# Text Recognition and Extraction

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# Overview

Optical character recognition (OCR)

Handwriting recognition

API methods

# Optical Character Recognition

# What Is Optical Character Recognition (OCR)?

Detects text content in an image

Extracts identified text

Machine-readable character stream

Pixels are converted to characters

# What Is Optical Character Recognition (OCR)?

Automatic detection of language

Supports 25 languages

Users can take photos of text

# Requirements and Limitations

# Overview - OCR

**Requirements for OCR:**

- Input image >= 40 x 40 and <= 3200 x 3200 pixels
- No larger than 10 megapixels in size
- JPEG, PNG, GIF, BMP
- No larger than 4 megabytes

# Image Rotation and Orientation


Able to detect text orientation

Tries to correct image orientation

Useful when the image upside down

# Limitations of OCR


**OCR recognition limitations:**

- Blurry images
- Handwritten or cursive text
- Artistic font styles
- Small text size
- Complex backgrounds, shadows, glare or distortions
- Oversized or missing capital letters at the beginnings of words
- Subscript, superscript, or strikethrough text

# API Methods – OCR

**POST**

```
https://[location].api.cognitive.microsoft.com/vision/v1.0/
ocr[?language][&detectOrientation]
```

# OCR

- **language (optional) –** “unk” means auto-detect language

- **detectOrientation (optional) –** if true, the OCR service tries to detect / correct the image rotation

# Response


```
{
  "language": "en",
  "textAngle": -2.0000000000000338,
  "orientation": "Up",
  "regions": [
    {
      "boundingBox": "462,379,497,258",
      "lines": [
        {
          "boundingBox": "462,379,497,74",
          "words": [
            {
              "boundingBox": "462,379,41,73",
              "text": "ONE"
            },
          ]
        },
```

# Use Case: DocLogistics

Lower operational costs and no infrastructure to manage

# Demo

## Text recognition (OCR)

# Handwriting Recognition

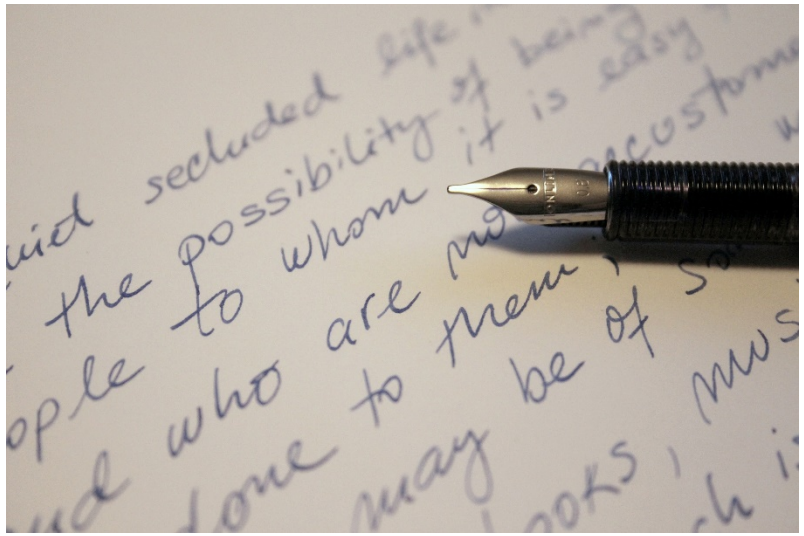
# What is Handwriting Recognition?

Detect and extract handwritten text from images

Different surfaces and backgrounds

# Handwriting Requirements

# Handwriting Requirements




**Requirements:**

- JPEG, PNG, and BMP.
- Image file size must be less than 4 MB.
- Image dimensions must be at least 40 x 40, at most 3200 x 3200.

**Currently preview stage**

**Only available in English**

# API Methods – Handwriting

**GET**

```
https://[location].api.cognitive.microsoft.com/vision/v1.0/
textOperations/{operationId}
```

# Get Handwritten Text Result

- **operationId –** Is the Id of the text returned by Recognize Handwritten Text.

**POST**

```
https://[location].api.cognitive.microsoft.com/vision/v1.0/
recognizeText[?handwriting]
```

# Recognize Handwritten Text

- **handwriting –** If “True” or not specified, handwriting recognition is performed.

# Demo

## Handwriting Recognition

# Specific Field Logic

The ability to give meaning
to part of the extracted text

# Demo

## Adding Field Logic

# Summary

Optical Character Recognition (OCR)

Handwriting Recognition

Specific Field Logic