



# Artificial Intelligence and Machine Learning

**Data is the new currency. From healthcare to national security to IT and cyber operations, data transforms how markets operate, organize, and innovate. And AI transforms data into insights and action.**

Across every domain and industry, Leidos helps our customers adopt artificial intelligence (AI) and machine learning (ML) solutions that turn data into new opportunities for insight and efficiency.

The power of AI and the algorithms that drive it, like machine learning and deep learning, is the ability to combine large amounts of data from various sources to generate insights and automate complex tasks. ML can identify subtle and complex patterns in data, extracting valuable information, and delivering critical insights. AI enhances the human experience no matter where it's used, from the battlefield to the marketplace. AI algorithms are the new building blocks of systems that can solve problems, aid humans, save lives, and minimize tedious work.

## OUR APPROACH

The Leidos approach is delivering Trusted AI. We combine cutting edge technology that makes AI and ML algorithms reliable, resilient, and secure with tools that increase human trust by providing transparency and eliminating bias. However, human trust requires more than tools and technology. It requires a robust test and evaluation process that assures these technologies are effective and safe to use. And most importantly, trust in AI requires a tailored process where the level of automation increases gradually through stages, reducing risk and assuring human control and governance.

Our disciplined, trust-based approach distinguishes our solutions and enables us to transform the way many industries operate. We have extensive experience in both the public and private domains and can bring our expertise to any environment where customers want to introduce AI and provide immediate impact to an organization's technology strategy. Our partnerships with public service and military customers give us the skills and knowledge to secure data, use it in the most efficient and scalable way, and apply the right AI and ML models to make it work for you.



OUR CAPABILITIES

Using our broad domain knowledge and experience with diverse data and missions, the Leidos AI team guides customers through an incremental process to create and execute a customized strategy for introducing trusted AI. First, we assist customers with their data identification and organization, helping reduce the overall timeline to introduce AI. Working with our customers, we analyze potential opportunities to generate value through AI, prioritizing those where AI offers the greatest value. As we introduce AI, we focus initially on solutions where AI assists humans to do their work more efficiently, for example, by sifting through data to help improve decision-making processes. As user trust grows and human feedback is incorporated into the AI, humans work as partners to inspect, analyze, and confirm potential options presented by the system. As more and more human feedback is incorporated, the AI is ready to autonomously handle the human tasks, though humans always remain in control of critical processes.

Leidos uses this incremental approach to minimize the inherent biases that typically impact the design and development of automated solutions. Think of biases as our digital fingerprints that we leave on data, the algorithms we develop, and even in the way we interact with technology. Leidos' AI experts help reduce biases through a variety of ways, including analysis of all data types (structured and unstructured), combining both AI- and human-led algorithms, and offering visibility into how it arrives at decisions.

We believe that AI is a true partnership between technology and humans, with each stakeholder playing a critical role in how the other works. As technology advances, so does our approach and flexibility to adapt to it.

FEATURES

BENEFITS

Sifts through both structured and unstructured data to surface more complete insights and identify trends earlier.	Identifies risks and opportunities faster and provides more in-depth analysis.
Organizes large quantities of data faster than humans.	Reduces the time it takes to collect data, allotting time for the more critical tasks of analyzing and discovering insights.
Provides collaborative decision-making features that aid with data analysis.	Reduces the time it takes to make decisions based on data.
Executes complex work processes end-to-end by combining data with human-created decision trees.	Decreases reliance on humans for time-intensive processes while increasing efficiency of the processes.
Processes large amounts of data to detect hard-to-find patterns and trends.	Optimizes processes more efficiently and effectively as errors and flaws can be corrected faster.
Delivers in-depth analysis of unstructured data and identify security risks earlier.	Increases tech stack security as security flaws are identified and fixed before they become an issue.
Combines previously isolated and unused data to identify areas for improvement.	Improves innovation levels for organizations, providing opportunities to enhance processes, products, services, and more.
Provides full visibility into automated algorithms.	Fosters trust between humans and computers, as AI/ML solutions depend on both to work effectively.



PROVEN SUCCESS

Leidos' in-depth understanding of our customers, their data, and their missions allow us to deliver AI/ML solutions that immediately provide real value, including:

- ▶ Reduced a large-scale military vehicle's daily operating costs by 65% (from \$700,000 per day to \$20,000) while eliminating the human risk for personnel using the vehicle for hazardous missions.
- ▶ Developed a more efficient cyber threat identification tool for the intelligence community that incorporated more unconventional data sources than were used previously. Threats were identified much earlier than before, allowing organizations to harden their security postures in advance of any attacks.
- ▶ Leidos developed an unmanned surface vessel for a U.S. military branch that is capable of fully autonomous operations and navigation. The vessel is a new class of warship that uses artificial intelligence in place of a crew.
- ▶ Leidos transforms data into insight for the intelligence community, using AI to extract and enrich petabytes of heterogeneous data.
- ▶ Uncovered new performance estimation techniques for the oil and gas industry by gathering, identifying, and analyzing complex data sets from isolated and proprietary data stores.
- ▶ Generated new insights for the healthcare industry by bulk processing thousands of academic papers with natural language processing. The AI tool then combined the data with existing, proven healthcare models to generate new causal links for cancers and other illnesses, helping medical professionals recommend previously unknown treatments for them.



## WHY PARTNER WITH LEIDOS?

As a leading provider of data-rich solutions for the public and private sectors, we understand our customers and their data. By combining that understanding with our expertise in designing and building AI/ML systems, we're able to accelerate solutions that provide immediate value for our customers' most pressing problems. Our knowledge of the underlying landscape in many domains allows us to take a disciplined, science-based approach to AI/ML that distinguishes our solutions. We'll help create the AI -ML solution your organization needs to compete today and in the future.

## NEXT STEP

At Leidos, we pride ourselves on creating solutions to technically challenging problems of global importance. When deployed correctly, AI/ML has the power to do incredible things. For reliable, resilient, and secure AI/ML solutions, contact us today.



## FOR MORE INFORMATION

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