Q&A with an accessibility research pioneer

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One of the world's premier accessibility researchers provides ins beginning to transform the lives of the visually impaired.

IBM Fellow Dr. Chieko Asakawa has dedicated her career to developing technolo more accessible for people with disabilities. Blind since the age of 14, Chieko ha pioneering accessibility technologies, including the earliest practical voice brow further opened the Internet to the visually impaired. As a visiting faculty membe University, she is now leading an effort to develop an artificial intelligence-powe blind and other disabled populations.

AI is going to allow blind people to "see" the world—and explore it. Right now, w
Cognitive Assistance Project for Visual Impairment. People with vision see the th
always have some context. For us [the blind] we don't have contextual informati
only when technology like computer vision is connected to knowledge and wher
provides location information. Also, vision and knowledge need to get to the hur
with them, something that is very important when an AI system is, for example,
providing context about the things around you while you are walking. We are wo
source NavCog app.

**In your 2015 TED talk, you gave examples of accessibility innovations that u
uses for other populations. Do you think NavCog will follow this same path?**

Helping the blind will be one of the hardest challenges for researchers, but the t
too. NavCog can be useful for people in wheelchairs. Recently, when I was trave
big suitcase, I couldn't find an elevator anywhere and I had to carry the suitcase
the same situation for someone in a wheelchair who needs a route to avoid step
need elevators and maybe help finding shops or recognizing items in a store if th
doesn't help when you're indoors.

Even people without accessibility issues can benefit. Think about when you trav
you can't read the signs or food labels or find a type of shop because you don't k

What technology allows the NavCog app to work indoors?

We use machine learning to teach the system to leverage sensors in smartphone
waves from beacons to determine your location. To provide detailed information
need to explore the real world, beacons have to be placed between every 5 to 1
into building structures pretty easily today.

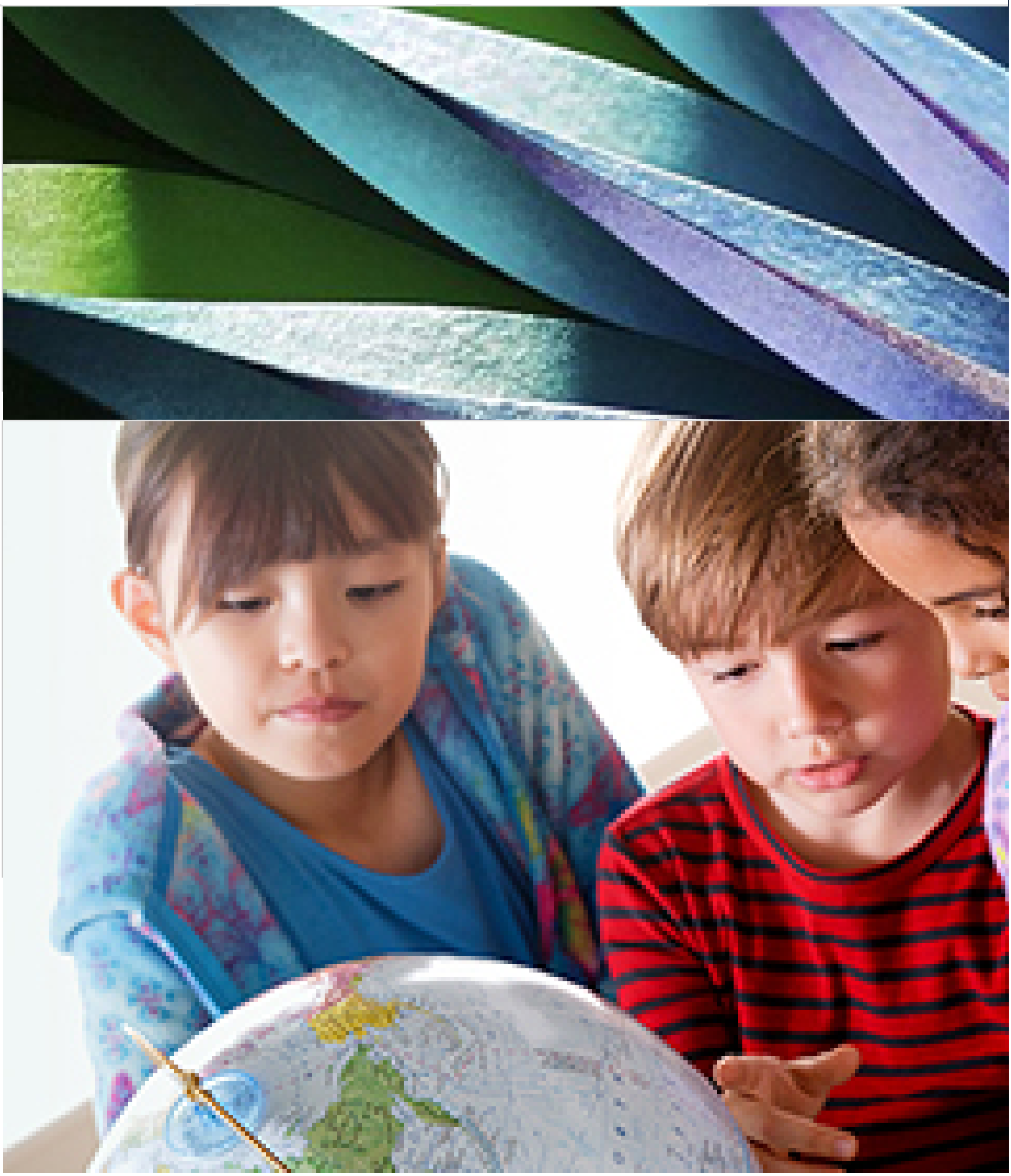
How does machine learning optimize the beacons?

Radio waves aren't always the same – they move. So we have to use machine le
calculate your most likely location. Thanks to machine learning, we can achieve
1–2 meters, which is important for the system to be effective for the user. We ar
machine learning algorithms to improve accuracy and reduce the number of bea
installed.

When AI is taken to the furthest extreme in our lifetimes, what will that look

people in wheelchairs—because AI-based cognitive assistants will supplement a
imagine in the future, you will be able to access information any time without vis
AI, many disabilities will no longer be as big of an issue. I wish I was born 30 yea
before then, self-driving cars may become available for the blind. I cannot wait u

Want to learn more?



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