"Different roads sometimes lead to the same castle."
–George R.R. Martin

Each person's unique life experiences yields a unique approach to novel problems. As a result, diversity is essential to success in the computational and physical sciences, yet there have been systemic barriers to women and other minorities who wish to enter computer science and STEM as a whole. To address this, I have been committed to improving diversity in the computational sciences.

Throughout my academic career, I have affiliated myself with organizations at UC San Diego dedicated to promoting interest and accessibility of STEM fields to demographics that are historically underrepresented in these fields. For example, as a member of the Graduate Women in Computing (GWIC), Society of Women Engineers (SWE), and CS foreach organizations, I have participated in outreach events targeting middle and high school girls to teach them basic programming and engineering principles as well as to simply promote interest in engineering professions. Also, as a member of the Women in Computing (WIC) organization, I have participated in the Group Mentorship program, in which I served as a mentor to a group of freshman and sophomore undergraduate women in majors within the Computer Science and Engineering department. To serve the underrepresented demographics in the San Diego area, I have volunteered in events hosted by the Salk Institute for Biological Sciences to introduce middle and high school students to bleeding-edge biological research, and I am currently a SciChats @ Salk mentor as well as a SalkEducation volunteer, roles in which I speak to high school students about my research and give them advice about science and higher education. Further, in collaboration with the Undergraduate Bioinformatics Club (UBIC), I have organized numerous outreach events as an officer of the Graduate Bioinformatics Council (GBIC) to teach elementary, middle, and high school students about Bioinformatics.

In addition to volunteering in outreach events, I have contributed to diversity through my teaching by developing freely accessible Massive Open Online Courses (MOOCs) and Massive Adaptive Interactive Texts (MAITs). Historically, the ability to learn Computer Science and other STEM topics has been restricted to students in higher education institutions, which can be prohibitive due to financial hardship, time constraints, or other factors. However, due to their self-paced nature, MOOCs reduce these barriers to entry, permitting entrance by previously underrepresented demographics. For example, a 2016 study by Rebecca Bayeck found significant MOOC participation by residents of countries in which higher education is extremely rare, far more significant representation of women than in universities, a large proportion of individuals who are either unemployed or seeking to change field of employment, and a considerable number of individuals simply taking courses for interest. I find these findings consistent with the distributions of students in my own MOOCs (see figures).

If given the opportunity to be a Lecturer with Potential Security of Employment (LPSOE) at the University of California, San Diego, I hope to continue my commitment to diversity in STEM, namely in the computational sciences, both in the local San Diego community (especially in the South Bay area due to having grown up in Chula Vista) through participation in university organizations as well as in the global community through the continued development of MAITs. I hope to serve as a mentor and an ally to students from underrepresented backgrounds, and I strive to mitigate the barriers they face.

Niema Moshiri

Figures

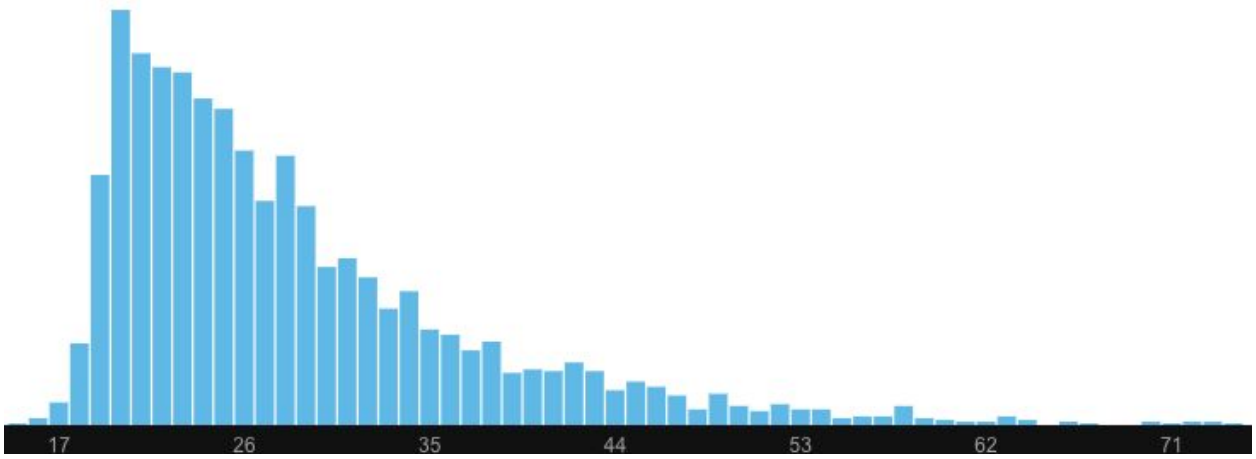

Figure 1. Distribution of student ages in *Data Structures: An Active Learning Approach*.

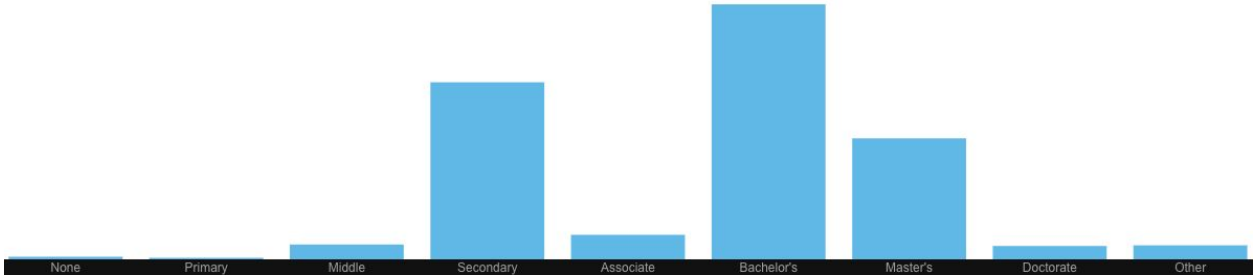

Figure 2. Distribution of student education level in *Data Structures: An Active Learning Approach*.

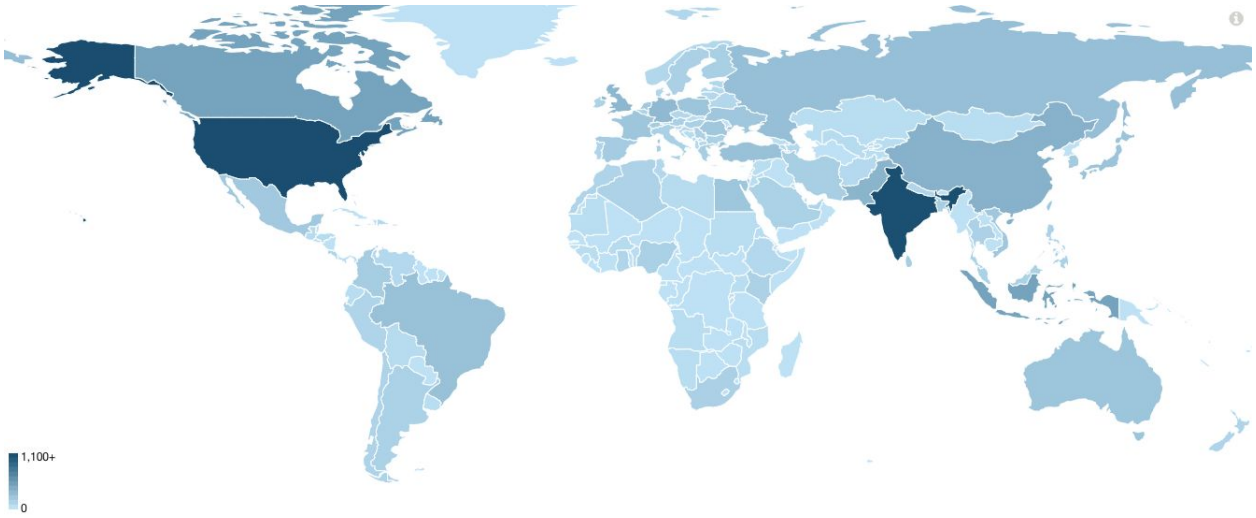

Figure 3. Geographic distribution of students in *Data Structures: An Active Learning Approach*.

References

Bayeck, R. Y. (2016). Exploratory study of MOOC learners' demographics and motivation: The case of students involved in groups. *Open Praxis*, 8(3). doi:10.5944/openpraxis.8.3.282