



The perfect storm behind the rise of AI

More data, affordable computing power and better algorithms are making AI accessible for government



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a powerful way to understand present conditions and predict future conditions. Given enough rich, high-quality, unbiased data, AI gives us the ability to create models that continue to learn and provide meaningful insights on an unprecedented scale.

Other analytics techniques do not require as much data to gain some understanding, but when there are massive amounts of data, machine learning and deep learning can produce more powerful insights, particularly when it comes to the sort of unstructured data agencies are awash in – free-form text, audio and video.

With AI, agencies can take advantage of object classification, video analytics, natural language processing and translation of unstructured data.

Ultimately, the technology gives us the ability to understand the present better by uncovering patterns and features that would have eluded humans or other analytics techniques.

Using data to understand and predict

We humans have a fundamental desire to answer four key questions: What is going on? Why is it happening? What's going to happen next? And how can I influence it?

The government exists to help and protect people and our interests. To do that, it needs to understand current conditions in a range of areas – including social, economic and military defense – and be able to predict what might happen next. The more data the government can collect and

analyze, the better it can protect us and our interests.

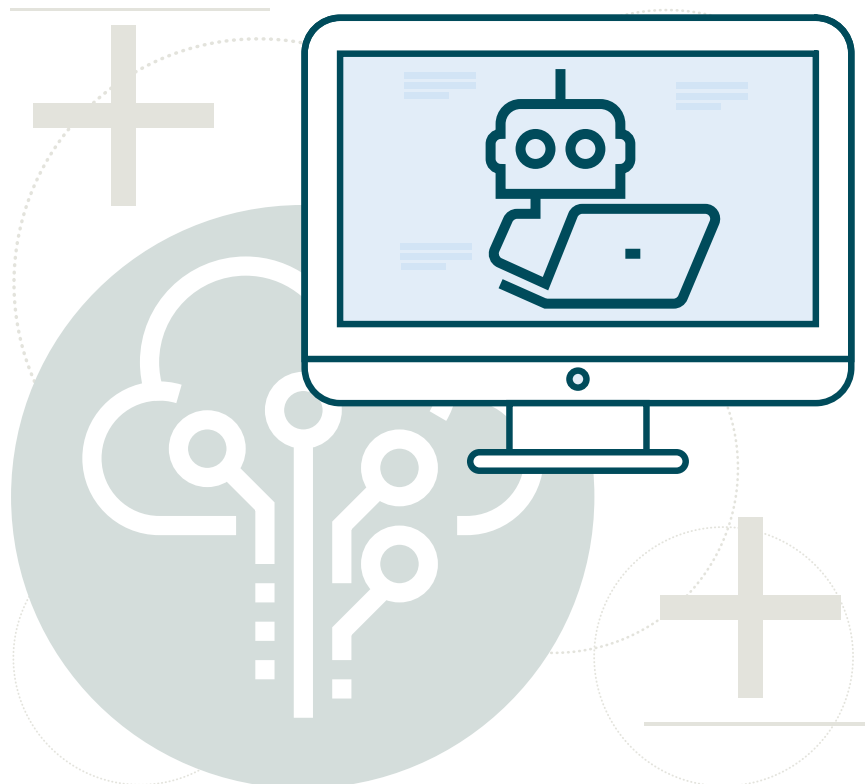
The ideas behind AI are not new. However, three elements have come together to create a perfect storm and push AI to the forefront. First, our ability to capture more digital data has grown exponentially. Although we've understood some basic ideas about machine learning and deep learning for decades, it's only been in the last decade that we've had enough data to use those techniques in interesting enterprise, research and government applications.

Second, the advent of powerful

processors and the adoption of graphics processing units make it possible to perform a tremendous number of computations on a vast amount of data. Along the way, the algorithms used for those computations have matured, adding the third element to the perfect storm for AI adoption.

Making sure AI is a force for good

Companies like Dell have helped commoditize computing and put it in the hands of government, companies and consumers. We provide vast storage capabilities for collecting and managing all that data, and together we can use advanced





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AI techniques to get new meaning out of that data.

For instance, we can use AI to better understand cyberattacks and intrusion attempts on government networks and use AI-trained imaging to better understand threat conditions. In terms of public safety, AI tools can be trained to recognize the distinctive sound of a gunshot or identify human cries for help. We can also use AI in

combination with simulation to understand how forest fires may evolve and thus save more people and more property.

We should embrace the tremendous positive power of these capabilities for government, industry and research while making sure to understand AI's limitations and risks. Creating effective policies to ensure fair, responsible application of the technology becomes even more important

now that we have systems that can learn, act and make decisions, even autonomously if we wish. We must be especially careful about how we collect and use the data to train those systems so that we protect against misuse and ensure that we achieve only positive societal impacts. ■

Jay Boisseau is AI and HPC technology strategist at Dell Technologies.

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