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Cloud Vision API

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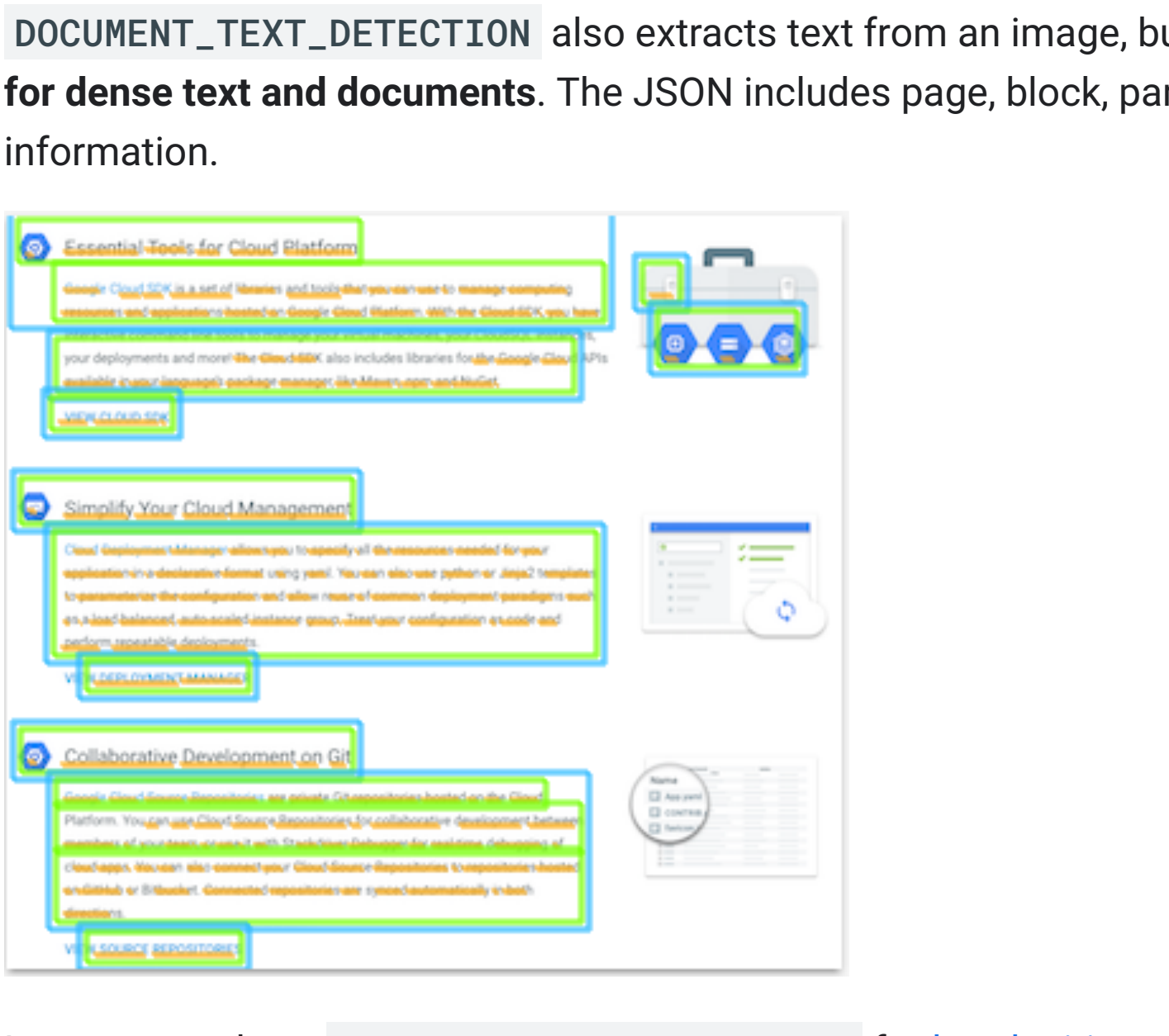
Using this API in a mobile app? Try [Eirebase Machine Learning](#) and [ML Kit](#), which provide native Android and iOS SDKs for using Cloud Vision services, as well as on-device ML Vision APIs and on-device inference using custom ML models.

Note: The Vision API now supports offline **asynchronous batch image annotation** for all features. This asynchronous request supports up to 2000 image files and returns response JSON files that are stored in your Google Cloud Storage bucket. For more information about this feature, refer to [Offline batch image annotation](#).

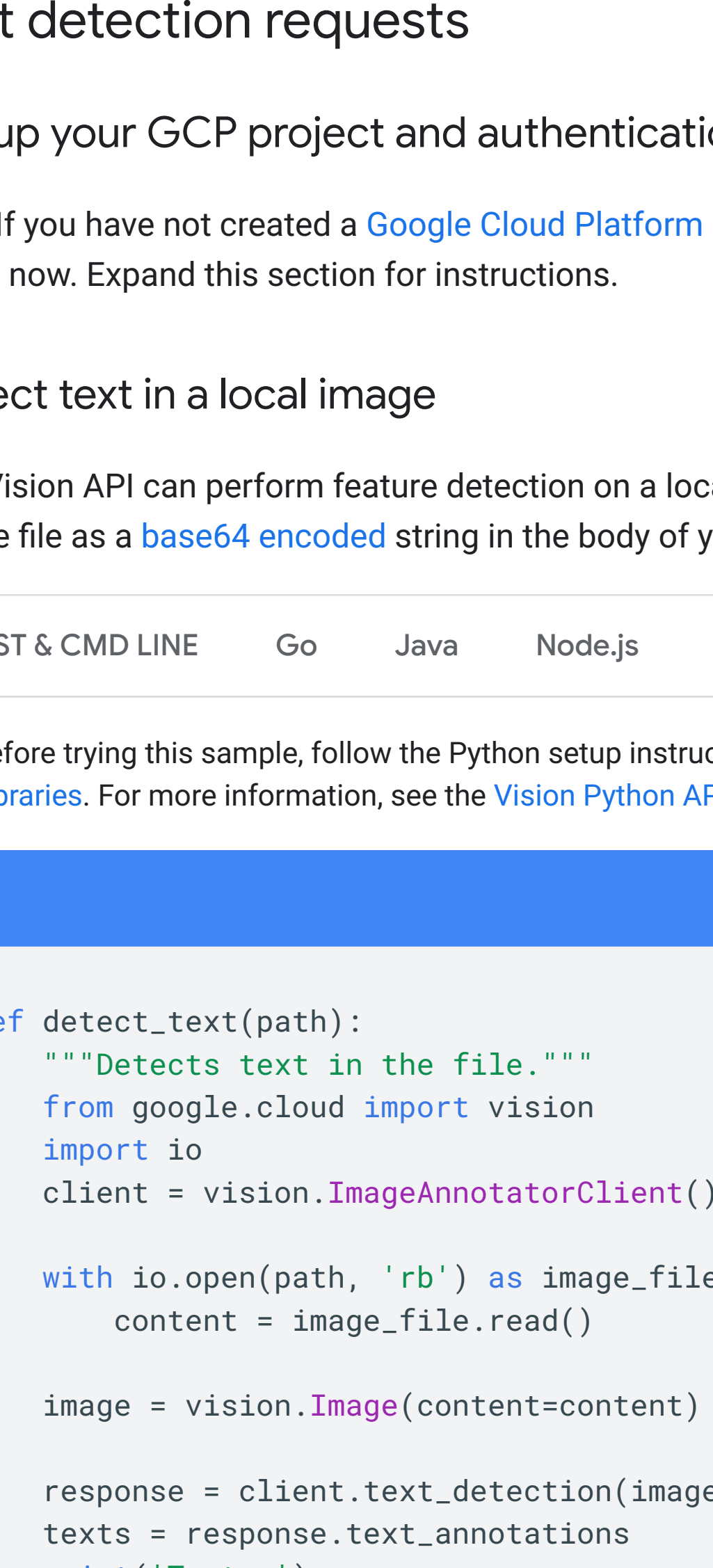
Optical Character Recognition (OCR)

The Vision API can detect and extract text from images. There are **two** annotation features that support optical character recognition (OCR):

- TEXT_DETECTION** detects and **extracts text from any image**. For example, a photograph might contain a street sign or traffic sign. The JSON includes the entire extracted string, as well as individual words, and their bounding boxes.



- DOCUMENT_TEXT_DETECTION** also extracts text from an image, but the response is **optimized for dense text and documents**. The JSON includes page, block, paragraph, word, and break information.



Learn more about **DOCUMENT_TEXT_DETECTION** for [handwriting extraction](#) and [text extraction from files \(PDF/TIFF\)](#).

Text detection requests

Set up your GCP project and authentication

If you have not created a [Google Cloud Platform \(GCP\) project](#) and service account credentials, do so now. Expand this section for instructions.

Detect text in a local image

The Vision API can perform feature detection on a local image file by sending the contents of the image file as a [base64 encoded](#) string in the body of your request.

REST & CMD LINEGoJavaNode.jsPythonAdditional languages

Before trying this sample, follow the Python setup instructions in the [Vision Quickstart Using Client Libraries](#). For more information, see the [Vision Python API reference documentation](#).

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```
def detect_text(path):
    """Detects text in the file."""
    from google.cloud import vision
    import io
    client = vision.ImageAnnotatorClient()

    with io.open(path, 'rb') as image_file:
        content = image_file.read()

    image = vision.Image(content=content)

    response = client.text_detection(image=image)
    texts = response.text_annotations
    print('Texts:')

    for text in texts:
        print('\n' '{}'.format(text.description))

        vertices = ([('({},{})'.format(vertex.x, vertex.y)
                      for vertex in text.bounding_poly.vertices])

        print('bounds: {}'.format(' '.join(vertices)))

    if response.error.message:
        raise Exception(
            '{}\nFor more info on error messages, check: '
            'https://cloud.google.com/apis/design/errors'.format(
                response.error.message))
```

Cautions: When fetching images from HTTP/HTTPS URLs, Google cannot guarantee that the request will be completed. Your request may fail if the specified host denies the request (for example, due to request throttling or DQS prevention), or if Google throttles requests to the site for abuse prevention. You should not depend on externally-hosted images for production applications.

REST & CMD LINEGoJavaNode.jsPythongcloudAdditional languages

Before trying this sample, follow the Python setup instructions in the [Vision Quickstart Using Client Libraries](#). For more information, see the [Vision Python API reference documentation](#).

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```
def detect_text_uri(uri):
    """Detects text in the file located in Google Cloud Storage or on the Web.
    """
    from google.cloud import vision
    client = vision.ImageAnnotatorClient()
    image = vision.Image()
    image.source.image_uri = uri

    response = client.text_detection(image=image)
    texts = response.text_annotations
    print('Texts:')

    for text in texts:
        print('\n' '{}'.format(text.description))

        vertices = ([('({},{})'.format(vertex.x, vertex.y)
                      for vertex in text.bounding_poly.vertices])

        print('bounds: {}'.format(' '.join(vertices)))

    if response.error.message:
        raise Exception(
            '{}\nFor more info on error messages, check: '
            'https://cloud.google.com/apis/design/errors'.format(
                response.error.message))
```

Specify the language (optional)

Both types of OCR requests support one or more `languageHints` that specify the language of any text in the image. However, in most cases, an empty value yields the best results since it enables automatic language detection. For languages based on the Latin alphabet, setting `languageHints` is not needed. In rare cases, when the language of the text in the image is known, setting a hint helps get better results (although it can be a significant hindrance if the hint is wrong). Text detection returns an error if one or more of the specified languages is not one of the [supported languages](#).

If you choose to provide a language hint, modify the body of your request (`request.json` file) to provide the string of one of the supported languages in the `ImageContext.languageHints` field as shown below:

```
{
  "requests": [
    {
      "image": {
        "source": {
          "imageUri": "image-uri"
        }
      },
      "features": [
        {
          "type": "DOCUMENT_TEXT_DETECTION"
        }
      ],
      "ImageContext": {
        "languageHints": ["en-t-10-handwrit"]
      }
    }
  ]
}
```

How do language hints work?

The `languageHint` format follows the [BCP47](#) language code formatting guidelines. The BCP47 specified format is as follows:

language ["-" script] ["-" region] ["-" variant] ["-" extension] ["-" privateuse].

For example, the language hint `en-t-10-handwrit` specifies English language (`en`), `transform` extension singleton (`t`), `input method engine transform` extension code (`10`), and `handwriting transform code` (`handwrit`). This roughly says the language is 'English transformed from handwriting.' You do not need to specify a script code because Latin is implied by the `en` language.

Multi-regional support

This functionality currently only applies to the OCR feature (types `TEXT_DETECTION` or `DOCUMENT_TEXT_DETECTION`).

You can now specify continent-level data storage and OCR processing. The following regions are currently supported:

- `us`: USA country only
- `eu`: The European Union

Locations

Cloud Vision offers you some control over where the resources for your project are stored and processed. In particular, you can configure Cloud Vision to store and process your data only in the European Union.

By default Cloud Vision stores and processes resources in a **Global** location, which means that Cloud Vision doesn't guarantee that your resources will remain within a particular location or region. If you choose the **European Union** location, Google will store your data and process it only in the European Union. You and your users can access the data from any location.

Setting the location using the API

The Vision API supports a global API endpoint (`vision.googleapis.com`), as well as two region-based endpoints: a European Union endpoint (`eu-vision.googleapis.com`) and United States endpoint (`us-vision.googleapis.com`). Use these endpoints for region-specific processing. For example, to store and process your data in the European Union only, you need to explicitly set the endpoint (`eu-vision.googleapis.com` in place of `vision.googleapis.com`) for the REST API calls:

- `https://eu-vision.googleapis.com/v1/images:annotate`
- `https://eu-vision.googleapis.com/v1/images:asyncBatchAnnotate`
- `https://eu-vision.googleapis.com/v1/files:annotate`
- `https://eu-vision.googleapis.com/v1/files:asyncBatchAnnotate`

To store and process your data in the United States only, use the US endpoint (`us-vision.googleapis.com`) with the methods listed above.


Setting the location using the client libraries

The Vision API client libraries access the global API endpoint (`vision.googleapis.com`) by default. To store and process your data in the European Union only, you need to explicitly set the endpoint (`eu-vision.googleapis.com`). The code samples below show how to configure this setting.

Try it

Try text detection and document text detection below. You can use the image specified already (`gs://cloud-samples-data/vision/ocr/sign.jpg`) by clicking **Execute**, or you can specify your own image in its place.

To try document text detection, update the value of `type` to `DOCUMENT_TEXT_DETECTION`.



Request body:

```
{
  "requests": [
    {
      "features": [
        {
          "type": "TEXT_DETECTION"
        }
      ],
      "image": {
        "source": {
          "imageUri": "gs://cloud-samples-data/vision/ocr/sign.jpg"
        }
      }
    }
  ]
}
```

Try this API

Call this method on live data to see the API request and response. Need help with the API Explorer? Check the [support page](#).

Request parameters

No method-level parameters

Show standard parameters ▾

Request body

```
{
  "requests": [
    {
      "features": [
        {
          "type": "TEXT_DETECTION"
        }
      ],
      "image": {
        "source": {
          "imageUri": "gs://cloud-samples-data/vision/ocr/sign.jpg"
        }
      }
    }
  ]
}
```

For suggestions, press control+space or click one of the blue "add" circles.

Credentials

☒ Google OAuth 2.0

OAuth 2.0 provides authenticated access to an API. [Show scopes ▾](#)

☒ API key

An API key is a unique string that lets you access an API.

EXECUTE

By clicking above, I agree that my use of the API Explorer is governed by the [Terms and Privacy Policy](#).

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