

The Role of Mentoring for the Advancement of All Communities

Bhavani Thuraisingham

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We are living in a complex world that is rapidly evolving due to technology. The WWW and Social Media have eliminated boundaries and social norms and with COVID-19 the work environment has drastically changed. While there are numerous career opportunities in Computer Science in general and Cyber Security and Artificial Intelligence/Data Science in particular, the competition is also extremely intense around the globe. It is almost impossible for a person to succeed in his/her career without the advice and mentorship of the senior researchers, developers and technologists. Almost every person I have known who has succeeded has had a mentor (in many cases mentors) who have guided him/her and supported him/her during the early stages of his/her career. Therefore, every career professional must have a mentor regardless of gender, race/ethnicity, and age.

Lack of mentorship is perhaps the most important reason why women and underrepresented minority communities have not done as well in their careers especially in lucrative fields like Cyber Security; another could be bias. Lack of opportunities start at an early age as boys are given preferences over girls in almost every culture and as time progresses girls are left behind in schools, colleges and in the workforce. So, women mainly work to supplement their husbands' incomes. Underrepresented minority communities also have disadvantage as often their parents are not as educated as those from the non-minority communities and so minority boys and girls have a huge handicap. If the women and minority communities are fortunate enough to get an education and a good job, there are very few from these communities who are at higher positions and so the junior researchers, developers and technologists are often ignored and left to fend for themselves. They see their non-minority colleagues thrive possibly due to the mentoring they receive and get frustrated and that gets them into a vicious cycle.

What is the solution to this huge problem? The first step is to realize that there is a problem; people, especially those in non-minority communities do not realize there is a problem. More recently, people are getting more educated about the problem. As a result, there is much more awareness about the inequality among different groups. It is not about giving a job to a person because she is a woman, it's about building a safe work environment where everyone can thrive. We must not only focus on the advancement of women which is a must, we must also include every underrepresented community including African Americans, Latino Americans, Native Americans, LGBTQ Americans, People with disability, Autistic Individuals, and the Elderly. In fields like Computer Science Caucasian women are in the minority. We need to make every effort to ensure their advancement as they are the largest female group in the USA. We have to go beyond our own gender race/ethnicity and help everyone to succeed. Every organization must have policies for Mentoring. Good mentoring will enable a person to understand the culture of the organization and what it takes to succeed. That is, mentoring is essential to support the advancement of all groups We need Domain Specific Mentors (e.g., Cyber Security, Data Science) and not generalists (e.g., Psychologists); only those working in your field really understand what you need to do to advance in your education/career (e.g., top journals vs top conference publications for tenure).

This presentation will start with a discussion of the problems faced by the different communities then discuss the importance of mentoring in fields like cyber security and data science. It will give examples of my personal story on how lack of mentoring was initially tough on my career and then how I chose mentors who have then supported me and helped me to thrive in my career in cyber security and data science. I will also give my top ten reasons as to why a career in cyber security / data science will benefit various communities. The one aspect that we should all focus on is age discrimination and that affects all communities.

Biography of Dr. Bhavani Thuraisingham

Dr. Bhavani Thuraisingham is the Founders Chair Professor of Computer Science and the Executive Director of the Cyber Security Research and Education Institute at the University of Texas at Dallas (UTD). She is also a visiting Senior Research Fellow at Kings College, University of London and an elected Fellow of the ACM, IEEE, the AAAS, the NAI and the BCS. She was a Cyber Security Policy Fellow at the New America Foundation for 2017-2018 and focused on engaging rural America in cyber security. Her research interests are on integrating cyber security and artificial intelligence/data science including as they relate to public policy for the past 35 years (where it used to be computer security and data management/mining). She has received several technical and leadership awards including the IEEE CS 1997 Technical Achievement Award, ACM SIGSAC 2010 Outstanding Contributions Award, the IEEE Comsoc Communications and Information Security 2019 Technical Recognition Award, the IEEE CS Services Computing 2017 Research Innovation Award, the ACM CODASPY 2017 Lasting Research Award, the IEEE ISI 2010 Research Leadership Award, and the ACM SACMAT 10 Year Test of Time Awards for 2018 and 2019 (for papers published in 2008 and 2009).

She has worked tirelessly to support women and minority groups in Cyber Security and Data Science. Out of the 22 PhD students she would have graduated by between 2008 and 2022, at least 50% are women and they also include members of the African American, Latino American and the LGBTQ communities in addition to others such as Caucasian Americans. She co-chaired the Women in Cyber Security Conference (WiCyS) in 2016 and delivered the featured address at the 2018 Women in Data Science (WiDS) at Stanford University serves as the Co-Director of both the Women in Cyber Security and Women in Data Science Centers at UTD. She has spent around 20 years working on mentoring activities in Cyber Security and Data Science and has chaired multiple panels including her recent panel at IEEE ISI 2020 (Intelligence and Security Informatics) and gave multiple keynote/featured addresses at Cyber-W, iMentor, SWE, WITI, Girls Who Code, and WICE (Women in Communications Engineering) celebrating International Women's Day. She gives talks on cyber security at DFW public libraries and is an official mentor to junior faculty as well as high school students in DFW. She received the Women in Technology Award from the Dallas Business Journal in 2017 and the Woman of Color Leadership from Career Communications Inc. in 2001. She was named one of 500 most influential business leaders in North Texas for 2021 by the D Magazine's D CEO Magazine.

Her 40+ year career includes industry (Honeywell), federal research laboratory (MITRE), US government (NSF) and US Academia. Her work has resulted in 130+ journal articles, 300+ conference papers, 180+ keynote and featured addresses, seven US patents, fifteen books, podcasts as well as technology transfer of the research to commercial products and operational systems. She received her PhD from the University of Wales, Swansea, UK, and the prestigious earned higher doctorate (D. Eng) from the University of Bristol, UK. She has a Certificate in Public Policy Analysis from the London School of Economics.