Recognizing logos

Beta

This feature is in a pre-release state and might change or have limited support. For more information, see the product launch stages (https://cloud.google.com/products/#product-launch-stages).

Video Intelligence API can detect, track, and recognize the presence of over 100,000 brands and logos in video content.

This page describes how to recognize a logo in a video using the Video Intelligence API.

Annotate a video on Cloud Storage

The following code sample demonstrates how to detect logos from a video on Cloud Storage

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Send the process request

To perform annotation on a local video file, base64-encode the contents of the video file. Include the base64-encoded contents in the `inputContent` field of the request. For information on how to base64-encode the contents of a video file, see Base64 Encoding (https://cloud.google.com/video-intelligence/docs/base64).

The following shows how to send a `POST` request to the `videos:annotate` (https://cloud.google.com/videointelligence.googleapis.com/v1p3beta1/videos/annotate) method. The example uses the access token for a service account set up for the project using the Cloud SDK. For instructions on installing the Cloud SDK, setting up a project with a service account, and obtaining an access token, see the Video Intelligence quickstart (https://cloud.google.com/video-intelligence/docs/quickstarts).

Before using any of the request data below, make the following replacements:

- ***input-uri***: a Cloud Storage bucket that contains the file you want to annotate, including the file name. Must start with `gs://`.

For example:
`"inputUri": "gs://cloud-videointelligence-demo/assistant.mp4",`

HTTP method and URL:

```
POST https://videointelligence.googleapis.com/v1p3beta/videos:annotate
```

Request JSON body:

```
{
    "inputUri":"input-uri",
    "features": ["LOGO_RECOGNITION"]
}
```

To send your request, expand one of these options:

curl (Linux, macOS, or Cloud Shell)

Note: Ensure you have set the **GOOGLE_APPLICATION_CREDENTIALS** (https://cloud.google.com/docs/authentication/production) environment variable to your service account private key file path.

Save the request body in a file called `request.json`, and execute the following command:

```
curl -X POST \
-H "Authorization: Bearer "$(gcloud auth application-default print-access-token) \
-H "Content-Type: application/json; charset=utf-8" \
-d @request.json \
https://videointelligence.googleapis.com/v1p3beta/videos:annotate
```

PowerShell (Windows)

Note: Ensure you have set the **GOOGLE_APPLICATION_CREDENTIALS** (https://cloud.google.com/docs/authentication/production) environment variable to your service account private key file path.

Save the request body in a file called `request.json`, and execute the following command:

```
$cred = gcloud auth application-default print-access-token
$headers = @{ "Authorization" = "Bearer $cred" }
```

```
Invoke-WebRequest `
  -Method POST `
  -Headers $headers `
  -ContentType: "application/json; charset=utf-8" `
  -InFile request.json `
  -Uri "https://videointelligence.googleapis.com/v1p3beta/videos:annotate" | Selec
```

You should receive a JSON response similar to the following:

```
{
  "name": "projects/project-number/locations/location-id/operations/operation-id"
}
```

If the response is successful, the Video Intelligence API returns the `name` for your operation. The above shows an example of such a response, where: `project-number` is the name of your project and `operation-id` is the ID of the long running operation created for the request.

- ***project-number***: the number of your project
- ***location-id***: the Cloud region where annotation should take place. Supported cloud regions are: `us-east1`, `us-west1`, `europe-west1`, `asia-east1`. If no region is specified, a region will be determined based on video file location.
- ***operation-id***: the ID of the long running operation created for the request and provided in the response when you started the operation, for example `12345...`

Get the results

To get the results of your request, you send a `GET` request, using the operation name returned from the call to `videos:annotate`, as shown in the following example.

Before using any of the request data below, make the following replacements:

- ***operation-name***: the name of the operation as returned by Video Intelligence API. The operation name has the format `projects/`***`project-number`***`/locations/`***`location-id`***`/operations/`***`operation-id`***

★ Note: The **done** field is only returned when its value is **True**. It's not included in responses for which the operation has not completed.

HTTP method and URL:

```
GET https://videointelligence.googleapis.com/v1/operation-name
```

To send your request, expand one of these options:

curl (Linux, macOS, or Cloud Shell)

Note: Ensure you have set the **GOOGLE_APPLICATION_CREDENTIALS** (https://cloud.google.com/docs/authentication/production) environment variable to your service account private key file path.

Execute the following command:

```
curl -X GET \
-H "Authorization: Bearer "$(gcloud auth application-default print-access-token) \
https://videointelligence.googleapis.com/v1/operation-name
```

PowerShell (Windows)

Note: Ensure you have set the **GOOGLE_APPLICATION_CREDENTIALS** (https://cloud.google.com/docs/authentication/production) environment variable to your service account private key file path.

Execute the following command:

```
$cred = gcloud auth application-default print-access-token
$headers = @{ "Authorization" = "Bearer $cred" }

Invoke-WebRequest `
  -Method GET `
  -Headers $headers `
  -Uri "https://videointelligence.googleapis.com/v1/operation-name" | Select-Objec
```

You should receive a JSON response similar to the following:

Response

```
{
  "name": "projects/project-number/locations/location-id/operations/operation-id",
  "metadata": {
    "@type": "type.googleapis.com/google.cloud.videointelligence.v1p3beta1.Annotat
    "annotationProgress": [
```

```
    {
     "inputUri": "/cloud-samples-data/video/googlework_short.mp4",
     "progressPercent": 100,
     "startTime": "2019-12-31T16:27:44.889439Z",
     "updateTime": "2019-12-31T16:27:56.526050Z"
    }
   ]
},
"done": true,
"response": {
  "@type": "type.googleapis.com/google.cloud.videointelligence.v1.AnnotateVideoR
  "annotationResults": [
    {
      "inputUri": "/cloud-samples-data/video/googlework_short.mp4",
      "segment": {
        "startTimeOffset": "0s",
        "endTimeOffset": "34.234200s"
      },
      "logoRecognitionAnnotations": [{
        "entity": {
          "entityId": "/m/045c7b",
          "description": "Google",
          "languageCode": "en-US"
        },
        "tracks": [{
            "segment": {
              "startTimeOffset": "10.543866s",
              "endTimeOffset": "12.345666s"
            },
            "timestampedObjects": [{
                "normalizedBoundingBox": {
                  "left": 0.3912032,
                  "top": 0.26212785,
                  "right": 0.6469412,
                  "bottom": 0.4434373
                },
                "timeOffset": "10.543866s"
              },
              ...
            ],
            "confidence": 0.8588119
          },
          {
            "segment": {
              "startTimeOffset": "15.348666s",
```

```
            "endTimeOffset": "18.752066s"
          },
          "timestampedObjects": [
            {
              "normalizedBoundingBox": {
                "left": 0.69989866,
                "top": 0.79943377,
                "right": 0.76465744,
                "bottom": 0.9271479
              },
              "timeOffset": "15.348666s"
            },
            {
              "normalizedBoundingBox": {
                "left": 0.68997324,
                "top": 0.78775305,
                "right": 0.75723547,
                "bottom": 0.91808647
              },
              "timeOffset": "15.448766s"
            },
            ...
          }
        }
      ]
    }
  ]
}
```

Annotate a local video

The following code sample demonstrates how to detect logos in a local video file.

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Send video annotation request

To perform annotation on a local video file, be sure to base64-encode the contents of the video file. Include the base64-encoded contents in the `inputContent` field of the request. For information on how to

base64-encode the contents of a video file, see Base64 Encoding (https://cloud.google.com/video-intelligence/docs/base64).

The following shows how to send a POST request to the `videos:annotate` method. The example uses the access token for a service account set up for the project using the Cloud SDK. For instructions on installing the Cloud SDK, setting up a project with a service account, and obtaining an access token, see the Video Intelligence API Quickstart (https://cloud.google.com/video-intelligence/docs/quickstarts)

Before using any of the request data below, make the following replacements:

- "inputContent": ***base-64-encoded-content***
  For example:
  `"UklGRg41AwBBVkkgTElTVAwBAABoZHJsYXZpaDgAAAA1ggAAxPMBAAAAAAAAQCAA..."`
- ***language-code***: [Optional] See supported languages (https://cloud.google.com/speech-to-text/docs/languages)

HTTP method and URL:

```
POST https://videointelligence.googleapis.com/v1p3beta/videos:annotate
```

Request JSON body:

```
{
  "inputContent": "base-64-encoded-content",
  "features": ["LOGO_RECOGNITION"],
  "videoContext": {
  }
}
```

To send your request, expand one of these options:

curl (Linux, macOS, or Cloud Shell)

Note: Ensure you have set the **GOOGLE_APPLICATION_CREDENTIALS** (https://cloud.google.com/docs/authentication/production) environment variable to your service account private key file path.

Save the request body in a file called `request.json`, and execute the following command:

```
curl -X POST \
-H "Authorization: Bearer "$(gcloud auth application-default print-access-token) \
```

```
-H "Content-Type: application/json; charset=utf-8" \
-d @request.json \
https://videointelligence.googleapis.com/v1p3beta/videos:annotate
```

PowerShell (Windows)

Note: Ensure you have set the **GOOGLE_APPLICATION_CREDENTIALS** (https://cloud.google.com/docs/authentication/production) environment variable to your service account private key file path.

Save the request body in a file called `request.json`, and execute the following command:

```
$cred = gcloud auth application-default print-access-token
$headers = @{ "Authorization" = "Bearer $cred" }

Invoke-WebRequest `
  -Method POST `
  -Headers $headers `
  -ContentType: "application/json; charset=utf-8" `
  -InFile request.json `
  -Uri "https://videointelligence.googleapis.com/v1p3beta/videos:annotate" | Selec
```

You should receive a JSON response similar to the following:

```
{
  "name": "projects/project-number/locations/location-id/operations/operation-id"
}
```

If the response is successful, the Video Intelligence API returns the `name` for your operation. The above shows an example of such a response, where `project-number` is the name of your project and `operation-id` is the ID of the long running operation created for the request.

- ***operation-id***: provided in the response when you started the operation, for example `12345...`

Get annotation results

To retrieve the result of the operation, make a GET (https://cloud.google.com/video-intelligence/docs/reference/rest/v1/projects.locations.operations/get) request, using the operation name returned from the call to videos:annotate (https://cloud.google.com/video-intelligence/docs/reference/rest/v1p3beta1/videos/annotate), as shown in the following example.

HTTP method and URL:

```
GET https://videointelligence.googleapis.com/v1/operation-name
```

To send your request, expand one of these options:

curl (Linux, macOS, or Cloud Shell)

Note: Ensure you have set the **GOOGLE_APPLICATION_CREDENTIALS** (https://cloud.google.com/docs/authentication/production) environment variable to your service account private key file path.

Execute the following command:

```
curl -X GET \
-H "Authorization: Bearer "$(gcloud auth application-default print-access-token) \
https://videointelligence.googleapis.com/v1/operation-name
```

PowerShell (Windows)

Note: Ensure you have set the **GOOGLE_APPLICATION_CREDENTIALS** (https://cloud.google.com/docs/authentication/production) environment variable to your service account private key file path.

Execute the following command:

```
$cred = gcloud auth application-default print-access-token
$headers = @{ "Authorization" = "Bearer $cred" }

Invoke-WebRequest `
  -Method GET `
  -Headers $headers `
  -Uri "https://videointelligence.googleapis.com/v1/operation-name" | Select-Objec
```

You should receive a JSON response similar to the following:

Response

```
"name": "projects/512816187662/locations/us-east1/operations/8399514592783793684",
  "metadata": {
    "@type": "type.googleapis.com/google.cloud.videointelligence.v1p3beta1.Annotat
    "annotationProgress": [
      {
        "inputUri": "/videointelligence-prober-videos/face.mkv",
        "progressPercent": 100,
        "startTime": "2019-12-18T19:45:17.725359Z",
        "updateTime": "2019-12-18T19:45:26.532315Z"
      }
    ]
  },
  "done": true,
  "response": {
    "@type": "type.googleapis.com/google.cloud.videointelligence.v1p3beta1.Annotat
    "annotationResults": [
      {
        "inputUri": "/videointelligence-prober-videos/face.mkv",
        "segment": {
          "startTimeOffset": "0s",
          "endTimeOffset": "10.010s"
        },
        "logoRecognitionAnnotations": [
          {
            "entity": {
              "entityId": "/m/02z_b",
              "description": "Fox News",
              "languageCode": "en-US"
            },
            "tracks": [
              {
                "segment": {
                  "startTimeOffset": "0s",
                  "endTimeOffset": "1.901900s"
                },
                "timestampedObjects": [
                  {
                    "normalizedBoundingBox": {
                      "left": 0.032402553,
                      "top": 0.73683465,
                      "right": 0.16249886,
                      "bottom": 0.8664769
                    },
                    "timeOffset": "0s"
                  },
```

```
                {
                  "normalizedBoundingBox": {
                    "left": 0.03267879,
                    "top": 0.73522913,
                    "right": 0.1627307,
                    "bottom": 0.86775583
                  },
                  "timeOffset": "0.100100s"
                },
                {
                  "normalizedBoundingBox": {
                    "left": 0.031819325,
                    "top": 0.73514116,
                    "right": 0.16305345,
                    "bottom": 0.8677738
                  },
                  "timeOffset": "0.200200s"
                },
                {
                  "normalizedBoundingBox": {
                    "left": 0.03155339,
                    "top": 0.7349258,
                    "right": 0.16275825,
                    "bottom": 0.86660737
                  },
                  "timeOffset": "0.300300s"
                },
        ....
  ]
}
```

Text detection annotations are returned as a `textAnnotations` list. Note: The **done** field is only returned when its value is **True**. It's not included in responses for which the operation has not completed.

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Last updated January 22, 2020.