How Machine Learning Could Change Your Job

Many government agencies are exploring how artificial intelligence (AI) and machine learning (ML) could augment the workforce. The goal is not to eliminate jobs but to streamline routine tasks and make vital information more readily available to federal workers who need it.

At a recent GovLoop virtual event, federal and tech-industry experts brought to light some key examples of the ways in which AI and ML will reshape how agencies operate.

Here are some of the key benefits our speakers identified:

Giving Easier Access to Information

In support of its 65,000 employees, U.S. Customs and Border Protection (CBP) is exploring AI's ability to help people get faster access to information — and make better use of the information on hand, said **Sunil Madhugiri, CBP's Chief Technology Officer**.

"We are building proof-of-concepts to see how best we can help our employees, especially our border officers and agents," he said. Natural language processing could make it easier to query systems and get meaningful results, for example, while predictive analytics could help agents make informed decisions based on the information they surface.

Reducing Repetitive Work

At the Internal Revenue Service (IRS), "we're starting to explore where we can use [AI and ML] to leverage efficiency gains in the way we operate in some of our processes — to increase productivity, to drive innovation and to discover opportunities," said **Karen Howard, Executive Director of the IRS's Office of Online Services**.

In particular, the agency is looking at AI to help reduce time spent on repetitive tasks. "Things like robotics and other process advancements will be key" to that effort, she said.

Driving Deeper Insights

With AI's ability to surface important new information more effectively, employees engaged with data-driven functions will have access to deeper insights, said **Kahlil Gonsalves, Senior Lead for Solutions Architecture Federal for Civilian Agencies for Elastic**.

For example, "some of our research laboratories are doing amazing things with information," he said.

At CERN, which operates the world's largest particle accelerator, "they're creating petabytes of data, and they're taking immense models of machine learning to find anomalies, to find sentiment, to find where things may align or where they may not align — and at a speed that a human would not be able to do this."

Even non-research agencies could benefit by delving into their own data holdings. "We see the capabilities for government agencies to use their internally developed data sources to train on," he said. "That allows for more concise information to be returned … in a relevant fashion that means something for that particular agency."

Empowering Individuals

One way to incorporate AI is through robotic process automation (RPA) — software that is trained to carry out repetitive tasks. Through RPA, AI could potentially free federal employees from a lot of mundane work, Madhugiri said.

In looking to take advantage of this capability, CPB is empowering individual workers to define how automation will be of most help to them.

"We allow these very, very smart folks we have in the field to do some dashboarding on their own, some of the creation of queries on their own," he said. This enables those workers to focus the benefits of RPA on the border activities where it is needed most.

Improving Decision-Making

AI and ML can help people throughout the organization use data to make quicker and better decisions. But technology is only part of that equation, said the IRS's Howard.

For leadership to make the most of AI's potential, "you also have to look at the culture that you're bringing it into: What training needs to happen? How do you upskill employees?" she said.

As part of that culture change, it's important to implement a feedback loop to drive iterative improvements. "If we can leverage processes, people and technology — all wrapped around innovation — to deliver a better overall experience, that ultimately will lead to us getting a win out of machine learning and beyond," she said.

Improve the Employee Experience

By surfacing and making sense out of data at machine speeds, AI will help build a more holistic view of agency operations, said Gonsalves. "It will allow for the identification and curation of information to be developed and delivered to an individual, in a way that would have taken them hours or weeks to curate on their own," he said.

That ability to ask questions in ordinary human language and get intelligible answers back, often in real time, could be a game-changer in helping federal employees be both more productive and more satisfied in their jobs.

To get there, agency leaders will need to engage with the workforce as they seek to bring AI to life in support of mission outcomes.

"When you invite them into the process, you get a lot more buy-in, because you're not coming in and threatening their way of doing things," Gonsalves said. Then AI becomes a true partner, enabling federal employees to do their best work on behalf of the American people.

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