Towards an Inclusive and Equitable AI Research and Education Community

Throughout my journey as a researcher and educator in AI and Computer Science, I have come to recognize the importance of diversity, equity, and inclusion in advancing research and education. As someone who has mentored students from underrepresented groups and worked on projects that address challenges faced by diverse communities, I believe that embracing an inclusive environment is essential for nurturing creativity, innovation, and a sense of belonging. I am committed to actively supporting and uplifting voices from all backgrounds, not only to enrich the field of machine learning but also to ensure that technological advancements and contributions reflect the diverse perspectives and experiences of the society they aim to serve. I proceed to discuss my commitment to diversity from both the mentoring and teaching practices.

1 Diversity in Mentoring Practices

My commitment to diversity and inclusion is shaped by my mentoring experiences with students from underrepresented groups in AI. In Spring 2024, I had the opportunity to mentor several undergraduate students from Africa at the University of Wisconsin-Madison on research projects applying NLP techniques to the Ghanaian language. Through this collaboration, I guided them in understanding the current landscape of using AI for African languages. During the process, I realized that these underrepresented African languages, especially those spoken by small speech communities, are currently facing endangerment, with up to 10 percent projected to go extinct within a century. Recognizing the urgent need to preserve linguistic diversity, I became deeply committed to using AI as a tool for cultural preservation. By mentoring these students, I helped them develop a foundational understanding of NLP techniques while also emphasizing the broader implications of their work in preserving their cultural heritage. This experience highlighted the importance of inclusive AI research that represents diverse linguistic and cultural contexts, which results in a survey paper—the first foundational work on understanding this research area. In this semester, I continue to mentor these students on topics such as preprocessing text data, fine-tuning NLP models, and evaluating performance for low-resource languages, which has strengthened my commitment to supporting diverse representation in AI research.

I have mentored 7 undergraduate and 2 junior PhD students, with most of them traditionally underrepresented in CS, such as women, African Americans and first generation college students. During mentoring, I supported their diverse interests from theoretical ML to applications like biomedical image analysis, etc., which helped them achieve significant research progress, including publications in top-tier venues. I found enjoyable to advise students with diverse backgrounds without limiting them to a single direction or existing projects.

2 Diversity in Teaching Practices

In my teaching experiences as a course assistant for "CS 540—Introduction to Artificial Intelligence" and "CS 762—Advanced Deep Learning", I made it a priority to create an inclusive and engaging classroom environment. I actively encouraged students to express their ideas and engage with the material, regardless of their prior experience with AI or related course topics. In CS 540, with over 300 junior undergraduate students enrolled from different educational backgrounds, race, gender, ethnicity, etc., I aimed to make the learning experience more accessible in the office hours by incorporating examples that resonate with students from different fields, using relatable case studies, and offering alternative explanations for complex concepts. In CS 765, I helped design open-ended research projects that encourage perspectives through group collaborations. One student from chemistry department Olesia made an impression in my mind because she worked on applying deep learning techniques to chemical reaction prediction. Despite initially facing challenges due to limited AI background, Olesia's diverse perspective led to unique insights in her interdisciplinary project, which finally resulted in a publication in Nature! Her success highlighted the importance of creating a supportive environment that encourages students from all disciplines to explore AI's potential.

3 Future Goals

As I pursue a faculty role, I am committed to advancing diversity, equity, and inclusion in AI education and research. In my research group, I will prioritize diverse backgrounds, experiences, and viewpoints. I allow student to control their own identities and am happy to create a supportive environment through regular meetings, group activities, and personalized mentorship. I am also eager to organize / create workshops, seminars, and initiatives on fairness, transparency, and ethics in AI, which will enrich the curriculum and highlight the importance of building responsible and inclusive AI technologies that encourage broad participation.