Podcast Name: *ACM ByteCast*
Episode: Episode 64 - Chieko Asakawa

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 Sabrina Hsueh is joined by Chieko Asakawa, a computer scientist and researcher who is developing innovative accessibility technologies. Chieko works at the International Business Machines Corporation (IBM) and she lost her eyesight at age 14. She has won numerous awards, including the US National Inventors Hall of Fame and she was the first Japanese woman as an IBM fellow. Chieko is a leading advocate in research for accessibility.

To begin, Chieko explains why she is working in this field of accessibility by sharing her personal journey. She became totally blind at 14 after hitting the side of a swimming pool, which caused her to lose her independence in moving around. She joined IBM in accessibility research in 1985 and she was able to access information by herself. Chieko created the IBM home page reader in Japanese, which allows visually impaired users to navigate the internet. She received an award for her work and greatly helped increase awareness and accessibility. The latest challenge she is facing is with the AI suitcase, which is a robot that helps visually impaired people walk around and navigate independently. They have done many pilot tests and have worked closely with government agencies across disciplines to create this new device. Many users said they felt more comfortable in the city without people looking at them and felt independent for the first time after becoming blind.

In addition, Chieko shares her advice for the next generation. She says that if you're interested, then jump in and it is always good to understand human behavior. She recommends communicating and collaborating with people from different backgrounds. She also suggests understanding the needs of target users and seeing the need through their eyes. Then, you will create a more useful product and have more impact. In terms of interdisciplinary professionals, Chieko says it is good to talk to people with different perspectives from various professions. Whether you are early or mid-career, there is great potential in accessibility beyond disabilities for the general good. Chieko says to define accessibility research for yourself by assuming and imagining that you have the disability, even though the experience is limited. She also suggests talking to real users to understand familiarity. Then, find out what and how technology helps. Lastly, she encourages you to create a proposal on your obtained knowledge on how technology can help users improve their life.

Next, Sabrina and Chieko discuss AI and how it will help with accessibility. Chieko says that AI can help visually impaired people identify all the text and that there has been remarkable progress in AI. In the future, she envisions advancement in automatic capturing for videos and real time footage. She also doesn't want to overwhelm visually impaired users, but to help them prioritize the information so they can only get the information they need. Chieko is greatly looking forward to and committed to advancing research. It is very important to provide

opportunities for users to engage extensively with AI users and to experience the project for yourself in real world settings. She would like to see more social awareness in terms of people with disabilities like visually impaired people and to adapt accessibility. Her inspiration for the AI suitcase came from her own personal experiences. She was traveling with a suitcase and a cane at the airport, and found it was too much. She thought if she could Integrate technology in a suitcase, then it could be our travel companion and make our travel life much easier. The handle on the suitcase will vibrate on the right or left side when turning and it will stop when it is released. It can also detect obstacles and humans, and the distance to other humans. In closing, she says that we can make the impossible possible by never giving up.

Key takeaways:
0:00 - Welcome to *ACM ByteCast.*
1:57 - Chieko Asakawa's background and introduction.
3:15 - Chieko explains why she is working in this field of accessibility.
6:16 - Chieko also shares the challenges she has experienced along the way.
9:50 - Advice for the next generation.
11:25 - Advice for interdisciplinary professionals.
12:38 - Any tips for people who want to improve accessibility.
13:46 - Will AI help with accessibility?
16:20 - Chieko explains the AI suitcase project she is working on.
18:27 - Best practices she recommends.
21:15 - Policies she would like to see changed or enacted to help with accessibility.
24:32 - Inspiration for the AI suitcase.

Links
Learn more about Chieko Asakawa.
Learn more about the ACM ByteCast podcast at https://learning.acm.org/bytecast