

**EPLEXITY**

**aws** partner  
network

# Release innovation from within your organization with Machine Learning on AWS

# Contents

- 01** Introduction
- 02** Machine learning makes a grand entrance on the cloud
- 03** Machine learning starts on AWS more than anywhere else
- 04** The AWS approach to machine learning makes innovation contagious
- 05** Make better decisions to inform your course of action
- 06** Unlock information from documents and verbal language
- 07** Identify anomalies in your data
- 08** Recommend unique activities for customers
- 09** Predict maintenance requirements ahead of schedule

# Introduction

## INTELLIGENT COMPUTERS BREAK OUT OF SCI-FI TYPECASTING

For decades, dreams about computers coming to life with artificial intelligence (AI) have ignited our imaginations. From utopic to catastrophic, we've built galaxies and industries around tall tales of AI. The closer we get to it, though, the easier it is to see that we've misjudged the role AI will play in our lives.

Instead of shackling us to computers, AI empowers us to achieve digital transformation. Businesses today plan to use AI to make better decisions, unlock data in text and speech, identify anomalies, recommend products, predict maintenance, and more.

### AI lands a leading industry role with its machine learning prowess

Machine learning is the engine behind AI, and it isn't scary the way sci-fi movies would have you believe. As a general-purpose technology, you can apply machine learning to many different scenarios to fuel innovation and create new capabilities.

Machine learning works by using massive volumes of historical data and the probability of likely outcomes to refine mathematical models to better describe complex scenarios. Answer bias is not programmed into the system, meaning the data itself directs the modifications made to the model until the model reflects the data as accurately as it can. Once your model is ready (or trained) you can apply it to new data to better understand trends and likely outcomes.



AI is simply the program logic to interpret machine learning results.

# Machine learning starts on AWS more than anywhere else

Amazon Web Services (AWS) offers the broadest and deepest set of machine learning services, with more than 10,000 customers choosing AWS for machine learning.

Getting started is easy with pre-trained services, programs like Amazon SageMaker, and support for open-source frameworks. Once you have a strong foundation in place, the AWS Partner Network (APN) makes it easy to find partners with expertise in machine learning who can help you guide and maximize your investments.

With APN partners and the fully equipped AWS Cloud, you can feel confident that your machine learning projects will deliver results.

**“ALEXA, DEPLOY ML TO CREATE A GREAT CUSTOMER EXPERIENCE...”**

Applying machine learning across internal departments at Amazon.com has led to breakthrough innovation and improved customer experiences at a global scale. Trust the platform developed by ML leaders.



## **BROADEST SET OF ML SERVICES**

Access the broadest and deepest set of ML services to accelerate innovation



## **LOWER COST IN PRODUCTION**

Lower the cost of predictions in production—aka inference—by better balancing your compute needs



## **SUPPORT FOR A FAST START**

Execute ML projects faster with support from skilled partners and easy access to frameworks

# The AWS approach to machine learning makes innovation contagious



AWS offers a unique company-wide, company-directed approach to machine learning that empowers innovation from all areas of the business. It starts at the C-level with adoption of a centralized machine learning platform that provides easy access to users across the organization. A shared platform approach empowers groups to cross pollinate best practices and build on one another's ideas.

How you choose to write machine learning into your company's story is up to you.

## USE MACHINE LEARNING TO...



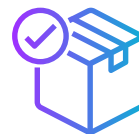
**MAKE BETTER  
DECISIONS**



**UNDERSTAND  
TEXT AND SPEECH**



**IDENTIFY DATA  
ANOMALIES**



**RECOMMEND  
PRODUCTS**



**PREDICT  
MAINTENANCE**

**USE MACHINE LEARNING TO...****Make better decisions to inform your course of action**

Businesses use forecasting to help them plan how best to move forward. You can improve the accuracy of your forecast by using machine learning to train models with historical and third-party data and then apply that to new information as it becomes available.

**Different departments within the same organization can use machine learning for:**

- Revenue forecasting (Finance)
- Benefit planning (HR)
- Promotion planning (Marketing)

**Across industries, machine learning helps with forecasting and planning activities, like:**

- Inventory planning (Retail, manufacturing, industrial)
- Shipping logistics (Transportation)
- Price planning (Airlines and hotel)

**USE MACHINE LEARNING TO...****Unlock information  
from documents  
and verbal language**

A lot of valuable information still exists in paper documents and auditory recordings today. By making this data available electronically through machine learning, you can include it in your queries, which opens up new avenues for unlocking insights and solving problems.

**Different departments within the same organization can use machine learning for:**

- Contract management (Legal)
- Resume digitization (HR)
- Chatbot intelligence (Customer service)

**Across industries, machine learning makes nondigital data available for analysis, like:**

- Patient history (Healthcare)
- Bill of Sale documents (Shipping)
- Attendant monitoring (Call center)

**Paper doesn't have to be a dead end!**

Document indexing extracts text and data from virtually any document without the need for any manual effort or custom code, while natural language processing translates voice recordings into searchable data.

## USE MACHINE LEARNING TO...

# Identify anomalies in your data



Unusual behavior or circumstances will often trigger deviations in data. Machine learning establishes a baseline that you can use to detect anomalies in new data in real time in order to isolate issues before they get out of hand.

### Different departments within the same organization can use anomaly detection to identify:

- Security threats (IT)
- Identity theft (HR)
- Fraudulent purchases (Sales)

### Across industries, machine learning detects data anomalies that may indicate issues with:

- Unauthorized account access (Banking)
- EKG irregularities (Healthcare)
- Temperature control (Industrial)

## IoT sensors extend data anomaly insights



Data from IoT sensors can improve your ability to serve your customers and secure your business by providing you with valuable insights into connected assets outside your physical boundaries.



**USE MACHINE LEARNING TO...****Recommend  
unique activities  
for customers**

User-specific data generated from online activities through search engine and website cookies track customer behavior. You can use machine learning to create models that allow you to offer valuable recommendations and experiences for your customers in the moment.

**Different departments within the same organization can use personalization for:**

- Product recommendation (Sales)
- Offer personalization (Marketing)
- Advertisement placement (Marketing)

**Across industries, machine learning helps businesses make personalized recommendations, like:**

- Cart additions (Retail)
- Route suggestions (Transportation)
- Service providers (Legal)

## USE MACHINE LEARNING TO...

# Predict maintenance requirements ahead of schedule

Many companies still rely on routine diagnostic inspections and scheduled maintenance to monitor their equipment. You can train machine learning models to analyze data retrieved from device sensors and anticipate problems before they start.

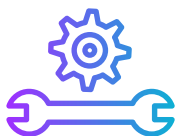
### Different departments within the same organization can use predictive maintenance for:

- Equipment upkeep (Maintenance)
- Asset budgeting (Finance)
- Location assignment (Scheduling)

### Across industries, machine learning predicts maintenance needs to avoid malfunctions in assets, like:

- Airplanes (Transportation)
- Truck engines (Shipping)
- Heavy machinery (Construction)

## IoT sensors play a key role in predictive maintenance



Run data from your IoT sensors through machine learning models to assess the state of your assets, anticipate further disrepair, and prescribe maintenance instructions.

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