

How Can Your Organization Benefit from New Al/ML and NLP/NLU Technology?

Unlock the true value of your data with the **COMPENDIA**[™] Insight Engine



Introduction

With new data analysis technology now providing futuristic functionality at compelling price points, Chief Information Officers, Chief Technical Officers, and Chief Data Officers across a broad spectrum of industries are enjoying cost-saving and money-making benefits that were not possible before.

The question is: how can your organization benefit from this powerful new AI/ML and NLP/NLU technology?

To find your answer, let's take a look at how this technology is being used today.

HOW CAN YOUR ORGANIZATION BENEFIT FROM THIS POWERFUL NEW TECHNOLOGY?

ANALYZING

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How are government organizations using AI/ML and NLP/NLU?

The official Federal Data Strategy action plan¹ is guiding government agencies and departments to deploy powerful data analysis solutions that combine technologies such as artificial intelligence (AI), machine learning (ML), natural language processing (NLP), and natural language understanding (NLU).

Federal, state, and local government organizations are applying this technology to solve *all kinds* of challenges.

FINDING VALUABLE DATA

At the Los Alamos National Laboratory's National Security Research Center (LANL NSRC), researchers use AI/ML and NLP/NLU to help find crucial data buried in more than 50 million pages of information, thus saving more than **400 years' worth of staff research time**²

Implementing AI/ML is a mission-critical task for the Center's collections to be accessible to researchers."

- Rizwan Ali, Director of LANL NSRC



^{1. &}lt;a href="https://strategy.data.gov/action-plan/">https://strategy.data.gov/action-plan/

^{2.} https://discover.lanl.gov/publications/national-security-science/2021-summer/archives



• U.S. DEPARTMENT OF LABOR

The technology has evolved with AI, ML and other tools to allow us to reintegrate the data that was so fragmented."

87 457

-Gundeep Ahluwalia, Dept. of Labor CIO

ANALYZING UNSTRUCTURED DATA

U.S. Department of Labor CIO Gundeep Ahluwalia stresses the importance of overcoming data fragmentation³ to help agencies deliver on their missions, and the importance of advanced data analysis technologies to accomplish that goal.

Previously, pieces of data were created that were fit for one purpose only. This was the approach for decades, and it created massive amounts of fragmentation across departments and agencies.

"This fragmentation has to go away," Ahluwalia said. "I am truly so proud to say that this is one of the key areas for the department at this time. You have to integrate data; you have to learn from it, and not only learn from it, but serve that meaningful information to the right person at the right time."

^{3.}https://www.meritalk.com/articles/labor-dept-cio-ai-ml-key-to-integratingpreviously-fragmented-data/



ORGANIZING SCATTERED DATA

The U.S. Army's Data and Artificial Intelligence Team shapes a Talent Management System that uses optical character recognition and NLP to process paper documents and occupational survey information in order to develop useful job competency models⁴.

They are also leveraging machine learning models to predict attrition as well as the best-performing targeted retention incentives. These models — used in tandem and informed by a number of retention incentive randomized controlled trials — will provide a powerful toolkit for Army leaders to provide incentives that are most likely to keep those who are most likely to leave.

U.S. ARMY Data and Artificial Intelligence Team



We're migrating a huge portion of our personnel data from 187 different disparate systems into a smaller number of data warehouses and enterprise systems."

- Kristin Saling, Chief Analytics Officer & Acting Dir. Army People Analytics

^{4.} https://www.forbes.com/sites/cognitiveworld/2021/08/28/how-the-united-states-armyis-leveraging-ai-interview-with-kristin-saling-chief-analytics-officer--acting-dirarmy-people-analytics/?sh=1137f9e5cc34



How are government organizations using AI/ML and NLP/NLU?

OTHER AI/ML & NLP/NLU GOVERNMENT USE CASES



LEGAL TASKS

Government agencies use AI/ML and NLP/NLU technology to reduce the massive amount of time needed to cull through documents when responding to FOIA and Legal Discovery Processing tasks. In addition, regulatory compliance and contract reviews can now be finished faster and more comprehensively.



MILITARY STRATEGY

Intelligence agencies can generate a more transparent breakdown of a military adversary, improve their ability to detect financial crimes and fraud, and perform more sophisticated counterintelligence and damage assessments.



FAMILY BENEFITS

Departments of Family Services can analyze a broader range of information to generate a more complete profile of what type of government services a particular family might need, given their situation.



These AI techniques are extremely powerful, and they are helping us to shepherd in a new era."

Dr. Matthew Solomon, Permanente Medical Group

- 5_https://www.infoworld.com/article/3630517/machine-learning-is-moving-beyond-the-hype.html
- 6. https://aithority.com/machine-learning/is-your-data-ready-to-fulfill-the-promise-of-ai/
- 7. https://www.healthcareitnews.com/news/kaiser-permanente-researchers-push-envelope-ai-and-nlp
- 8. https://www.information-age.com/three-use-cases-how-ai-is-helping-improve-the-healthcareexperience-123494858/

Who else is using technology driven by AI/ML and NLP/NLU?

An article from InfoWorld⁵ states that "Today, companies across every industry are deploying millions of machine learning models across multiple lines of business. Soon every enterprise will take part."

That sentiment is shared in an article found on Althority.com⁶, which cites medical research, mortgages, media and entertainment, oil and gas, and transportation as just a few of the many industries using Al/ML to solve complex business problems.

SAVING LIVES WITH AI AND NLP

In some cases, this technology can literally mean the difference between life and death. An article from Healthcare IT⁷ news mentioned that Kaiser Permanente researchers used AI and NLP to identify nearly 54,000 patients with valvular heart disease in mere minutes, saving years of manual research time. Furthermore, healthcare organizations can use AI to analyze unstructured data to possibly determine the causes of – and a cure for – ALS, according to this article from Information Age⁸.

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Who else is using technology driven by AI/ML and NLP/NLU?

SOLVING GLOBAL PROBLEMS WITH ML

By applying machine learning to the wealth of available Earth observation data, answers could be found for many pressing questions and problems in Earth science, from detecting and predicting changes in Earth's ecosystems in response to climate change to understanding interactions among the ocean, atmosphere, and land in the climate system.

Patterns and trends that are not apparent to human analysts can be discovered from within vast volumes of data, as discussed in this article from Eos⁹.

THE APPLICATION OF ML TO THE WEALTH OF EARTH OBSERVATION DATA WILL PRODUCE ANSWERS FOR MANY PRESSING PROBLEMS."

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^{9.} https://eos.org/science-updates/advancing-ai-for-earth-science-a-data-systems-perspective



Who else is using technology driven by AI/ML and NLP/NLU?

AI/ML & NLP/NLU CORPORATE USE CASES



RECRUITING

Human Resource Departments can comb through overwhelming numbers of job applicants to find those with all the required skills, clearances, and experience they need.



SECURITY

Security Departments can see signs of insider threats and enhance their investigative capabilities, even modeling terrorist attack profiles.

Lf.

BUILDING REPAIR

Facilities Departments can generate more thorough snapshots of facilities in need of repair, thus better prioritizing budgets and personnel to go where the need is greatest.



Who else is using technology driven by AI/ML and NLP/NLU?





TOP IT PRIORITIES





IMPROVE EFFICIENCY

INCREASE REVENUE

How do you know if AI/ML and NLP/NLU technology can help your organization?

START BY DEFINING YOUR MOST URGENT IT GOALS

Most likely your priorities would align with data found in this article by the Harvard Business Review¹⁰, which referenced a recent survey that found that 58% of middle-market IT leaders said their top priority was improving operational efficiency.

That figure far exceeded their second priority, which is increasing new revenue (36%). But IT leaders don't have to choose between operational efficiency or increasing revenue. Both goals can be supported by automating data analytics.

10. https://hbr.org/2021/10/automating-data-analysis-is-a-must-for-midsize-businesses

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Now let's take a look at your organization's situation.

UNDERSTAND THE VALUE OF YOUR DATA.

If your company is like most others, you have countless data files in structured and unstructured forms such as reports, research papers, articles, studies, images, diagrams, audio, video, presentations, social media, web pages, emails, etc.

However, if your data is sitting in antiquated systems, then it is not integrated or easily accessible. And that can be a problem, as there may be hidden data that could be used to drive future decisions to improve operational efficiency and increase revenue.







THIS PROBLEM CAN BE SOLVED.

You can unlock the true value of your data by using Compendia[™], an insight engine¹¹ developed by Titan Technologies.

By using AI/ML and NLP/NLU technology to pull together disparate data sets, Compendia[™] forms a more integrated, useful "picture" of any number of subjects. This contextual enrichment of your data will provide you with a deeper understanding of your target topics.

11. <u>https://titantechnologies.com/compendia</u>



Getting Started with Compendia

HOW DOES COMPENDIA WORK?

Titan's experienced and cleared software engineers and data scientists work in a collaborative fashion with our customers to integrate source systems, devise analog to digital conversion workflows, develop linguistics packages and other analytics, and tailor the Compendia™ user interface as needed to address complex research and intelligence analysis requirements.

BEFORE YOU BEGIN

Visit titantechnologies.com/compendia

You'll see all the key information about Titan Technologies' Compendia™ insight engine.

Compendia[™] delivers all the benefits of Al/ML and NLP/NLU technology to your team, reducing the time and cost to find crucial data that can help construct valuable new knowledge from your structured and unstructured archival material.

CONTACT US TO SCHEDULE A DEMO

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