What is cloud video intelligence?

**Cloud Video Intelligence** Features. Detect entities within the **video**, such as "dog", "flower" or "car". ... “ Google **Video Intelligence** allows CBS Interactive to plug into our existing **video** encoding framework to generate **video** metadata. It provides us with options to use as is or to enhance other models.

Google Cloud Video Intelligence makes videos searchable, and discoverable, by extracting metadata with an easy to use REST API.

You can now search every moment of every video file in your catalog. It quickly annotates videos stored in [Google Cloud Storage](https://cloud.google.com/storage/), and helps you identify key entities (nouns) within your video; and when they occur within the video. Separate signal from noise, by retrieving relevant information within the entire video, shot-by-shot, -or per frame.

The Google Cloud Video Intelligence API allows developers to use Google video analysis technology as part of their applications.

The API supports common video formats, including **.MOV, .MPEG4, .MP4, and .AVI.**

# Features of video intelligence:

* [Label Detection:](https://cloud.google.com/video-intelligence/docs/features#label_detection) Detect objects, such as dog, flower, human, in the video.
* [Explicit Content Detection:](https://cloud.google.com/video-intelligence/docs/analyze-safesearch) Detect adult content within a videos.
* [Shot Change Detection:](https://cloud.google.com/video-intelligence/docs/features#shot_change_detection) Detect scene changes within the video.
* [Regionalization:](https://cloud.google.com/video-intelligence/docs/features#regionalization) Specify a region where processing will take place (for regulatory compliance).

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# **Google Cloud Video Intelligence API**

* The Google Cloud Video Intelligence API is currently in public beta.
* Google Cloud Video Intelligence makes videos searchable, and discoverable, by extracting metadata with an easy to use REST API.
* Any Google Cloud Platform (GCP) user can use Cloud Video Intelligence API.
* The API can also separate signals from noise in order to obtain only relevant information from a video, and detect scene changes.
* You can select the region where processing will take place, choosing from any region where Google Cloud Platform is available.
* You can also store your videos Google Cloud Storage, which features a consistent API, low-latency, and speed across multiple storage classes.
* The Video Intelligence API does can do two things: determine the shots (scene changes) in a video, and assign labels to the video and individual shots. Together with putting the API in public beta phase, Google also [added support for detecting adult content](https://cloud.google.com/blog/big-data/2017/06/cloud-machine-learning-perception-services-updates-cloud-video-intelligence-enters-beta-and-cloud-vision-gets-new-features).

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| **s.no** | **API** | **Description** |
| 1. | Google Knowledge Graph Search API | 1.The Knowledge Graph Search API is a read-only API.  2.The Knowledge Graph Search API lets you find entities in the [Google Knowledge Graph](https://www.google.com/intl/bn/insidesearch/features/search/knowledge.html). The API uses standard [schema.org](http://schema.org/) types and is compliant with the [JSON-LD](http://json-ld.org/) specification. |
| 2. | [Storyblocks API](https://engine.adzerk.net/r?e=_dXRtX3Y9MiZ1dG1fc291cmNlPXByb2dyYW1tYWJsZXdlYiZ1dG1fbWVkaXVtPWRpc3BsYXkmdXRtX2NhbXBhaWduPUVOVC1EaXNwbGF5LVByb2dyYW1tYWJsZVdlYitMaXN0aW5nLUFsbC1BUEkmdXRtX2NvbnRlbnQ9U3BvbnNvcmVkK0xpc3RpbmcifQ&s=g-6qIDdcJJhmXGPMaX0nEBCfM0w) | Bring millions of royalty-free videos, images, and audio tracks right to your users' fingertips. Storyblocks offers the only stock media API that lets you access our entire library of content for a flat affordable fee. |
| 3.  4. | IBM Cloud Video Channel API  api.video API | The API is used to manage channels remotely, modify security settings, video recording, and more.  The api.video API allows developers to host and broadcast videos on a European CDN across multiple devices and platforms. This service accepts 4K broadcasts and can adapt the stream for any network. api.video's protocols meet General Data Protection Regulation (GDPR) standards, and all data is handled in compliance with EU law. |
| 5. | Aspose.Video for Cloud API | Aspose.Video Cloud is a REST based API that allows the editing of video file properties such as aspect ratio, bit rate, FPS, and resolution. Additionally, videos can be converted to different formats including AVI, FLV, M4V, MP4, MOV, and WMV |
| 6. | OpenShot Video Cloud API | The OpenShot Video Cloud API can be integrated into websites, mobile apps, and desktop apps to create, edit, transcode, and animate videos. It works alternatively as a REST framework compatible with any programming language that supports JSON format. OpenShot is a a provider of open source video editing software. |
| 7. | Encoder Farm API | Encoder Farm is a video encoding API for developers that converts your website, applications or user-generated videos into formats for streaming. The Encoder Farm API video encoding platform is a REST service that receives progress callbacks to your server, uses preset templates for all devices and formats, allows you to create your own profiles using JSON and more. It supports Google Cloud, Amazon S3 and FTP with virtually any input video format. It is multi-bitrate HLS encoding and streaming with support for H264, HEVC and 4K output. |
| 8. | Google Firebase Storage Web API | The Google Firebase Storage Web API is indirect access to a Google Cloud Storage bucket. Cloud Storage for Firebase allows you to upload and share user generated content to build rich media content into your applications. |
| 9. | IVA Movie API | The Internet Video Archive Movie API provides access to vast collections of images and video content as well as metadata suitable for entertainment, content discovery, or recommendation system. |
| 10 | Extensis Portfolio SOAP API | The Extensis Portfolio SOAP API provides a way for developers to create applications that need to communicate with Portfolio. Server capabilities are exposed through SOAP, and direct HTTP with access to the API using various platforms and programming languages. |

# **How it works:**

Applying machine learning algorithms to extract information from videos

### **Tools used :**

* [Video Metadata Extraction](https://algorithmia.com/algorithms/media/VideoMetadataExtraction) – extract information from a video via image processing algorithms
* [Nudity Detection i2c](https://algorithmia.com/algorithms/sfw/NudityDetectioni2v) – detect nudity in images
* [InceptionNet](https://algorithmia.com/algorithms/deeplearning/InceptionNet) – extract features from images and generate tags
* [Car Make and Model Recognition](https://algorithmia.com/algorithms/LgoBE/CarMakeandModelRecognition) – identify the make and model of cars
* [DeepFashion](https://algorithmia.com/algorithms/algorithmiahq/DeepFashion) – list clothing articles with bounding boxes
* [Places 365 Classifier](https://algorithmia.com/algorithms/deeplearning/Places365Classifier) – identify types of places
* [Real Estate Classifier](https://algorithmia.com/algorithms/deeplearning/RealEstateClassifier) – recognize categories of real estate
* [Emotion Recognition CNN MBP](https://algorithmia.com/algorithms/deeplearning/EmotionRecognitionCNNMBP) – detect emotions in images
* [Face Detection](https://algorithmia.com/algorithms/dlib/faceDetection) – Locate Faces

### **Method :**

This algorithm extracts individual frames of the video, runs them through the specified image-processing algorithm, and combines the metadata results into a single JSON file with timepoints.

### **Takeaway :**

You can now use our data-extraction algorithms on entire videos, not merely still images. We take care of the complex machine-learning processes as well as splitting the video files, recombining the JSON output, and adding timepoints... all within a powerful cloud-based parallel pipeline, initiated by a single API call.

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## **Uses of video intelligence:**

**1.Quickly Search Your Video Catalog:**

You can now search your video catalog the same way you search text documents. Cloud Video Intelligence extracts metadata that can be used to index your video content and make it easy to organize and search your video content.

**2.Separate Signals from Noise:**

You can identify the presence of a signal buried in noise, by using **shot detection to distinguish scene changes** within a video and discern only relevant entities at the video, shot or frame level (e.g. Identify “dog” within a new scene).

**3.Process and Store on Google Cloud Platform:**

You can select the region where processing will take place, choosing from any region where Google Cloud Platform is available. You can also store your videos Google Cloud Storage, which features a consistent API, low-latency, and speed across multiple storage classes.

**Note:** you may have to use Convolution 3-D while dealing with videos, where the third dimension will be time.

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# Ref links for video metadata :

<https://demos.algorithmia.com/video-metadata/>

<https://www.programmableweb.com/api/google-cloud-video-intelligence>

<https://www.infoq.com/news/2017/06/google-cloud-video-intelligence>

<https://www.programmableweb.com/category/video/api>