



# **AWS Machine Learning** in Media & Entertainment

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# At Amazon, we've been making investments in ML for the last 20 years...



Fulfilment & Logistics

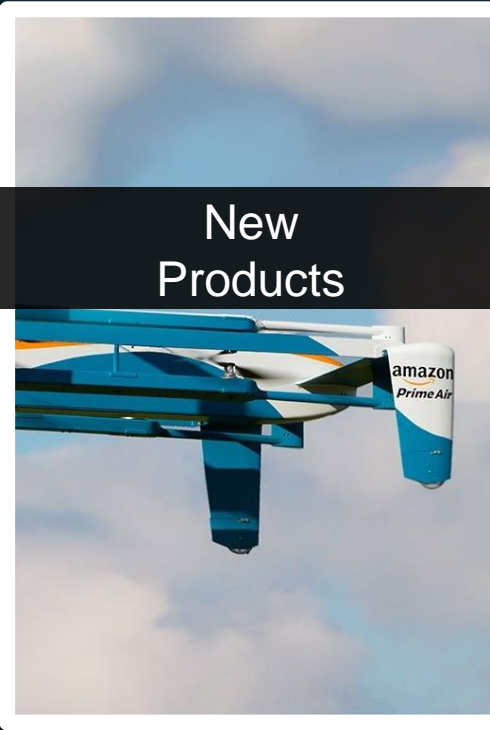
related to items you've viewed [See more](#)

A carousel of AI-related content including a book cover for 'Surviving AI' by Calum Chace, a video thumbnail for 'The Intelligent', and a book cover for 'Thin Statistics'. Below the carousel are movie posters for 'Star Wars Rebels', 'Rogue One: A Star Wars Story', and 'Dad's Army'. At the bottom, there is a section for 'New & Interesting Finds' featuring two colorful storks.

Search & Discovery

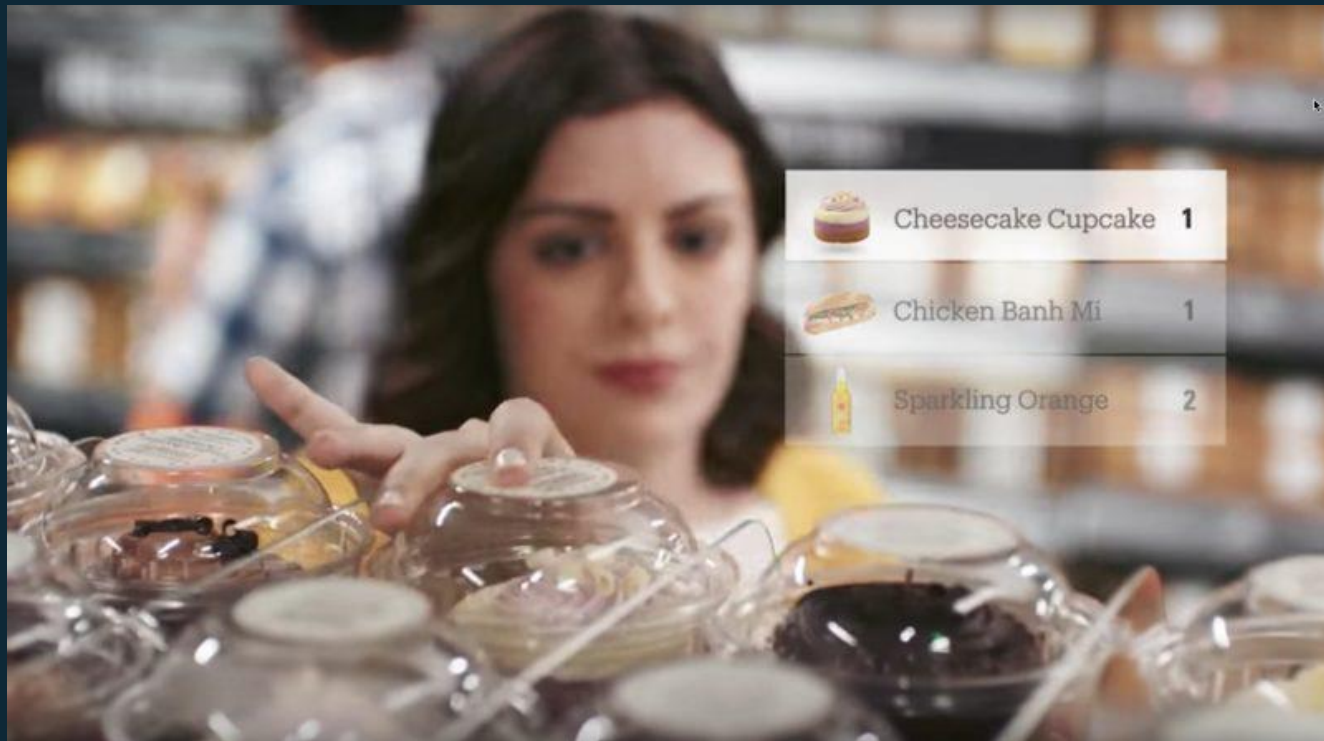
A screenshot of a video player interface for 'Star Wars: Episode V - The Empire Strikes Back'. The player shows a scene with R2-D2. Below the video, there is a cast list including John Williams, Mark Hamill, Luke Skywalker, Carrie Fisher, Princess Leia, Anthony Daniels, and Kenny Baker. The interface includes a progress bar, a 'View All X-Ray' button, and an 'Options' menu.

Existing Products

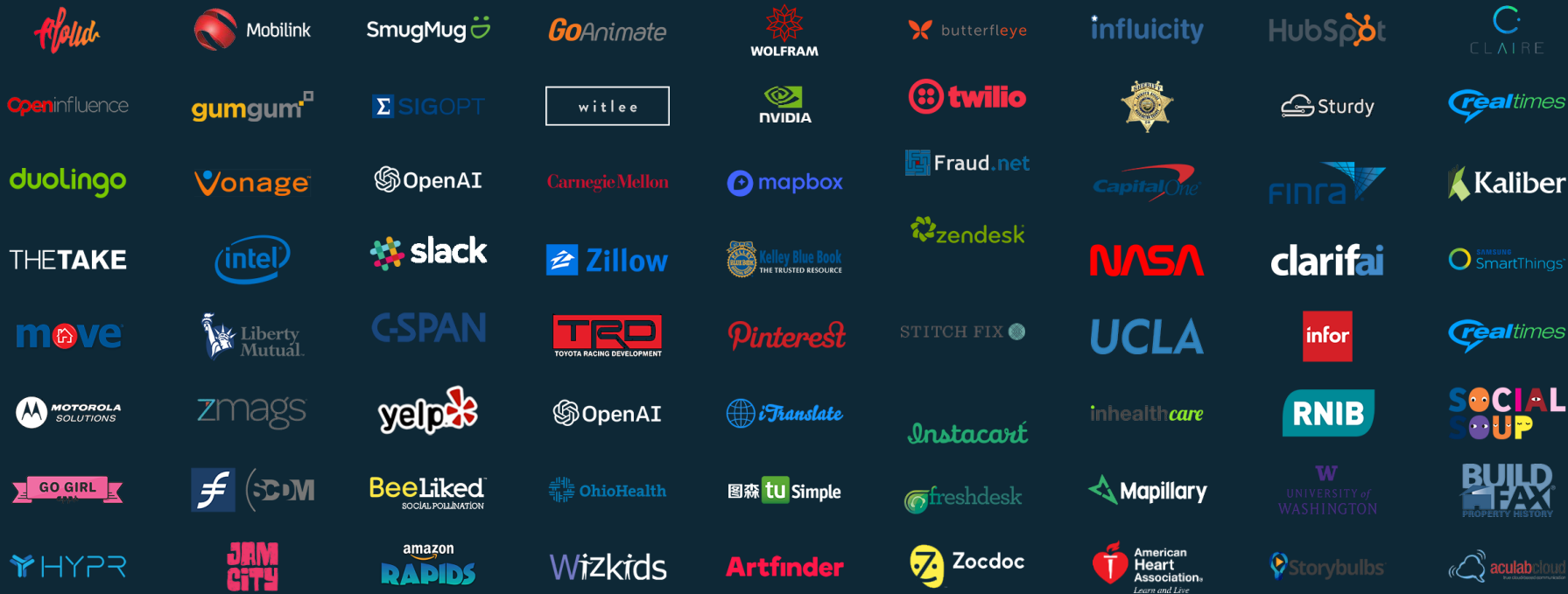


New Products

amazon go



# CUSTOMERS RUNNING MACHINE LEARNING ON AWS TODAY



# The ML Journey: Unlocking Opportunities

## 1. Automation

- Optimize existing processes
- Maintain (or improve) quality & reduce cost

## 2. Enrichment

- Improve content and add features to products & services
- Increase engagement & attract new viewers

## 3. Innovation

- Create entirely new customer experiences
- Leverage industry knowledge and AI expertise for entirely new categories and business models

# ML @ AWS: Our mission

Put machine learning in the hands of every developer and data scientist

# Solutions for Every Skill Level

## Services

- Designed for Developers & Data Scientists
- Solution-oriented Prebuilt Models Available via APIs

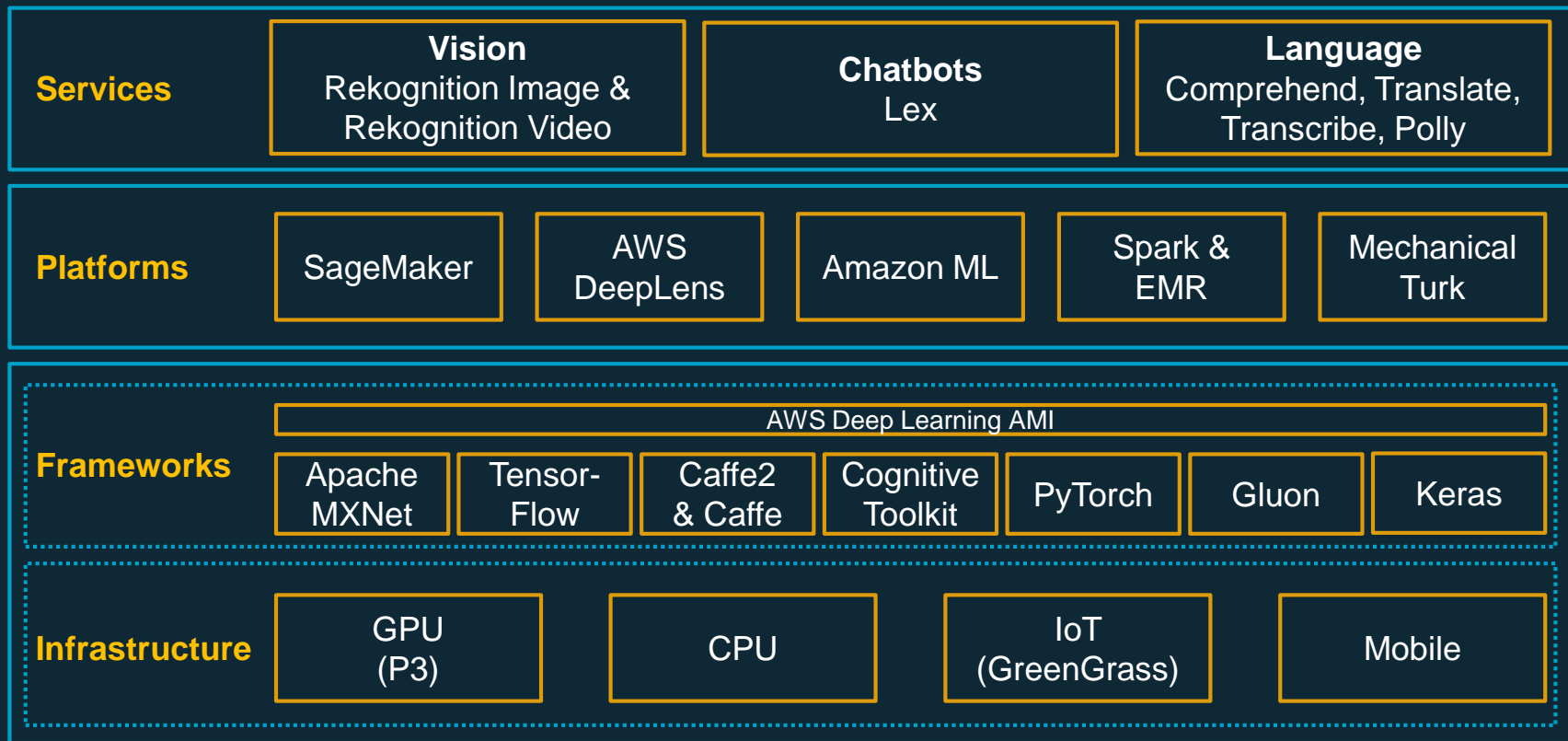
## Platforms

- Designed for Data Scientists to Address Common & Advanced ML Needs
- Reduces the Heavy Lifting in Model Building & Deployment

## Frameworks

- Designed for Data Scientists to Address Advanced / Emerging Needs
- Enables Expert AI Systems to be Developed & Deployed

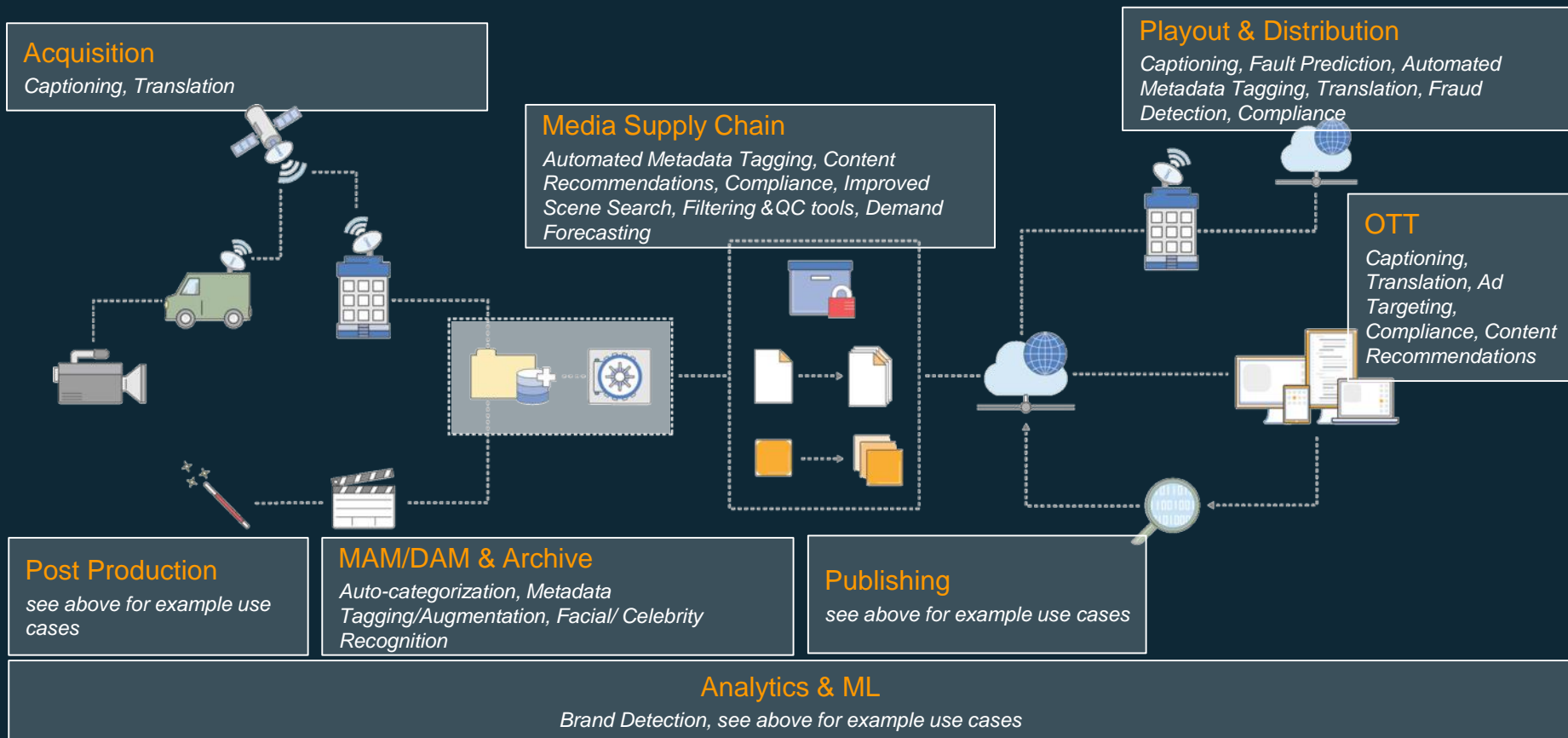
# The ML Stack



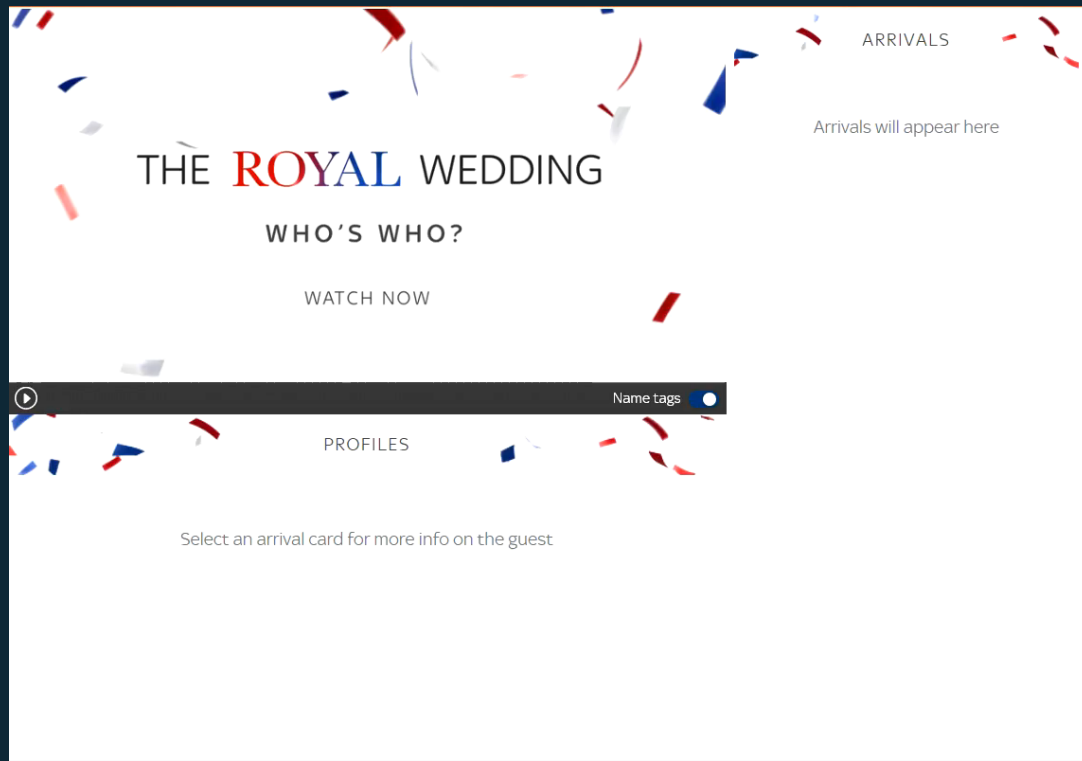


# ML in Media & Entertainment

# ML Use Cases Across Key Media Workloads



# Royal Wedding



# Use-Case: National Football League





## Background

- The NFL is America's largest sport organization with 180 million fans worldwide
- Big content creator, created 15 of the top 20 broadcasts in the US in 2017 alone
- Generate 3 TB of data within every game week

## Challenge

- Evolve manually tracked and generated basic stats and start generating stats automatically
- Provide real-time data in <1 second
- Develop new ways of visualizing the action on the field
- Uncover deeper insights into the action on the field
- Expand the fan experience by offering a broader range of advanced statistics

## Solution

DATA CAPTURE	NEXT GEN STATS PLATFORM ON AWS	END USERS
	DISTRIBUTE	MEDIA
	CAPTURE PROCESS	COACHING OFFICIATING
		IN-STADIUM

## Results

TAKING NEXT GEN STATS TO THE NEXT LEVEL WITH ML



Formation  
recognition



Route  
recognition



Identifying  
key events

# Use-Case: C-SPAN



## Background

- Over 200,000 hours of content
- Only half of content is manually tagged
- How can we enrich our metadata in AWS?
- How can we unleash the value of content we already own once in AWS?

## Challenge

- Large scale video library
- High accuracy required
- Limited budget
- Ability to extract from video
- Keep up with daily increase in content

## Results

- Solution developed within three weeks
- Live video frame based analysis
- Established, searchable baseline archive
- All content is now tagged and indexed
- Over 99,000 faced indexed and searchable
- Saved ~9,000 hours a year in manual curation costs



# Benefits of using the solution starter kits

The media analysis starter kit provides customers a pre-built solution for common media use cases, which includes a step-by-step implementation guide for automated deployment



## One-Click Launch

Launch a **fully-tested solution starter kit** in your AWS account with **one click**



## Accelerate Revenue

Get started with your **project quickly** and start **monetizing your content**



## Well-architected

Rely on the architecture as it reflects **AWS best practices**



## Agility

**Save the resources** of developing a solution from the beginning



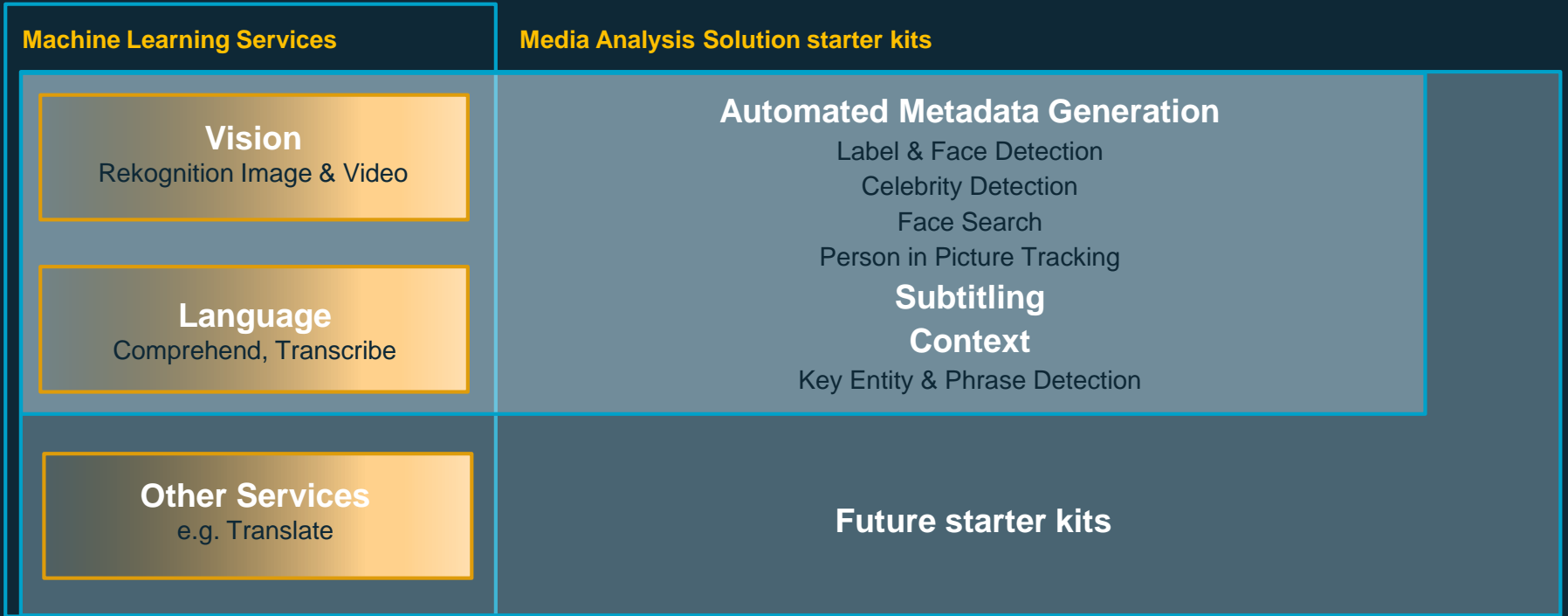
## Expand and Add

Use the framework and available guides to **expand the solution starter kit** based on your needs

Please contact your **AWS sales contact** or **kuthan@amazon.com** with any questions

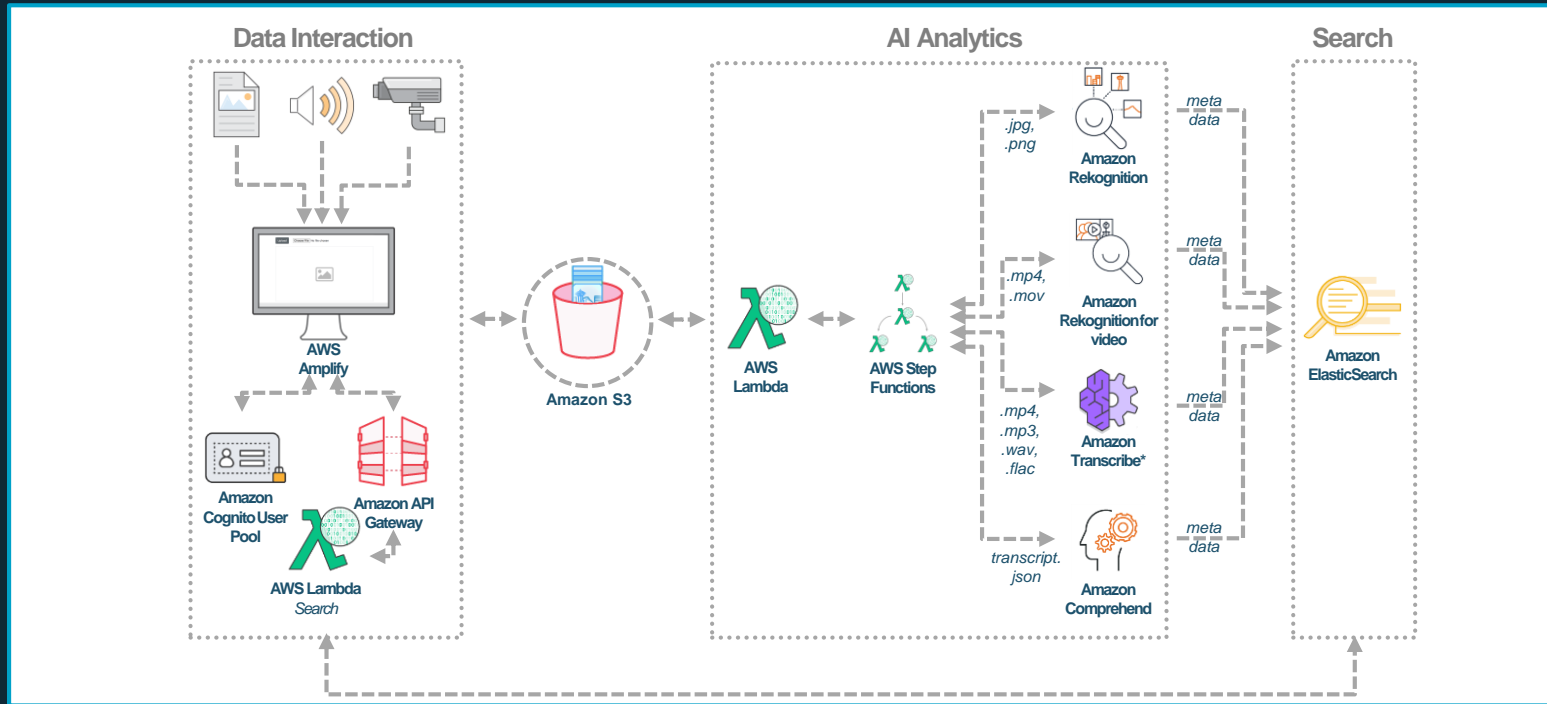
# Media Analysis Solution Starter Kit

Automatically provision the services necessary for building common media use cases on AWS



Go To [aws.amazon.com > answers > media-entertainment > Media-Analysis-Solution](https://aws.amazon.com/answers/media-entertainment/media-analysis-solution)

# Media Analysis Solution architecture





# Media Analysis Solution interface

Below the interface how it will look deployed in AWS account

The screenshot displays the Media Analysis Solution interface. At the top, there is a navigation bar with "Media Analysis Solution" on the left and "Upload", "Browse", and "Settings" on the right. The main content area features a video player titled "introducing\_amazon\_translate.mp4". The video shows a man on stage presenting "AMAZON TRANSCRIBE" with the subtitle "Automatic conversion of speech into accurate, grammatically correct text". A red bounding box highlights the speaker. To the right of the video, the interface shows "Currently tracking: Persons" and a "Controls" section with buttons for "Play", "Pause", "Restart", and "Captions". Below that is a "Click to track:" section with buttons for "Persons", "Faces", "Celebrities", and "Known Faces". At the bottom, there are tabs for "Labels", "Facial Attributes", "Known Faces", "Celebrities", "Transcript", "Entities", and "Phrases". The "Transcript" tab is active, showing a list of detected phrases such as "transcribe", "longform audio files", "text", "customers", "the world", "several different languages", "transcribed audiotex", "a lot", "different languages", "the way", "people", "this problem", "translation agencies", and "your expensive and time".

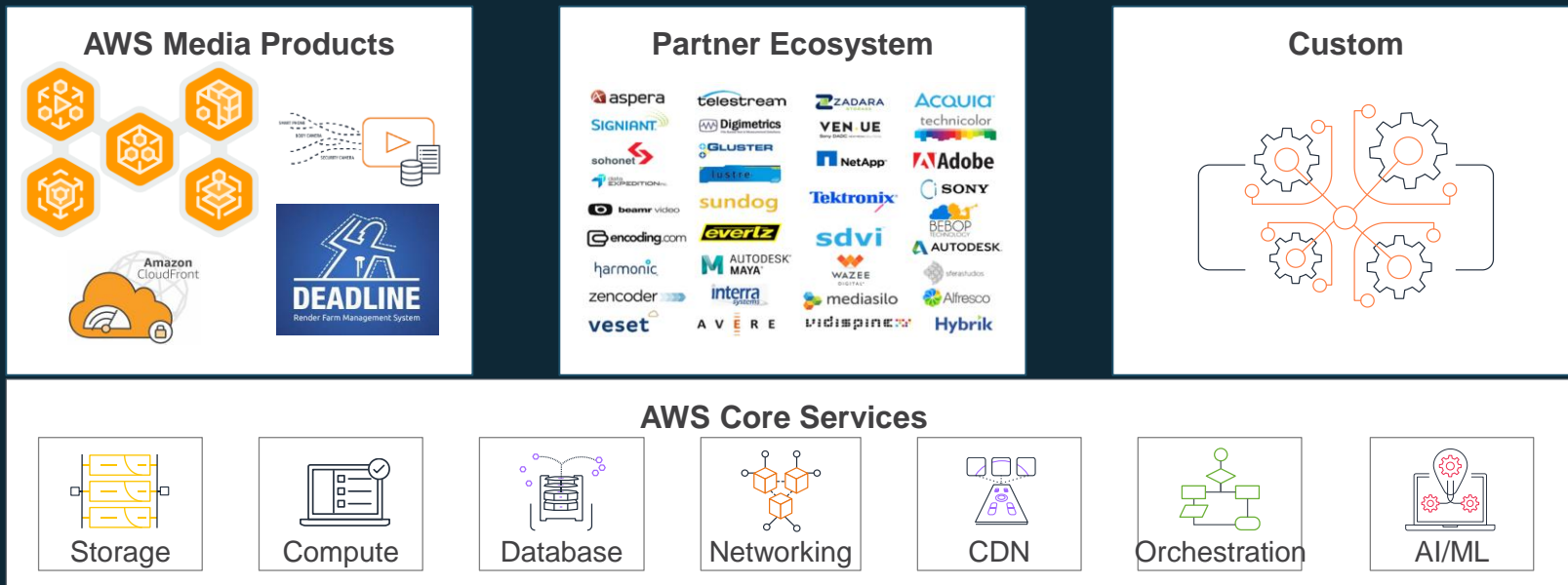
Go To [aws.amazon.com > answers > media-entertainment > Media-Analysis-Solution](https://aws.amazon.com/answers/media-entertainment/Media-Analysis-Solution)

# ... and more ML use case examples

- Logo Detection
- Recommendation/Personalization
- Marketing/Promo generation
- Color Correction
- Scene Extraction
- Highlights Creation, Automated Editing
- Conformance/Compliance
- Performance Optimization
- Automated Narration Generation
- Roto/Depth Detection/3D Conversions
- Real-time Lip Sync of CG models
- ML aided VFX bidding

# With a platform flexible enough to support a variety of deployment models

Build media workflows on top of AWS core services using AWS products, leveraging our partner ecosystem, and/or directly through customized solutions



**Thank You** and Build On!