

## Mohamed Ahmed

### **IBM Distinguished Engineer, Director, AI Applied Research Lab**

At IBM, Mohamed Ahmed has successfully created new ideas and innovations, made the investment case, then delivered business value for clients. He has accomplished that by working across IBM operations—Research, Watson, Systems, GTS, Cloud, and Global Markets—to create technologies tailored to the artificial intelligence needs of the U.S. Federal government.

That domain gives Ahmed ample satisfaction. The Federal sector, he believes, understands the need to take advantage of AI to deliver intelligent, agile, secure and efficient services to citizens.

Along with being named an IBM Fellow, Ahmed intends to drive the public-sector business forward in his new role as IBM's CTO for Federal AI and Cognitive Solutions. In that position, he will serve as the senior technical leader of the Federal Cognitive Enterprise effort with the goal of driving growth and achieving expanded market share.

Ahmed believes the team's accomplishments to date will provide a solid foundation both for growth and for technology leadership. He points to a recent federal government project as an example of using AI for the public good.

To detect threats more effectively while keeping airport lines moving, this federal agency is upgrading to computed tomography (CT) scanners. A key advantage of CT scanners is that they can display 3D images, as opposed to the flat, two-dimensional views produced by most existing equipment. This improves the ability to identify contraband that may be camouflaged to look like commonplace items. However, better detection occurs only if there are algorithms that can read the images.

To that end, Ahmed led a team of AI and machine learning developers. "We partnered with this agency to develop 'first of its kind' AI algorithms that look at the 3D CT scan and apply deep learning to be able to determine the presence of prohibited items," Ahmed says.

The effort has received accolades from both the government and IBM, including the ACT-IAC Igniting Innovation award and the IBM IDEA award.

### **Leading the Way in Real-World AI**

AI that benefits the public is at the heart of another high-impact project that assists citizens following natural disasters like hurricanes. "We collaborated with a major non-profit organization to develop a virtual advisor that can understand natural language," Ahmed says.

IBM used its hybrid cloud-based Cognitive Automated Response Learning Agent (CARLA) technology to create a helpful virtual assistant. "Previously, people were on the phone for hours trying to get answers to basic questions," Ahmed explains. "Now, with CARLA, they can interact with a virtual assistant and get answers quickly. They can also schedule appointments and check on the status of their relief applications."

CARLA for this non-profit organization has seen service following three hurricanes—Irma in 2017, Michael in 2018 and Dorian in 2019—and proven its ability to help communities get back on their feet.

According to Ahmed, these two projects constitute two powerful examples of how IBM is leading the way in real-world implementations of AI and machine learning. "We want IBM to be the trusted partner for digital transformation," Ahmed says.

As an IBM Fellow, Ahmed intends to continue driving innovation, with a special emphasis on the next generation of technical talent. Since he joined IBM in 2010, and during a decade-plus of experience as an adjunct professor at the University of Louisville, Ahmed has displayed a commitment to developing deep technology skills in his colleagues and students. He has mentored more than 100 professionals.

"I like to teach and mentor, taking the practical experience that I've got and passing it on," Ahmed says. "Coaching and mentoring people who may one day want to become an IBM Fellow is a big part of what interests me."

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