Podcast Name: *ACM ByteCast*
Episode: Episode 46 - Noriko Arai

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 Scott Hanselman interviews guest Noriko Arai, Japanese researcher in mathematical logic and artificial intelligence, professor at the National Institute of Informatics and Director of the Todai Robot Project.

To begin, Noriko shares that she wrote a book in 2010 called, *How Computers Can Take Over Our Jobs*. She explains that there were two predictions in this book. First, she predicted that by 2030, half of the jobs done by white collar workers will be replaced by computers. Secondly, she predicted that the next AI boom would be soon, but not started by academia, but rather by the tech giants. Her book preceded these predictions by two years. The book didn't sell as well as she hoped because society didn't take it seriously. She was so concerned with the reaction because she was so certain of her predictions. She agrees that academia does prevent creativity, because academia is so worried about the job market. However, she shares that it is her responsibility to share what AI is and what impact it can have. Academia is so competitive and lives by the rule, "publish or perish." She has a deep background in math and law, and says researchers are inclined to tackle challenges. However, researchers should focus not on whether or not their issue will get published, but the usefulness the research provides in society today or the distant future.

Next, she shares her work-life balance philosophy by saying that everything is a hobby for her. She is interested in it all and loves her work. She does not like writing research papers because that means the project or idea is complete, and there is no more research to conduct. Noriko shares that the public wouldn't buy her book, so she began the Todai Robot Project. The robot passed 70% of the universities in Japan but not Todai. Noriko suggests that if it teamed up with ChatGPT today, that it would pass Todai as well. AI for English and Social Sciences is similar to ChatGPT, but mathematics needs clear reasoning. They made AI from scratch and it took 6 years. She says the Todai Robot could pass the University of Tokyo exam now. She thinks it will both be positive and negative for how this technology will affect society. It will be beneficial for the top 5-10% of intelligent people, but for those who don't read or write well, or are not an expert in this area, then ChatGPT doesn't know what is right or wrong. Those people will make mistakes, which could be very dangerous for society. We use calculators in math in school, but you still need to understand the math before you use a calculator. It is the same with AI.

Also, Noriko discusses her mentors and heroes that have inspired her and help lead her in the right direction. She discusses how Toniann Pitassi, became her friend, colleague, and "compass" in directing her work in the right direction. Noriko goes on to say that the number one skill needed for researchers in the AI space is honesty. Researchers must be honest, use technology, always be aware of the limitations of AI and be honest to society. If you are dishonest, it will come back to you. She also discusses honest countries in politics and says it

depends on the country. Lastly, there have been challenges for her as a woman in AI, but she has dealt mostly with criticism for being selfish. Scott finishes the podcast by sharing that we are grateful for her persistence and for her being on the show.

Key takeaways:
1:19 - Noriko explains the Todai Robot Project.
4:39 - Does academia prevent creativity?
7:32 - Is it hard to be a researcher and practitioner?
8:52 - Noriko's work-life balance.
11:26 - Noriko shares her professional background.
14:01 - Are you optimistic or pessimistic about how this technology will affect society?
18:43 - Noriko's heroes that give her inspiration.
22:55 - The skills needed for researchers in the AI space.
26:31 - Challenges for women in IT.

Links
Learn more about [Noriko Arai.](#)
Learn more about [Scott Hanselman.](#)

Tags:
Noriko Arai, Scott Hanselman, Todai Robot Project, academia, creativity, researcher, practitioner, technology, AI, ChatGPT, challenges for women, IT, mathematics logic, artificial intelligence, How Computers Can Take Over Our Jobs, predictions future