

Delivering AI to the edge

An enterprise data cloud platform can help agencies deploy AI capabilities at scale and at speed

Successful artificial intelligence deployments depend on a robust data management infrastructure that supports machine learning, data science and the ability to manage the data lifecycle.

AI involves a fairly complex mix of high-end mathematics, code deployments, security, and data infrastructure, so in order to successfully deploy AI, organizations have to be willing to invest in the technology, people, and processes to support it.

“Those that win will not necessarily be the ones with the best or most sophisticated algorithms, but those who can deploy their algorithms and the data those algorithms need, at scale and at speed,” said Timur Nersesov, professional services manager, at Cloudera Government Solutions.

Organizations must first understand what it means to be AI capable, he said. The machine learning, data science piece is just small part of what an organization needs to support a functioning and competent AI/ML capability. They also need a surrounding infrastructure, which is vast and complex.

All competitive AI and ML depends on data availability and integrity, which means agencies must correctly prepare the data to be used by those algorithms. “Without good data there is no AI,” Nersesov said. “Your algorithms can only take you as far and as fast as your data infrastructure and operations will permit.”

Most organizations struggle with getting their AI applications, algorithms, and outputs to the field, he said. Building AI/ML capability starts with building a data management infrastructure and ends with efficient MLOps, which applies DevOps principles to machine learning systems.

“Getting to field an AI capability means managing data flow from the

edge...to the application layer where it is processed into action and insight,” he said. The successful enterprise is the one that can do that quickly, in the least number of steps, with the greatest data context, consistency, and security.

Cloudera’s enterprise data cloud can help agencies manage their data flow from the edge to AI. The Cloudera Data Platform (CDP) brings together many point solutions across that lifecycle in an integrated framework that has shared security, governance, and is cloud native.

“The platform itself and the solutions that it brings together address that full lifecycle,” he said. “It’s intended to be used with flexibility and recognizes the various legacy implementations, the transitions that are happening, and the future needs of different environments.”

It is built for the hybrid cloud and seamlessly connects on-premises environments to the cloud environments, and is cloud provider agnostic. It allows data integration and portability, and brings security, data context and governance under one framework. This allows data and

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workloads to be shared, secured and administered across CDP deployments.

CDP is designed for AI, Nersesov said. In addition to tackling the data management and security challenges fundamental to AI, the platform also includes a Cloudera machine learning experience (CML.)

CML is cloud native and provisions clusters that run natively on Kubernetes. This enables data scientists to ultimately deploy ML models all on the data under one management platform and enterprise data cloud.

A comprehensive AI/ML capability must function seamlessly across the entire data lifecycle, which means agencies need to be able to access any tier, and all the data that lives there, across all the platforms that is stored on, he said.

“Just because you have the data doesn’t mean you can do anything with it. The data you might need may live in many different places at the same time.”

Cloudera’s framework asks agencies to “look at the lifecycle first and then think of the solution.” In order to implement a solution, agencies need to know the use case they are addressing. For complex agencies such as the DOD, this can be a challenge.

Cloudera can help agencies ensure that the technology matches their use case and supports ML operations to support that tool with the mission at the pace the mission needs. “It’s critical for every organization before they set off on the AI/ML journey to understand what end goals they can support.”