Visual Intelligence using Custom Vision Service

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Agenda

- Computer Vision Service
- Custom Vision Service
  - Create Custom Vision Service
  - Behind the scenes
  - Best Practices
- Demo

Computer Vision Service

Computer Vision Service is one of the cognitive service created using machine learning algorithms that Microsoft has developed to solve problems in the field of Artificial Intelligence (AI)

This analyze images for content and other useful information

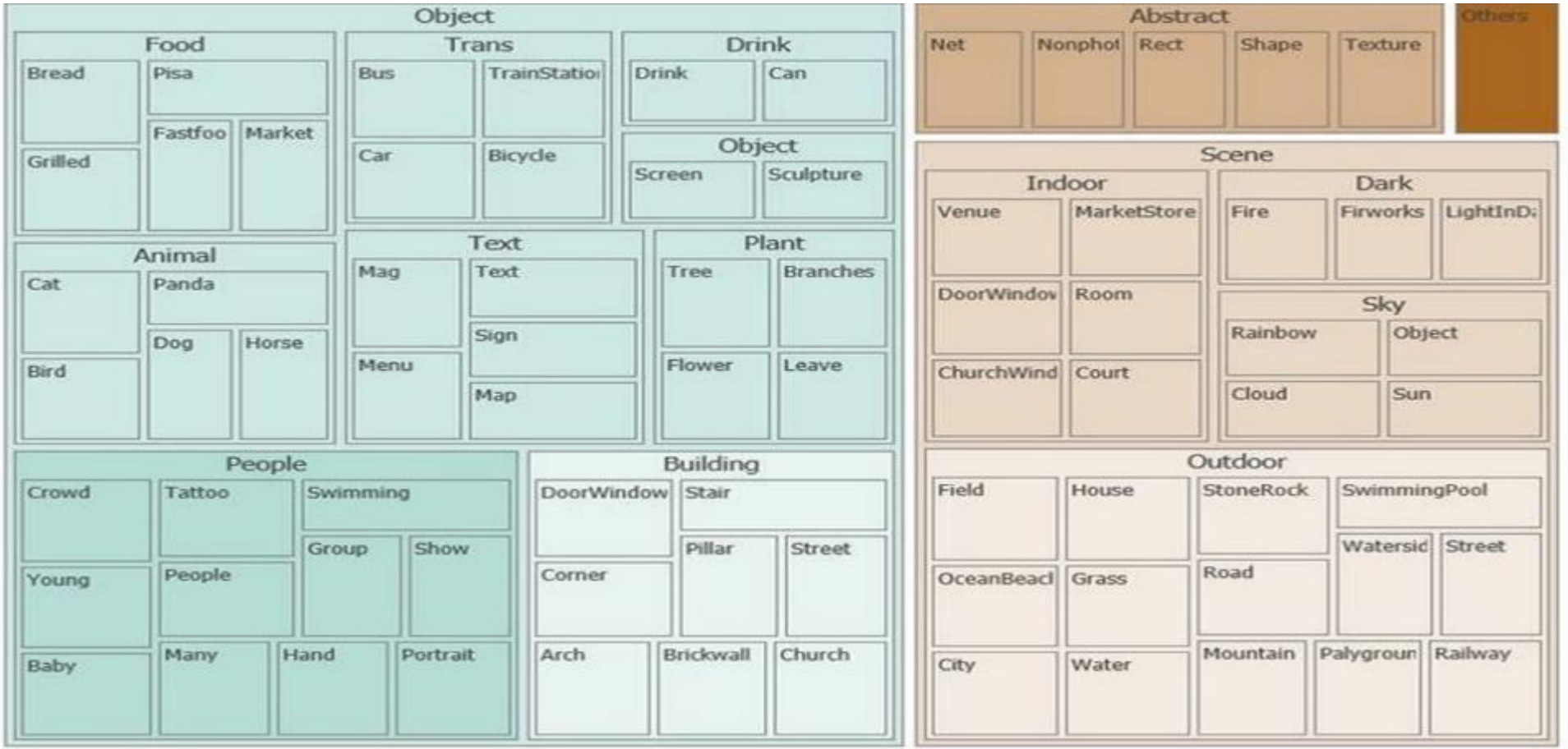
Computer Vision Service contd...

This API helps in,

- Tag images based on content.
- Categorize images
- Identify the type and quality of images.
- Detect human faces and return their coordinates.
- Use optical character recognition to identify printed text found in images.
- Recognize handwritten text.

Computer Vision Service contd…

Categorization of the objects: API recognizes about 2000 distinct objects and groups them into 87 classifications.



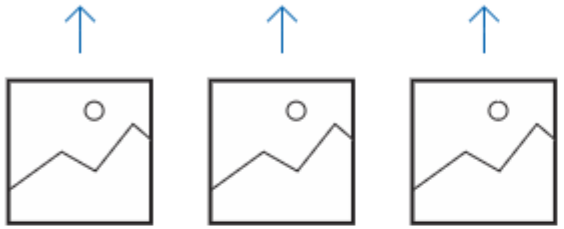
Custom Vision Service

Custom Vision Service is a tool for building custom image classifiers, this brings domain-specific deep Neural Network-powered image recognition to your fingertips.

Features / Benefits:

- It designed to make it easy to start building your classifier, and to help you improve the quality of your classifier over time
- Brings the power of machine learning to your apps
- Best when the item you are trying to classify is prominent in your image.
- It does "image classification" but not yet "object detection."
- The best use case for this tool is if you have a **specific collection of unique things**.
- Supports Microsoft accounts (MSA) and AAD

Create Custom Vision Service

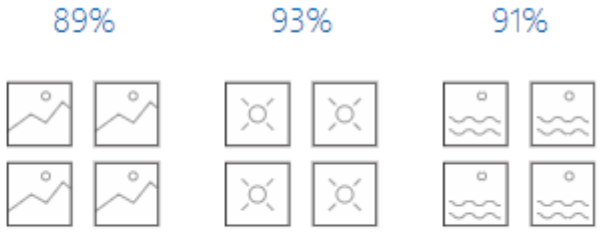


Upload Images

Bring your own labeled images, or use Custom Vision to quickly add tags to any unlabeled images.

Train

Use your labeled images to teach Custom Vision the concepts you care about.



Evaluate

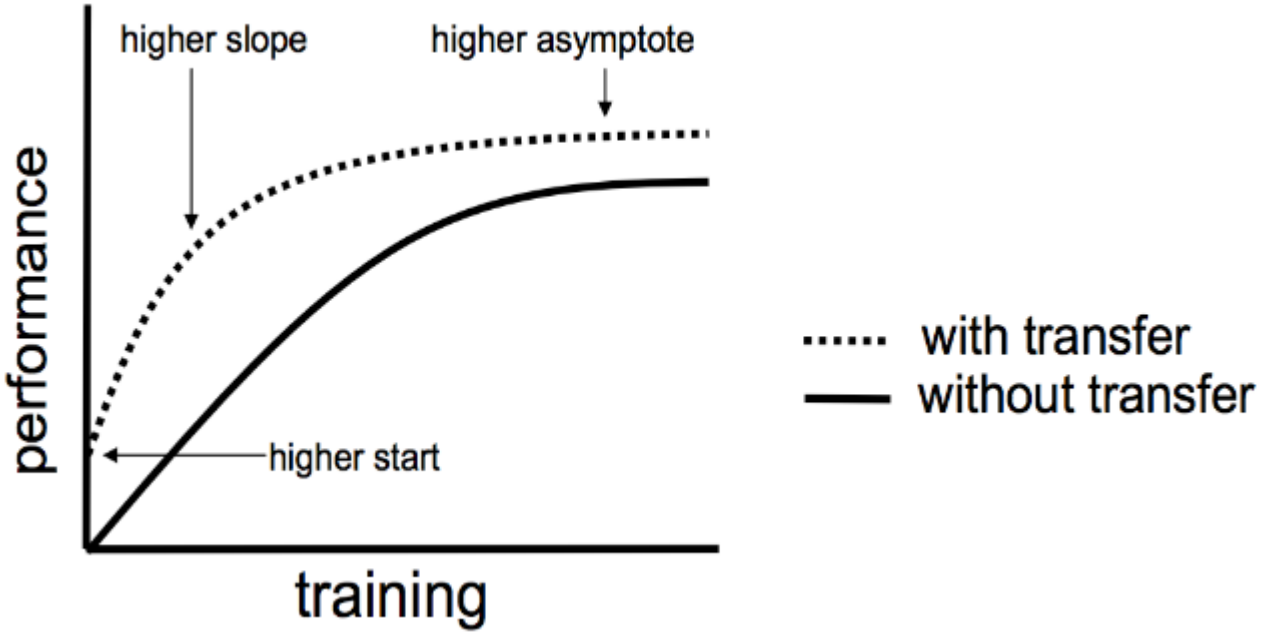
Use simple REST API calls to quickly tag images with your new custom computer vision model.

Behind the scenes - Custom Vision

Transfer learning, is a solution for research problem in machine learning that focuses on storing knowledge gained while solving one problem and applying it to a different but related problem.

Transfer learning is an optimization, a shortcut to saving time or getting better performance.

- **Higher start** → The initial skill (before refining the model) on the source model is higher than it otherwise would be.
- **Higher slope** → The rate of improvement of skill during training of the source model is steeper than it otherwise would be.
- **Higher asymptote** → The converged skill of the trained model is better than it otherwise would be.



Best Practices for using Custom Vision

- Use at least 30 images for each tag
- Images should be the focus of the picture
- Use sufficiently diverse images and backgrounds (ex: cats with red background and dogs with blue background)
- Train with images that are similar in {quality, resolution, lighting, etc.} to the images that will be used in prod
- Custom Vision Service accepts training images in .jpg, .png, and .bmp format, up to 6 MB per image. (Prediction images can be up to 4 MB per image.)
- Recommend that images be 256 pixels on the shortest edge. Any images shorter than 256 pixels on the shortest edge are scaled up by Custom Vision Service.

Demo

The comprehensive way to manage and monitor Azure Services related to Enterprise Integration.

CloudMonix is an Azure monitoring and automation platform. It provides in-depth monitoring of 30+ Azure services, automated recovery of production issues , sophisticated auto-scaling, integration to many 3rd party products and much more. All attendees receive a promotion code good for an unprecedented $300 off monitoring.