



Unleash the power of your startup with machine learning

How 4 startups are leveraging machine learning
to solve key challenges and unlock new opportunities



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Startups in the age of accessible machine learning

Thanks to the rapid adoption of cloud computing, the rise of compute power and data volumes, and the emergence of easy-to-use solutions that require little or no experience, artificial intelligence (AI) and machine learning (ML) are now more accessible than ever.

For many startups, AI and ML have become core components of operations, helping to drive growth and business results. According to IDC, spending on AI in the United States will grow to \$120 billion by 2025, representing a compound annual growth rate (CAGR) of 26 percent over the 2021–2025 forecast period.¹

Amazon Web Services (AWS) is playing a pivotal role in the advancement of ML, providing the broadest and most complete set of AI and ML services for businesses of any size. More than one hundred thousand AWS customers are using AI and ML in finance, healthcare and life sciences, manufacturing, media and entertainment, public services, retail, technology, and many other industries.

Categorizing machine learning objectives

Early stage, late stage, every stage—startups of all kinds have successfully leveraged AI and ML to deliver on three of the most fundamental objectives:

1. Improving the customer experience
2. Accelerating innovation
3. Optimizing business operations

This eBook features success stories from AWS startup customers that have unleashed their power and potential across these three objectives with the help of accessible AI and ML tools.

SUCCESS STORIES

Improving customer experience

Many startups are turning to the intelligent, predictive powers of ML to enhance customer experiences and improve engagement. If personalized recommendations, content automation, or support via contact centers are critical for your business, you're likely to find practical inspiration in the following success stories. Read on to discover how Wix and Segment are demonstrating the transformative power of ML to enhance the customer experience.





Building an AI-powered contact center to identify customer sentiment

Wix is a leading Israeli software company that provides a cloud-based development platform for building websites. It has over 200 million users worldwide. Thousands of Wix customer care experts support tens of thousands of calls a day in various languages from countries around the world using the Genesys cloud contact center.

Opportunity

Wix could only evaluate customer sentiment using manual surveys that covered feedback from merely 12 percent of its calls. The company wanted to evaluate 100 percent of their calls to gain insights such as user sentiment regarding the company brand, products, or customer interactions. Wix was losing sight of important information crucial to customer success. This is where ML stepped in to solve many of these challenges.

Solution

Wix developed a sentiment analysis system that can effectively determine how users feel throughout an interaction with customer care agents using the **AWS Post Call Analytics** solution. Wix used **Amazon Transcribe**, a speech-to-text service, to increase customer satisfaction visibility by 100 percent for calls. Wix chose Amazon Transcribe as the top solution for predominant parameters, including accuracy, ease of use, and features for the call center use case (such as PII redaction from phone calls and customer interactions across other channels).



Results

- **Gained better insights:** Wix transformed its call analysis workflow from a manual survey-based process to a fully automated process powered by ML
- **Improved customer sentiment:** Wix analyzed 100 percent of customer conversations to unlock insights such as sentiment, trending issues, and agent effectiveness at resolving calls
- **Identified areas for business growth:** Using call analytics, Wix has been able to improve visibility for its product managers on how users feel about certain products and features, including negative trends related to specific releases

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Creating custom recommendations to empower customer experiences

Segment is a customer data infrastructure company that helps its clients collect and unify their data. Using this data and AWS AI and ML solutions, Segment allows organizations to deliver personalized recommendations that create meaningful customer experiences.

Opportunity

Segment recognized that many of its customers did not have the data necessary to power and perform personalized recommendations. To meet this need, the company set out to provide a central hub in which to collect, train, and track all data, as well as run an ML pipeline. With this system, Segment helps its clients deliver product and content recommendations based on their customer data.

Solution

To help run workloads and process over 450 billion events per month, translating to roughly 250,000 requests per second, Segment turned to the power of AWS. Its solution involved using thousands of **Amazon Elastic Compute Cloud** (Amazon EC2) instances and running more than 16,000 Docker containers on **Amazon Elastic Container Service** (Amazon ECS). This data feeds into **Amazon Personalize**, an AWS cloud-based ML service that uses the data to power personalized recommendations, resulting in improved customer experiences.



Results

- Gained insights from all data across all apps
- Moved fast to propel business growth
- Discovered what customers want and what they are doing
- Translated data into recommendations easily
- Powered recommendations and world-class experiences for customers

“It’s a beautiful synergy where they can spin up Segment easily from day one and get going collecting all their data. Then, they can use that data to power recommendations without having to build out their own machine learning pipeline using Amazon Personalize.”

Calvin French-Owen, CTO & Co-Founder, Segment

Use cases and solutions for customer experience

Personalization ›

[Amazon Personalize](#)

[Amazon SageMaker](#)

AI-enabled contact center intelligence ›

[AWS Contact Center Intelligence \(AWS CCI\)](#)

[Amazon Connect](#)

Identity verification ›

[Amazon Rekognition](#)

Intelligent search ›

[Amazon Kendra](#)

Prepare data, and build, train, and deploy machine learning models with Amazon SageMaker

Startups that want to develop their own models can execute against any of the above use cases with SageMaker. The complete service provides pre-built models and purpose-built tools for every stage of the ML lifecycle and even includes no-code tools for business analysts to generate ML predictions.

SUCCESS STORIES

Accelerating innovation

Startups also leverage ML to help accelerate innovation across their products, services, and applications. This can enable your team members to accomplish more—regardless of their ML skill level—while driving efficient resource management and helping to keep costs low. Read on to discover how Synchronized is leveraging ML to achieve transformative results across the business.





Automating content creation and segmentation on the AI-enabled video platform

Synchronized transforms linear and passive videos into smart videos with the help of AI that understands video content and enriches it with metadata. The Synchronized platform automates entire processes for the transformation of linear TV content into digital programs that enhance viewer experiences.

Opportunity

The company rolled out its video automation solution on MYTF1, the on-demand video platform of **TF1**, France's leading free-to-air TV channel. Before working with Synchronized, TF1 was unable to automatically generate thumbnails for each program on MYTF1 or guarantee the quality of the thumbnails based on specific editorial criteria. That required the editorial team at TF1 to manually process hundreds of hours of content every month. The Synchronized platform's Smart-Thumbnail service has automated all the tasks involved in creating and selecting video thumbnails.

Solution

Powered by the Synchronized platform, all video images are automatically analyzed and processed using **Amazon Rekognition** to generate a mass of data to empower the recognition of faces, emotions, objects, and text. This mass of data is subjected to editorial guidelines predefined in the platform. Images corresponding to the guidelines are selected as potential images, with the final recommendation determined by the algorithm. If so motivated, TF1 editors can access all suggestions in Synchronized Studio with a few clicks and choose alternate images.



Results

- **Elevates content quality:** Synchronized users can guarantee the quality of thumbnails based on specific editorial criteria
- **Automates video thumbnails:** The solution helps automate and accelerate the creation of more than 500 hours of programs every month
- **Liberates staff time:** Saves hundreds of hours of editors' time every month

“The beauty of it all is that a startup can embark on highly ambitious projects while building on and collaborating with companies like AWS, which provide access to the results of their work and research. That was impossible 15 years ago. Today, these synergies are unleashing innovation.”

Guillaume Doret, CEO, Synchronized

Machine learning services for accelerating innovation

Amazon SageMaker offers an end-to-end service to build, train, and deploy ML models for any use case with fully managed infrastructure, tools, and workflows



Make machine learning more accessible

Enable more people to innovate with ML through a choice of tools—integrated development environments for data scientists and no-code visual interfaces for business analysts



Prepare data at scale

Access, label, and process large amounts of structured data (tabular data) and unstructured data (photos, videos, and audio) for ML



Accelerate machine learning development

Reduce training time from hours to minutes with optimized infrastructure. Boost team productivity up to 10 times with purpose-built tools



Streamline the machine learning lifecycle

Automate and standardize MLOps practices across your organization to build, train, deploy, and manage models at scale

SUCCESS STORIES

Optimizing business operations

With its ability to process massive amounts of data quickly and intelligently, ML can help startups streamline operations, automate processes, and predict business outcomes—all of which help to improve productivity and augment team capabilities. The following success story from TWAICE can demonstrate how core business operations can be optimized by the power of ML.





Extending the life of batteries with unified infrastructure and predictive analytics

TWAICE combines specialized battery knowledge and AI to provide detailed and actionable battery insights for electric vehicle (EV) makers and renewable energy providers. Its predictive analytics platform eliminates risk around health, safety, and warranty issues, empowering TWAICE customers to outperform their peers.

Opportunity

This software startup is unifying predictive analytics with Internet of Things (IoT) data to help EV and renewable energy businesses optimize their use of battery technology across their vehicles or energy storage systems. Of course, performing serious analytics requires extensive compute power to process large amounts of data, which has increased from 10,000 items a week to several billion a day. TWAICE's on-premises servers and databases would have made this task slow and expensive, hindering its growth as well as its ability to provide actionable results.

Solution

TWAICE increased the speed and accuracy of its analytics by 300 percent with its move to the AWS cloud-native platform. In addition to increasing IT team efficiency, the successful migration helped reduce infrastructure development time from several months to two weeks and cut deployment times from three days to a few hours. That has allowed the total number of TWAICE customers to nearly double and the amount of data processed to increase 100,000-fold. With its unified IT infrastructure running on AWS, the company can focus on its core business: enabling better battery technology.



Results

- **Quick cloud migration:** TWAICE completed the migration from its on-premises infrastructure to a cloud-based platform within six months (without having to increase the size of its DevOps team)
- **Fast, functional onboarding:** Reduced overall onboarding time for new customers from up to two weeks to a few hours
- **Rapid, accurate results:** The platform can now deliver analytics results in minutes—results that are up to 300 percent more accurate than before

“By building on AWS, we’ve reduced our IT complexity. Now, we can focus on what we’re best at—helping our customers get the most out of their battery technology.”

Jeff Glasson, CTO, TWAICE

Use cases and solutions for optimizing business operations

Intelligent document processing ›

[Amazon Textract](#)

[Amazon Comprehend](#)

[Amazon Comprehend](#)

[Medical](#)

[Amazon SageMaker](#)

[Amazon Augmented AI](#)
[\(Amazon A2I\)](#)

Content moderation ›

[Amazon Rekognition](#)

[Amazon Transcribe](#)

[Amazon Comprehend](#)

[Amazon Lex](#)

Fraud detection ›

[Amazon Fraud Detector](#)

[Amazon SageMaker](#)

Business metrics analysis ›

[Amazon Forecast](#)

[Amazon SageMaker](#)

Start realizing the business value of your machine learning today

A growing number of startups have leveraged the most comprehensive selection of AI and ML services from AWS to solve their business challenges and accelerate their ML journeys. Choose the AI and ML services that help your startup go beyond seed to growth and expansion—and learn how to move forward today.

Accelerate your ML journey with AWS ›

