Diversity Statement

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I believe that people with diverse backgrounds can join together to make a positive impact in the world. Diverse groups lead to lateral thinking, broaden our horizons about redefining what problems are important to solve and even stumble upon new solutions. While diversity can refer to many things, for the context of this statement, I would like to focus on people's diverse backgrounds. Creating a diverse ecosystem, be it, a lab group, a department or a research community, requires (1) believing in the power of diversity; (2) stimulating the growth of diversity; (3) managing the growth of diversity effectively. Rightly so, these are the core problems that are of interest under Diversity, Equity and Inclusion (DEI). I have contributed positively towards these core problems from three perspectives – with my skillsets as a researcher, a teacher and a mentor.

In research: The first step towards stimulating diversity growth is in enabling access to quality lifestyle for under-represented groups. The digital revolution has been a game changer in democratizing healthcare across the world with just access to the internet. However, internet access is not an equitably distributed resource. I was awarded the Corporate Startup Lab Fellowship at CMU to work with Optum Inc., a subsidiary of United Health Group that focuses on healthcare innovation. I tackled the problem of enabling telehealth access over a *digitally under-provisioned rural USA* from the perspective of a core wireless researcher. I worked together with experts at Optum and fellow awardees on a specific county (Leake County, Missouri). We analyzed and chose it from indicators such as the rate of growth of diseases and internet access. My core contributions were in weighing the technical and financial cost of wireless technology creation (Non-profit Internet Service Providers, Greenfield custom-wireless and IoT deployments, Cellular IoT, Satellites) and their estimated adoption by county residents. With my background in understanding wireless networks' limits, I proposed an actionable plan mapping the best wireless option for enabling a variety of telehealth services (messaging, video, remote patient monitoring). I take pride in being a wireless researcher as wireless technologies are the easiest to scale, with minimal infrastructure overhead, and bridge the gap.

In teaching: The next step towards stimulating diversity growth is creating awareness. This includes inspiring K-12 students about STEM and its impact on the world. I believe executing these awareness programs with great excitement and fun material would genuinely interest K-12 students to pursue STEM. I approach outreach programs with the same mindset as a teacher creating an enjoyable class. I have served as a content creator and instructor at CMU ECE Outreach program between 2018-2019. We have invited middle and high school students from across *diverse neighborhoods in Pittsburgh* to come to the CMU campus and experience engineering firsthand. Rather than lectures and slides, I resorted to the concept of *lab sessions* to engage students. This allows them to physically play with electronic devices and see cool things happen in reality. Over the course of two years, I have designed and instructed lab sessions, debugged 1:1 with students and showed them the joy of making and breaking circuits. Computer science and electrical engineering have many great options to make fun content and I strive to continue to introduce these ideas in an engaging manner early on to K-12 students.

In mentoring: Managing the growth of diversity includes assisting in challenging circumstances to under-represented students. Incoming students, may not have resources for their questions, and typically need mentors. I served as a peer mentor in CMU's DEI mentoring program. I have mentored 5 incoming Masters and early Ph.D. students from diverse backgrounds. During my stint, I addressed many crucial situations ranging from being overwhelmed by courses and advisor selection process to the stress of internship search. From this process, I got a flavor of mentoring junior students in a non-research capacity, and the lessons I have learned will be useful as a faculty.

Future Work: I am certain that continuing to solve these core problems is key to sustained progress in DEI. I aim to further the impact of outreach programs by adapting ideas from successful technical museum exhibitions. With my background as a systems researcher, I shall design my lab to be demo friendly and showcase interactive demos of practical systems to K-12 students. I will create new avenues for supporting and mentoring students, especially under-represented groups, by having open (anybody is welcome) office hours weekly. I shall also be cognizant of underlying data in my data-driven research work to include and be representative of all diversities to ensure fairness in my research. Lastly, I am in a unique position to lead efforts (both research and otherwise), to leverage wireless technologies for scaling access to the internet in marginalized sections. This would equip people with access to basic necessities like high quality online education and telehealthcare.