Four Strategic AI Approaches

Executing a democratized AI strategy that will achieve
mission outcomes faster, better and smarter.

Artificial intelligence has only begun to drive breakthroughs in automation and decision-making across federal agencies and the citizens whom they serve. By enabling agencies to make better decisions, streamline operations, and reduce risk, AI can have significant impact across departments in areas such as fraud, waste and abuse, supply chain, cybersecurity and mission specific objectives.

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Further opportunities remain to orchestrate how this data can advance AI for government.

Specifically, augmenting data orchestration with tools that will empower data scientist teams to develop machine learning models quickly, accurately and responsibly will democratize AI. Agencies should consider executing on four strategic approaches to ensure that the adoption of AI tools will expand its positive effects on mission effectiveness.

1. Make machine learning models and AI applications that are accessible, accurate and fast.

Data is often inaccessible because it is siloed, voluminous and in unstructured formats such as text and images. Additionally, the timeline of AI outcomes takes weeks, even months, before true value can be created and consumed. AI automation tools reduce the timeline of AI outcomes to days by allowing data scientists to create and test highly accurate and robust models with state-of-the-art automated machine learning (AutoML) that spans the entire data science lifecycle.

AutoML can also process a variety of data types within a single dataset. Making AutoML accessible to data scientists of all expertise levels achieves operational excellence at scale, allowing agencies to move faster and with transparency, save time and money, improve constituent and civil service, and foster government employee satisfaction.

Finally, As data scientists start to identify features that ensure the quality and consistency of models specific to providing the right outcomes, platforms that make it easy to organize, govern, share and operationalize these valuable features will increase the pace of federal government innovation and deliver impactful AI outcomes faster.

2. Operate AI applications with agility and confidence.

For agencies to bring AI in house, data scientists must know that deployed models are operating as intended. They require a comprehensive suite of capabilities surrounding machine learning operations that support them in the deployment, management and monitoring of their models in production.

It will be important to provide data scientists these capabilities on a flexible architecture with distributed processing, optimized compute efficiency and the ability to deploy in the environment of choice. Customization should also be well supported with easy integration of transformers, recipes and models.

3. Innovate with an enterprise AI platform that will enable a broad set of personnel to build AI solutions.

Democratizing AI requires the merging of powerful models with intuitive experiences that users of all technical abilities can consume. Simplifying the delivery and consumption of complex solutions means that more people can access and participate in innovation efforts.

AI platforms should support rapid prototyping and solution development, while also fostering collaboration between technical teams and business users. This is the catalyst needed to move agencies from big ideas to tangible impact with comprehensive machine learning capabilities, robust explainability, low code development frameworks and integrated machine learning operations.

4. Create and manage a Responsible AI program so that AI results can be explained, understood and trusted.

Like humans, AI is known to make errors and exhibit bias. Because of the types of information AI processes for government organizations, it's important to understand and track how algorithmic output influences human decision making. Explainable AI helps data scientists easily understand the 'why' behind model predictions at both a global level (across a set of predictions) or at a local level (for an individual prediction).

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Model performance should be easily captured and recorded with automatic model documentation that describes the experiment process, model tuning results, variable importance, model importance, model performance and detailed settings for reproducibility.

Machine learning operations (MLOps) allow agencies to automatically monitor models in real-time and set custom thresholds to receive alerts on prediction accuracy and data drift. This helps guarantee deployed models are operating as intended. ∎

About The Author

Ro Dhanda is H2O.ai's Vice President, Federal. H2O.ai delivers the H2O AI Cloud, an end-to-end platform that solves complex problems and accelerates the discovery of new ideas with results that customers and users can understand and trust. H2O.ai's comprehensive automated machine learning (AutoML) capabilities transform how AI is created and consumed by offering feature transformation, model building, Explainable AI, ML Ops and AI application development. H2O.ai has built AI to do AI, making it easier and faster to use, while still maintaining expert levels of accuracy, speed and transparency.

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