



# Understanding Machine Learning



## What is Machine Learning?

Machine Learning (ML) uses statistical algorithms that learn from existing data to make predictions about new data. For example, an algorithm can be trained to identify if a dog is in a picture by learning what a dog is through analysis of a large set of images of dogs. Once trained, it will be able to recognize a dog in any new images it encounters. These predictions can happen in batch or in real-time, such as a self-driving car understanding the world around itself while in motion.

Using the breadth of ML capabilities, organizations across a wide variety of industries, are able to gain insights from large amounts of data and leverage those insights to make better decisions and gain new competitive advantage.

## Arktix Deep Learning

Arktix Solutions, Inc. uses a machine learning methodology called Deep Learning, with different types of artificial neural networks used for different machine learning processes. These include: Deep Neural Networks for classification and forecasting, Convolutional Neural Networks for feature extraction and image classification, and Recurrent Neural Networks for sequence of events.

## Who Uses Machine Learning?

As customer preferences and expectations for more customized service and support rapidly evolve, and the volume and complexity of data grows, organizations need to take action to stay one step ahead. ML technologies allow you to easily build a wide variety of predictive applications, including fraud detection, demand forecasting, and click prediction, and enables you to future-proof your business and manage the unknown unknowns.



### FINANCIAL SERVICES

Prevent fraud, and identify investment opportunities



### GOVERNMENT

Increase process efficiency and minimize identity theft



### HEALTHCARE

Improve diagnoses and treatment by assessing patient's health in realtime using wearable devices and sensors



### MARKETING & SALES

Personalize and optimize both the customer and user experience



### TRANSPORTATION

Identify traffic patterns to make routes more efficient and predict potential problems



## Benefits of Machine Learning on AWS

### COMPREHENSIVE ANALYTICS

Services for data analysis including data warehousing, business intelligence, batch processing, stream processing, data workflow orchestration

### BROAD FRAMEWORK SUPPORT

AWS supports all major frameworks, to enable you to build with the toolset you prefer

### API-DRIVEN ML SERVICES

Easily add intelligence to any application with pre-trained services that provide computer vision, speech, language analysis, and chatbot functionality

### SECURE

Granular controls and permission policies allows you to control access to resources and applications

### MACHINE LEARNING FOR EVERYONE

Whether you are a data scientist, researcher, or developer, AWS offers tailored tools to meet your needs and level of expertise

### DEEP PLATFORM INTEGRATION

ML services deeply integrated with the platform, including the data lake and database tools you need to run ML workloads

### BREADTH OF COMPUTE OPTIONS

AWS offers a broad array of compute options for training and inference, including the most powerful GPU instances in the cloud

### PAY-AS-YOU-GO

Consume services as you need them and only for the period you use them

AWS has a **rich APN partner ecosystem** that has **deep expertise in Machine Learning**, and can provide solutions that help organizations solve their data challenges, enable ML and data science workflows or offer SaaS based capabilities that enhance end applications with machine intelligence, seamlessly on AWS.

## Arktix Machine Learning Solutions

Arktix Solutions, Inc. has applied machine learning expertise to a variety of solutions for our customers. Our machine learning approach uses deep learning methodologies, employing artificial neural networks to bring machine learning to domains including images, text, video, speech, and vision. Our AWS machine learning infrastructure lets us offer clients intuitive data analysis and predictive modeling, processes which constantly improve through adaptive machine learning algorithms. Contact us for more details or if you're interested in seeing a demo of our machine learning applications.

[www.arktixsolutions.com](http://www.arktixsolutions.com)

## Additional Resources and Information

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**Additional Resources & Info:**  
<https://aws.amazon.com/machine-learning/>  
<https://aws.amazon.com/blogs/machine-learning/>  
<https://aws.amazon.com/machine-learning/what-is-ai/>