Microsoft exec says coronavirus could spark big shift for AI in health care

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Microsoft chief technology officer Kevin Scott grew up fascinated by the 1960s Apollo space program and then-President John F. Kennedy's vision of a moon shot. Now, he envisions just as ambitious a project

taking shape as a consequence of the coronavirus pandemic.

Just as the U.S. government significantly invested to put Neil Armstrong and others on the moon by 1969—$200 billion in today's dollars by his estimate—Scott said similar funding in artificial intelligence technology could be a difference-maker for our nation's battered health care system.

Scott, 48, whose new book about AI will be released Tuesday, said using the technology to detect underlying health conditions could not only help treat patients and prevent the spread of future pandemics, but also reduce care costs for Americans, tens of millions of which are uninsured.

"Instead of a 'moon shot,' our moon shot should be something like radically transforming health care for the public good," Scott said. "We all know the cost of delivering ubiquitous, high-quality health care is very high and growing faster than (gross domestic product).

"So, if you want to change that calculus, you are going to have to have some sort of technology intervene that will help change the shape of the curve. I think AI, if we make a deliberate set of investments, can make than happen."

Scott wasn't focused on health care in "Reprogramming The American Dream: From Rural America to Silicon Valley—Making AI Serve Us All" (Harper Collins), co-written with Greg Shaw, but feels the pandemic has hastened the urgency behind themes within the book. He sees massive job losses caused by the coronavirus forcing a reckoning in which the public and governments must reimagine core elements of our health care system—and sooner than anyone expects.

"I think our reaction to this horrible pandemic we're having now could produce a wave of investment and innovation in biotechnology that

defines the next 75 years," he said. "The way that the industrialization of the modern world post-World War II has defined the past 75 years."

On the pandemic, he added: "If you imagine the safety net that people need right now, given the economic disruption, having that ubiquitous, cheap, high-quality health care would make an enormous difference in people's lives."

What separates Scott from theorists and activists seeking domestic health care transformation is he's a powerful executive of a global tech leader already applying AI to medical science—including within the coronavirus fight.

Scott and Microsoft have spent recent weeks working with Seattle-based Adaptive Biotechnologies on using AI to map the body's immune system and how it reacts to individual diseases. Adaptive hopes to soon get a test for COVID-19—the illness caused by the novel coronavirus—into clinical trials, and having a detailed map of the body's unique reactions to it would hasten that process.

Microsoft has used similar AI machine-learning tools in work with ImmunityBio to model the movement patterns of the "spike protein" of the SARS-CoV-2 virus that causes COVID-19 to enter human cells. Doing that within weeks, instead of the months it typically takes, should help scientists working on COVID-19 treatments and vaccines.

Beyond the coronavirus crisis, Scott is mindful of what such mapping and early detection can mean for individuals.

"There are a whole range of machine learning systems that are getting better and better all the time at diagnostics," he said. "And so, one of the challenges with providing good health care is detecting when someone is sick as early as humanly possible. So, the earlier you know that someone

is sick ... the higher the probability that they're going to make a better recovery and get back to good health and productivity quickly."

The book mentions Cardiogram, a San Francisco-based company Scott is an investor in, which has an application that uses heart rate data from fitness bands and smartwatches to predict conditions like stroke-causing atrial fibrillation, hypertension and Type 2 diabetes.

Scott also noted how biometric sensing "smart rings" are being worn by health care workers at Zuckerberg San Francisco General Hospital that monitor body temperature, heart-rate data and blood oxygen saturation to predict early onset of COVID-19.

"So, if you just imagine what would happen to a world where, for this whole range of conditions you'd have a combination of cheap, wearable biometric sensing ... that really could just fundamentally change the cost of health care and the general wellness of people that would have access to these technologies."

And access could be universal, he said, as the cost continues to decline.

But like anything involving change, acceptance of AI is a work in progress. A recurring theme in the book is how views on AI range from utopian goodness and advances for mankind to dystopian disruption where machines take jobs and enslave.

Scott is sensitive to the latter, having grown up poor in rural Appalachia, where his book depicts his unincorporated hometown of Gladys, Virginia, as once surrounded by lush green tobacco fields supporting jobs long since lost. As a child of the 1970s, his bookshelf contained science fiction tomes, a favorite being Damon Knight's 1950 short story "To Serve Man"—popularized by "The Twilight Zone" television show, and a more modern Halloween classic "Treehouse of Horror" episode of

"The Simpsons."

Playing off the double-meaning of the verb "to serve," the story depicts aliens visiting Earth with gifts to ostensibly serve their human hosts. Instead, it's discovered the aliens' true intention is serving up humans on a dinner plate.

Scott's own book is ever-conscious of such "eat or be eaten" questions on AI and whether it will put food on tables or get people swallowed by machines. It mentions Appalachian locals remaining skeptical of AI taking their jobs, despite the technology now sustaining a fledgling manufacturing sector there and helping farmers plot where to better grow crops.

Like any technology throughout history, the book says AI can be used and abused, and concludes by saying that's why broader-based conversations must start with expectations and how to implement it.

An ardent privacy advocate, Scott is aware that for every company wanting employees wearing wristbands to predict and maintain health, there are staffers fearful of bosses using such data to justify terminating their employment.

But he also knows the world's shifting demographics mean aging retirees will eventually outnumber workers able to properly care for them, and that AI can play a role in performing health care tasks—well after this current pandemic subsides.

"I think this moment is going to create a pressure to do things in a different way," he said. "We hopefully will use the moment for good."

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