



Adding Image and Video Analysis to your Applications

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Our mission

**Put Machine Learning in the hands of every
developer and data scientist**

AWS ML Stack

Application Services

API-driven services: Vision, Language & Speech Services, Chatbots

Platform Services

Deploy machine learning models with high-performance machine learning algorithms, broad framework support, and one-click training, tuning, and inference.

Frameworks & Infrastructure

Develop sophisticated models with any framework, create managed, auto-scaling clusters of GPUs for large scale training, or run prediction on trained models.

AWS ML Stack

Application Services

API-driven services: Vision, Language & Speech Services, Chatbots

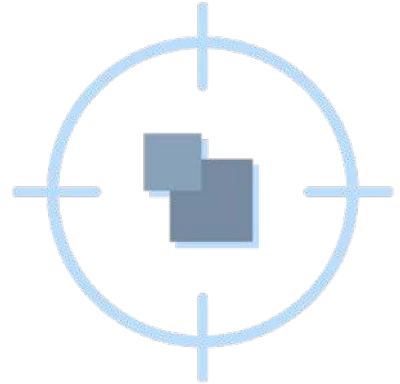
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Frameworks & Infrastructure

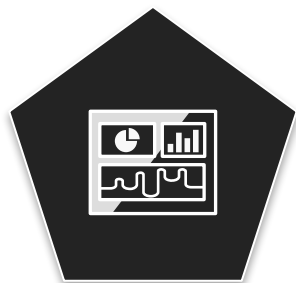
Develop sophisticated models with any framework, create managed, auto-scaling clusters of GPUs for large scale training, or run prediction on trained models.

Amazon Rekognition



Amazon Rekognition

Easy-to-use deep learning-based computer vision analysis



Fully
managed
service



Image
analysis



Video
analysis



Easy-to-use
API



Real-time
and batch
analysis



Low cost

Amazon Rekognition Image

Detect objects, scenes, and faces, extract text, recognize celebrities, and identify unsafe content in images



Object and Scene Detection



Facial Analysis



Face Recognition



Unsafe Image Detection



Celebrity Recognition



Text in Image



Face Comparison

Object & Scene Detection



City	91.4%
Downtown	91.4%
Metropolis	91.4%
Urban	91.4%
Building	56.2%
High Rise	56.2%
Dock	55.6%
Pier	55.6%
Dawn	52.4%
Dusk	52.4%

Facial Analysis



looks like a face	99.8%
appears to be female	100%
age range	23 - 38 years old
smiling	99.4%
appears to be happy	93.2%
wearing eyeglasses	99.9%
wearing sunglasses	97.6%

Crowd Detection – up to 100 faces



Facial Search



=



Similarity

97%



≠



≠



Image Moderation



▼ Results

Suggestive	83.5%
Female Swimwear Or Underwear	83.5%

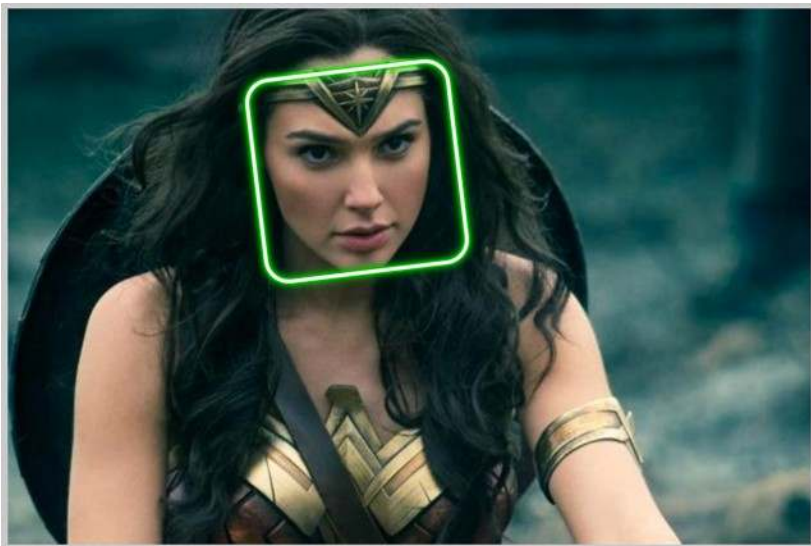
Explicit Nudity

- Nudity
- Graphic Male Nudity
- Graphic Female Nudity
- Sexual Activity
- Partial Nudity

Suggestive

- Female Swimwear or Underwear
- Male Swimwear or Underwear
- Revealing Clothes

Celebrity Recognition



▼ Results



Gal Gadot
[Learn More](#)

Match confidence

100%

Text in Image



▼ Results

US English only

| 5T6E652 |

► Request

▼ Response

```
{
  "TextDetections": [
    {
      "Confidence": 96.38984680175781,
      "DetectedText": "5T6E652",
      "Geometry": {
        "BoundingBox": {
          "Height": 0.05606506019830704,
          "Left": 0.38905566930770874,
          "Top": 0.7383729219436646,
          "Width": 0.10844030976295471
        },
        "Polygon": [
          {
            "X": 0.38905566930770874,
            "Y": 0.7383729219436646
          },
          {
            "X": 0.49749597907066345,
            "Y": 0.7726403474807739
          },
          {
            "X": 0.4896218776702881,
            "Y": 0.8287054300308228
          },
          {
            "X": 0.38905566930770874,
            "Y": 0.7383729219436646
          }
        ]
      }
    }
  ]
}
```


Marinus Analytics

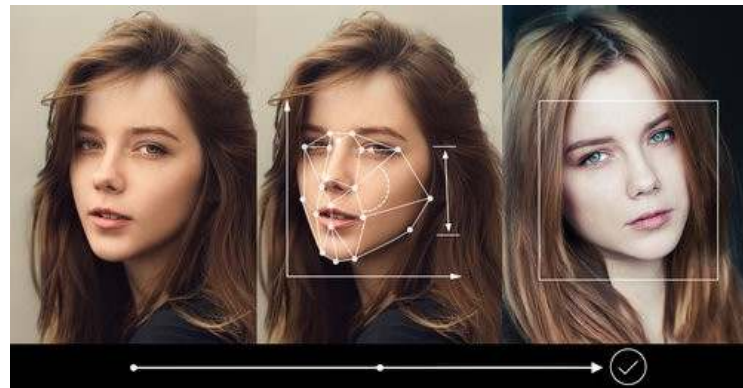


Marinus Analytics provides law enforcement with tools founded in artificial intelligence.

Traffic Jam, is a suite of tools for use by law enforcement agencies on sex trafficking investigations.

Before using **Amazon Rekognition**, their only recourse was manual processing; this was time-intensive or not possible.

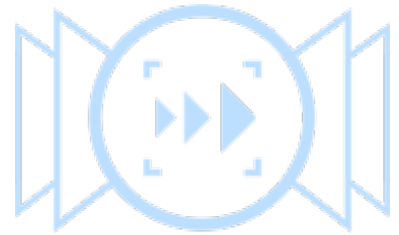
Now, investigators are able to take effective action by searching through **millions of records in seconds** to find victims.



<http://www.marinusanalytics.com/articles/2017/10/17/amazon-rekognition-helps-marinus-analytics-fight-human-trafficking>

Rekognition demo

Amazon Rekognition Video



Challenges of video analysis



Temporal information lost



Motion context lost



Manually intensive



Slow and error-prone



Expensive

Traffic Cam 352 - Riverview West

Northbound

03:15:05:41

Mon, Nov 27, 2017

LIVE STREAMING ●
Front Door Camera 1



Smartphone Video

00:05:00



Amazon Rekognition Video

Analyze activity, recognize, and track people in stored and live video



Object and activity
detection



Person tracking



Real-time
live stream



Celebrity
recognition



Unsafe video
detection



Face recognition



Facial
Analysis

THE ROYAL WEDDING



ARRIVALS

**Elton John**
Singer**David Furnish**
Elton John's husband**David Beckham**
Former footballer**Victoria Beckham**
Businesswoman**Princess Beatrice**
Royal Family**Princess Eugenie**
Royal Family**Prince Seeiso Bereng**
Royal Family of Lesotho**Princess Mabereng Seeiso**
Royal Family of Lesotho

PROFILES

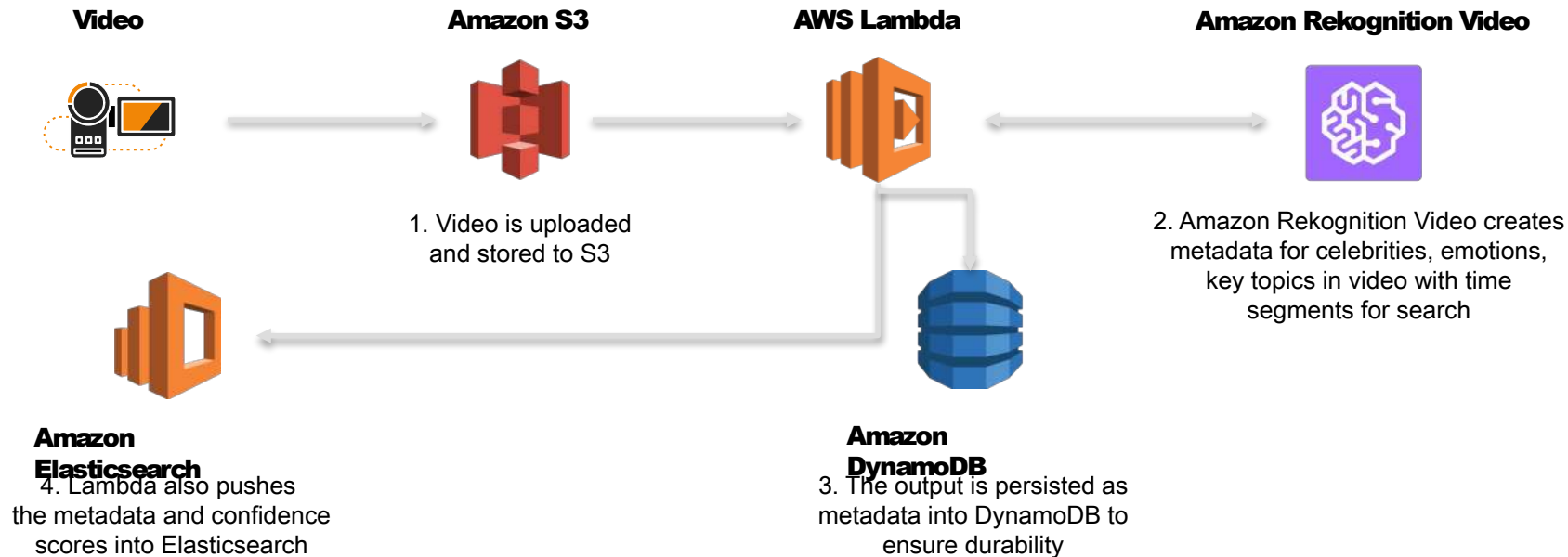
**David Beckham** Former footballer

David Robert Joseph Beckham, OBE is an English former professional footballer. He played for Manchester United, Preston North End, Real Madrid, Milan, LA Galaxy.

Now playing...

Sky News will use **Amazon Rekognition** to perform **real-time identification of guests** as they enter St. George's Chapel

Use case: video search index



CSPAN: automatic footage tagging



Indexed 99,000 people

Saves ~9,000 hours a year in labor

APRIL 4, 2017

Senate Republican Agenda Following their weekly caucus lunch, Senate Republican leaders spoke to reporters. They criticized Democrats' plans to filibuster Judge Neil... [read more](#)



Clip Bookmark to MyC-SPAN Embed Share This Video

Transcript type: Filter by Speaker: Search this transcript:

Text

00:00:05 **Mitch McConnell Jr.**
>> GOOD AFTERNOON, EVERYONE. AS YOU KNOW WE'RE MOVING FORWARD WITH THE GORSUCH NOMINATION FOR THE SUPREME COURT THAT SHOULD BE WRAPPED UP SOME TIME...
[Show Full Text](#)

00:00:59 **John Cornyn**
>> I GOT TO THE SENATE IN 2002 AND IMMEDIATELY SENATOR SCHUMER AND DEMOCRATIC COLLEAGUES INSTITUTED THE IDEA OF FILIBUSTERING JUDGES. INTERESTINGLY...

PEOPLE IN THIS VIDEO

[John A. Barrasso M.D.](#)
U.S. Senator (Class 1)
[R] Wyoming

[John Cornyn](#)
U.S. Senator (Class 2)
[R] Texas

[More People](#)

HOSTING ORGANIZATION

[U.S. Senate | Ohio Clock](#)

Amazon Rekognition Video

Public safety



Recognize a person of interest across a collection of millions in real time across hundreds of cameras



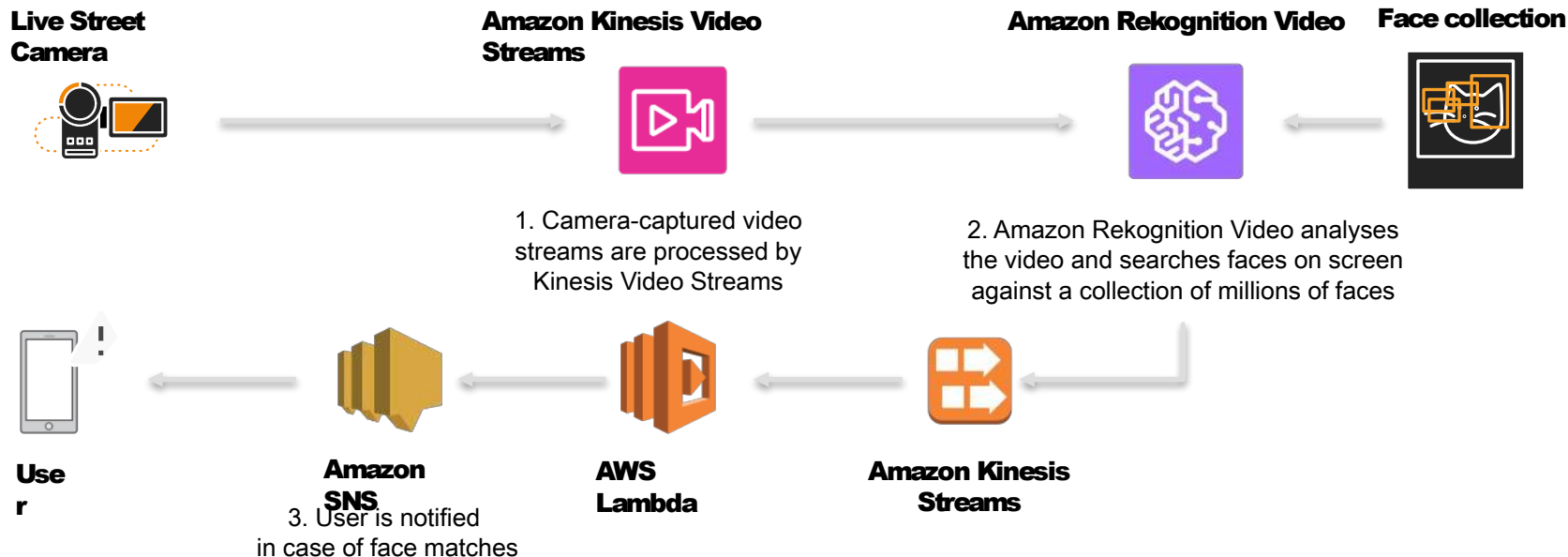
Track a person of interest across a video



Create alerts by detecting objects and activities of interest, such as car, license plate, running, etc.



Use case: public safety immediate response



Orlando: real-time public safety



Real-time video analysis

*"The City of Orlando is excited to work with Amazon to pilot the latest in public safety software through a unique, first-of-its-kind public-private partnership. Through the pilot, Orlando will utilize **Amazon Rekognition Video** and **Amazon Kinesis Video Streams** technology in a way that will use existing City resources to provide real-time detection and notification of persons-of-interests, further increasing public safety, and operational efficiency opportunities for the City of Orlando and other cities across the nation".*

John Mina, Police Chief, City of Orlando



Rekognition Video demo

<https://aws.amazon.com/blogs/machine-learning/easily-perform-facial-analysis-on-live-feeds-by-creating-a-serverless-video-analytics-environment-with-amazon-rekognition-video-and-amazon-kinesis-video-streams>

Democratization of ML

APPLICATION SERVICES



**Amazon
Rekognition**



**Amazon
Polly**



**Amazon
Lex**

**Amazon
Comprehend**



**Amazon
Rekognition
Video**



**Amazon
Transcribe**

**Amazon
Translate**

PLATFORM SERVICES

**Amazon
SageMaker**

AWS DeepLens

Amazon EMR

FRAMEWORKS AND INTERFACES

**Deep
Learning AMI**

Apache
MXNet

Caffe2

CNTK

PyTorch

TensorFlow

Theano

Torch

Keras

Gluon

Thank you!

<https://aws.amazon.com/machine-learning>

<https://aws.amazon.com/rekognition>

<https://aws.amazon.com/blogs/ai>

<https://medium.com/@julsimon>

<https://youtube.com/juliensimonfr>

Julien Simon

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