Podcast Name: *ACM ByteCast*
Episode: Jacki O'Neill - Episode 49

Welcome to the *ACM ByteCast* podcast, a series from the Association for Computing Machinery! The podcast features conversations with researchers, practitioners, and innovators at the intersection of computing research and practice about their experiences, lessons learned, and visions for the future of computing. In this episode, host Bruke Kifle interviews guest Dr. Jacki O'Neill, Director of Microsoft Africa Research Institute (MARI). Dr. O'Neill's research is dedicated to ensuring the technologies we create enhance, rather than remove, agency and create a sustainable future. She has a commitment to serving underserved communities with them being as diverse as they are pressing. She has multidisciplinary approaches where teams collaboratively design solutions. Their goal is to uplift communities and enhance their quality of life to solve local problems globally.

To begin, Dr. Jacki O'Neill is an ethnographer by trade and as a child, was deeply impacted by the industrial revolution in the UK. Most of the boys on her street got a job and it completely changed her community. The second impact was when a new subject introduced her to computer science, which intrigued her. She wanted to take it in the subject, but students could only take it if they had a computer at home and she did not. She completed her psychology degree at Manchester University and growing up, she worked multiple jobs starting at the age of 14. Her background does influence how she approaches the design of technology today. As an ethnographer, she believes you have to observe and see what challenges people have in their jobs at the moment, and then you can use those observations to inform you on what technology would enhance their life. Technology needs to be created to help others and amplify their jobs.

Next, she describes her diverse geographical experiences by starting off getting a job from Xerox in India, and then going to Bangalore in 2011. Dr. O'Neill states that she loved living in India and not having to fight for everything she wanted to do. She then got a job in India with Microsoft to make work better for lower paid workers. There was very little research presence in Microsoft and pitched the idea of MARI for Africa, specifically because she had long thought it was a gap. She received the funding in March 2020, and then moved in September to set it up. MARI is an applied research center where everyone who works there is a diverse population and sees new challenges and opportunities differently. They want to have a positive impact on everyone and create important technology for the people of Africa and Microsoft.

Working on multidisciplinary teams is not easy, but worth it. They have different research disciplines with perspectives, but that's where the value lies. Everyone on the team must be willing and open to learn from one another. There is an issue with language and they do need equitable language systems in all languages in order to understand each other. For Africa specifically, she says AI levels the playing field in technology because anyone can use it. It's an exciting time in Africa, but they also need to think about building green economies. She is hesitant about generative AI and healthcare, but says it can be done carefully to amplify the work of healthcare workers since there is such a high need, but not enough workers. An example she gave was of visuals now available for patients in hospitals, where patients can get

ideas about what they will be having surgery on, which is helpful. There is also a huge value of social relationships in business, and they need to recognize disadvantages of technology as well as its benefits. Micro interactions are very positive for well-being, and if we overly automate our world, we risk impoverishing it. Communities are at the heart of what you are doing and having local, indigenous knowledge helps the people in those communities and to create technology that helps make their lives better. There are also regional biases that do not embody knowledge of cultural practices and ways of living in Africa, but that's where the research comes in. Finally, Dr. O'Neill shares her exciting future plans and visions for Africa. She would love to see speech interfaces for African languages and advises if you are thinking about a career in computing, to do it! The more people who do it and bring perspective, the better for the society as a whole.

Key takeaways:
2:58 - Dr. Jacki O'Neill introduces herself and shares what drew her to computing.
8:05 - How has your background influenced your approach in the design of technology?
11:13 - Primary methodologies to effectively design technology for people.
15:16 - What motivated you to seek international experiences?
21:05 - The establishment and mission of MARI.
26:42 - Challenges and benefits of collaborating across different multidisciplinary teams.
36:04 - What do you think about technology playing a role in the local problems and exciting areas in Africa?
40:00 - What are the biggest opportunities and challenges in Africa that you see?
46:57 - How do you approach cross-cultural differences and challenges?
50:31 - Exciting future directions and visions for computing in Africa.
54:26 - Dr. Jacki O'Neill shares advice for making a social impact in the field.

Links:
Learn more about Dr. Jacki O'Neill.
Learn more about Bruke Kifle.

Tags:
Technology, IT, computer science, coding, technology development, technology solutions, Microsoft, generative AI, Africa, challenges, benefits, collaboration, multidisciplinary team, global, international, research, cross-cultural