subliminal and emotional criteria may play a significant role in the decision. Regarding this important issue, I will keep learning and practicing how to eliminate unconscious bias at work. In my career, I would like to promote the awareness of unconscious bias by organizing or participating in related seminars and workshops (e.g., an event similar to Google’s workshop on unconscious bias [5]), supporting relevant activities, and outreaching to the community.
REFERENCES


