



Section 4

Computer Vision in Microsoft Azure

Overview of Computer Vision Services in Azure

- **Azure Cognitive Services**

Services	Pre-trained Models	Custom Models	Description
Computer Vision	X		Analyze content in images and videos
Custom Vision		X	Customize image recognition to fit your business needs
Face	X	X	Detect and identify people and emotions in images
Form Recognizer	X	X	Extract text, key/value pairs, and tables from documents



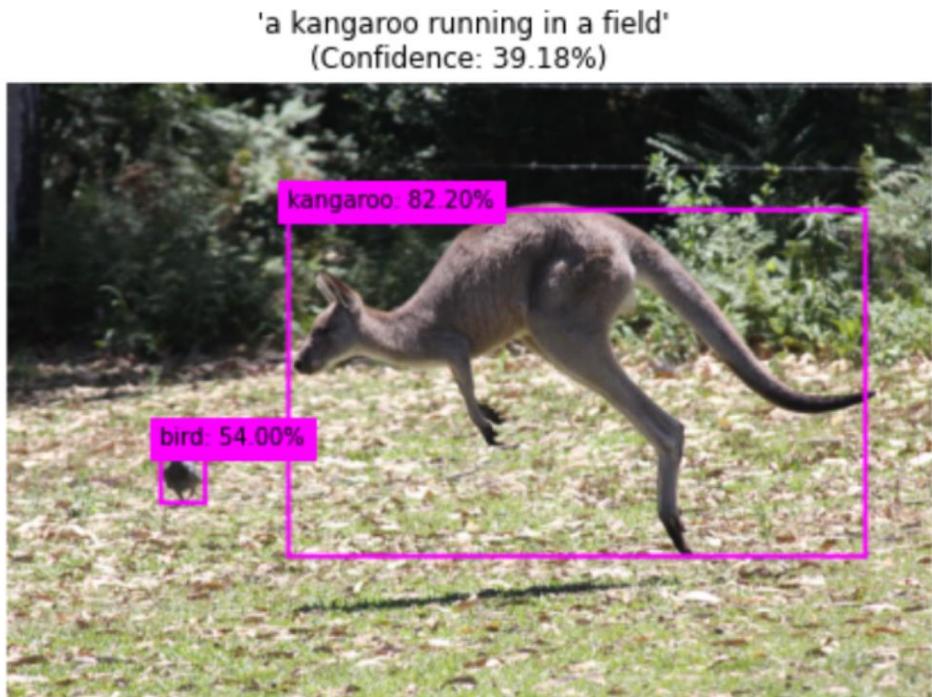
Computer
Vision
Service



Azure Cognitive Computer Vision Service - Overview

Image Description	Image Type	Optical Character Recognition
Image Tags	Image Category	Domain-Specific Content Detection
Object Detection	Brand Detection	Adult Content Detection
Color Scheme	Face Detection	Thumbnails Generation

Computer Vision Service – Image Analysis



Tags:

- animal: 99.94%
- tree: 99.81%
- outdoor: 99.77%
- grass: 99.77%
- mammal: 98.27%
- kangaroo: 88.95%
- zoo: 84.08%
- deer: 80.77%
- marsupial: 75.65%
- macropodidae: 75.10%
- terrestrial animal: 62.25%
- fawn: 59.86%
- wildlife: 51.34%

'a large building with a body of water in the front with Sydney Opera House in the background'
(Confidence: 35.22%)



Tags:

- water: 99.40%
- outdoor: 98.62%
- architecture: 95.58%
- lake: 72.93%
- opera house: 65.58%
- ship: 65.47%
- sky: 64.34%
- building: 59.25%
- boat: 15.60%
- island: 11.48%

Image Description

- A **caption** or a list of **captions** ordered from highest to lowest **confidence**
- based on a collection of content tags

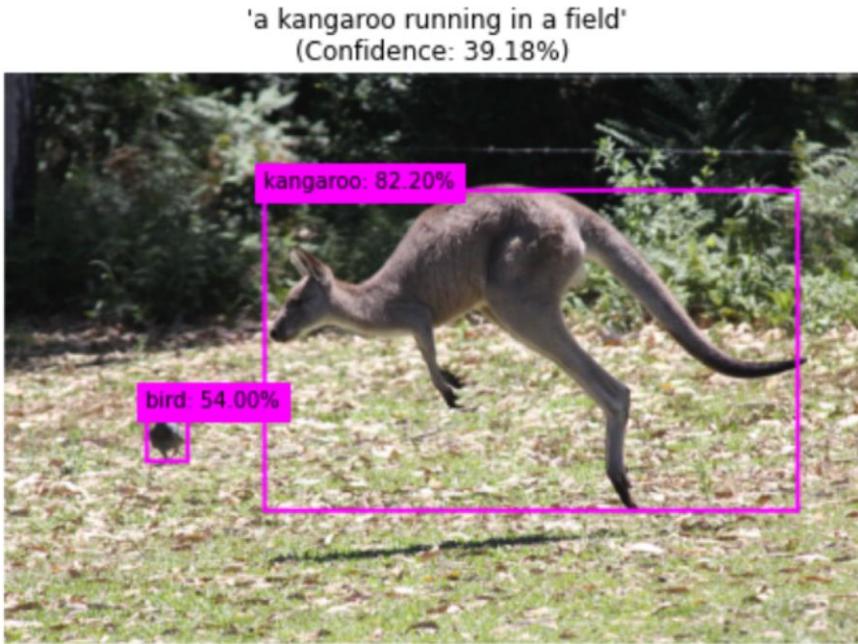
Image Tags

- Tags based on thousands of **recognizable objects, living beings, scenery, and actions**
- Tag's **confidence**

Object Detection

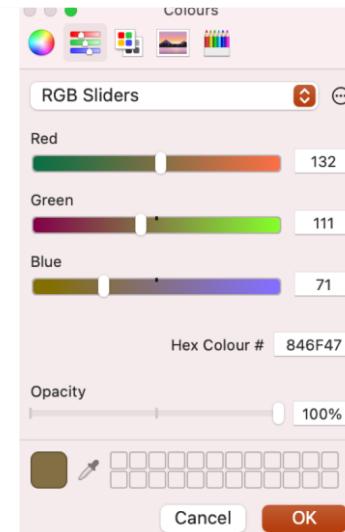
- **Location** of the object – **bounding box**'s coordinates

Computer Vision Service – Color Scheme



Color:

- Black & White: False
- Accent color: **846F47**
- Dominant background color: Black
- Dominant foreground color: Black
- Dominant color: ['Black']



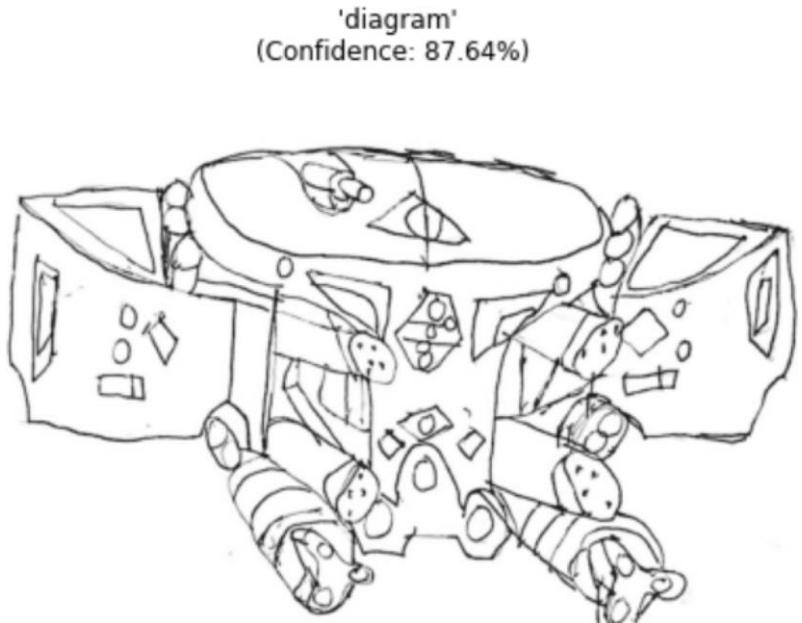
Color:

- Black & White: True
- Accent color: **666666**
- Dominant background color: White
- Dominant foreground color: Grey
- Dominant color: ['White', 'Grey', 'Black']

Image Color Scheme

- Black & White: (Boolean value)
 - 1 – True
 - 0 – False
- Dominant background color
- Dominant foreground color
- Dominant color of the image
- Set of dominant color (12): **black, blue, brown, gray, green, orange, pink, purple, red, teal, white, and yellow**
- Accent color: **Hexadecimal code** for HTML coding (combination of dominant colors and saturation)

Computer Vision Service – Image Type



Type of the image:

Image is ambiguously clip art.
Image is a line drawing

Image Type

- Likelihood of clip art:
 - 0 – Non-clip-art
 - 1 – Ambiguous
 - 2 – Normal-clip-art
 - 3 – Good-clip-art
- Line Drawing: (Boolean value)
 - 1 – True
 - 0 – False

Type of the image:

Image is good clip art.
Image is not a line drawing.

Computer Vision Service – Image Category

'a city skyline with a bridge in the background'
(Confidence: 41.90%)



Categories:
- outdoor_with confidence 0.78%
- outdoor_waterside with confidence 54.69%

'a panda in the grass'
(Confidence: 54.86%)



'a field of flowers'
(Confidence: 45.60%)



'clouds and blue sky'
(Confidence: 34.63%)



airplane: 66.50%

Categories:
- sky_cloud with confidence 96.09%

'a tree with purple flowers'
(Confidence: 53.18%)



Categories:
- plant_tree with confidence 88.67%

'a large crowd of people at a market'
(Confidence: 33.20%)



Categories:
- animal_panda with confidence 99.61%

Categories:
- plant_flower with confidence 90.23%

Categories:
- animal_dog with confidence 99.61%

Categories:
- indoor_marketstore with confidence 98.05%

Categories:
- dark_fireworks with confidence 99.61%

Computer Vision Service – Image Category & Taxonomy



Category Taxonomy

- 86 categories
- parent/child hereditary hierarchy

Image Category

- Categories
- Confidences

Computer Vision Service – Brands Detection



'Apple' brand detected
(Confidence 84.7% at location 383, 456, 237, 319)



'Intel' brand detected
(Confidence 62.7% at location 443, 572, 785, 900)



'IBM' brand detected
(Confidence 88.2% at location 445, 711, 155, 387)



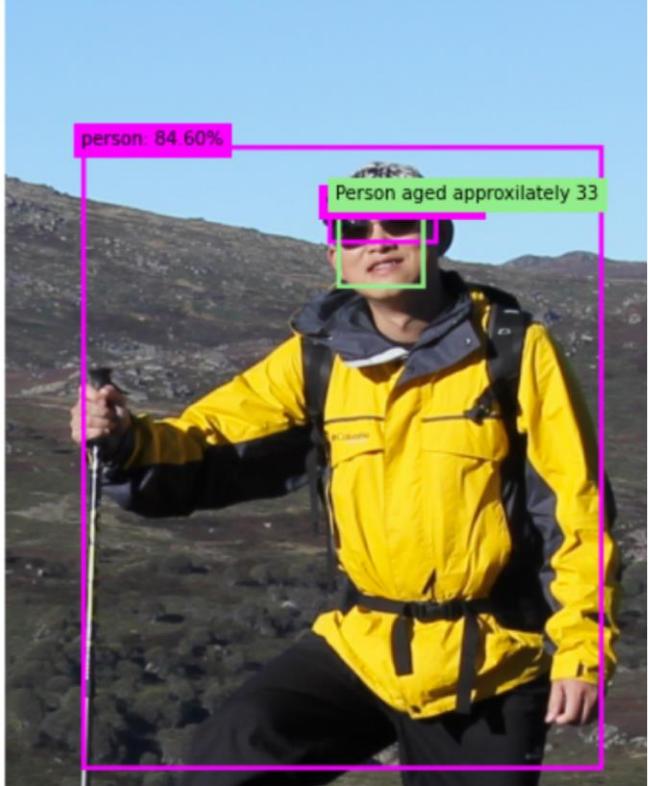
'Microsoft' brand detected
(Confidence 84.5% at location 374, 509, 291, 431)

Brands Detection

- Brand name
- Confidence score
- Location - coordinates of a bounding box around the logo
- Logo image and brand name can be recognized as two separate logos

Computer Vision Service – Face Detection

'a person in a yellow jacket and sunglasses on a snowy mount
(Confidence: 42.17%)



Faces in the image:

'Male' of age 33 at location 365, 222, 462, 319

Faces in the image:

'Male' of age 25 at location 546, 483, 707, 644

'Male' of age 26 at location 961, 490, 1107, 636

'Male' of age 30 at location 1310, 509, 1446, 645

'a group of people posing for a photo'
(Confidence: 41.85%)



Face Detection

- Age
- Gender
- Location - coordinates of a bounding box

Computer Vision Service – Domain-Specific Content



'a large metal tower with a red and white stripe on it with Oriental Pearl Tower in the background'
(Confidence: 36.58%)



Landmarks in the image:
Oriental Pearl Tower

'Sydney Harbour Bridge over water with a city in the background'
(Confidence: 55.31%)



Domain-specific Content

Celebrities

Landmarks

- Name
- Confidence score
- Coordinates of a bounding box around the logo

Two ways to use:

- Scoped analysis (standard)
- Enhanced categorization analysis
 - Celebrities: **people_** category
 - Landmarks: **outdoor_ or building_** categories

Computer Vision Service – Optical Character Recognition (OCR) – OCR API



Regions:

- Line: FIRE SAFETY DOOR
- Line: DO NOT OBSTRUCT
- Line: DO NOT KEEP OPEN

Regions:

- Line: Pay Station

Regions:

- Line: Carpark 1

- Line: D

Regions:

- Line: 0-1/2 Hour
- Line: 1 Hour
- Line: 1 - 2 Hours
- Line: 2-3 Hours
- Line: 3 - 4 Hours
- Line: 4-5 Hours
- Line: 5 Hours & Over

Regions:

- Line: \$5
- Line: \$8
- Line: \$11
- Line: \$13
- Line: \$15
- Line: \$17

Regions:

- Line: Take Ticket With You &
- Line: Pay At Pay Station On Exit
- Line: Pay Stations Accept Credit Cards, Notes & Gold Coins

OCR API

- Read a small amount of text
- Have false positive with large amount of text
- Multiple languages (27)
- Detects Synchronously (Quick)
- Returns bounding box coordinates
 - Regions that contain text
 - Lines of text in each region
 - Words in each line of text

Computer Vision Service – Optical Character Recognition (OCR) – Read API

There are many ways to save water



Check for leaks

One leaking tap can waste up to 2,000 litres a month. Look around your property for obvious leaks – like a dripping tap or a running toilet. Our WaterFix® service can help you find and fix leaks.



Reduce shower time

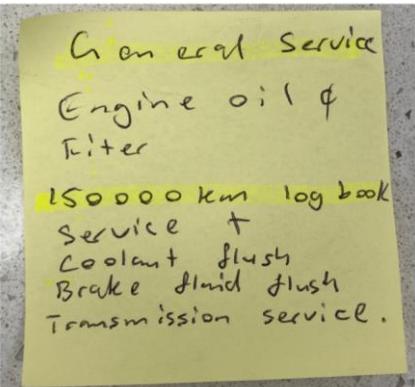
Every extra minute in a shower is water down the drain, but you can still love your shower. About 25% of the energy used in the average Australian home is used to heat water. Keep showers to four minutes and install a 4-star rated showerhead with WaterFix® to save water and energy.



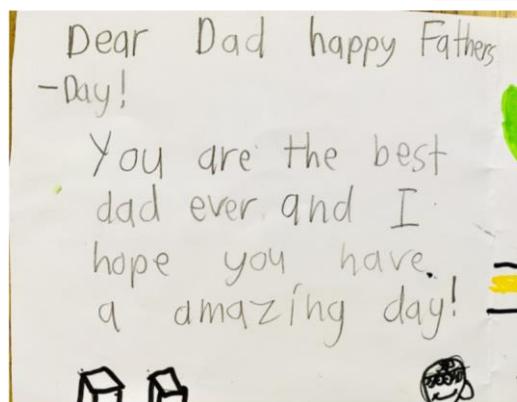
Plug the sink

Wash your vegetables and rinse dishes in a plugged sink or basin, not under a running tap. In the bathroom, don't leave the water running while you brush your teeth or shave. We can install aerators and water efficient fixtures as part of WaterFix®, but using a plug is one of the easiest ways to save water.

- Line: There are many ways
- Line: to save water
- Line: Check for leaks
- Line: Reduce shower time
- Line: Plug the sink
- Line: One leaking tap can waste up to
- Line: Every extra minute in a shower is
- Line: Wash your vegetables and rinse
- Line: 2,000 litres a month. Look around
- Line: water down the drain, but you can still
- Line: dishes in a plugged sink or basin, not
- Line: your property for obvious leaks -
- Line: love your shower. About 25% of the
- Line: under a running tap. In the bathroom,
- Line: like a dripping tap or a running toilet.
- Line: energy used in the average Australian
- Line: don't leave the water running while
- Line: Our WaterFix® service can help you
- Line: home is used to heat water. Keep
- Line: you brush your teeth or shave. We
- Line: find and fix leaks.
- Line: showers to four minutes and install
- Line: can install aerators and water efficient
- Line: a 4-star rated showerhead with
- Line: fixtures as part of WaterFix®, but
- Line: WaterFix® to save water and energy.
- Line: using a plug is one of the easiest
- Line: ways to save water.



G'en eral Service
Engine oil &
filter
150000 km log book
Service
+
coolant
flush
Brake fluid flush
Transmission service.



Dear Dad happy Fathers
- Day !
you are the best
dad ever and I
hope you have.
a amazing day !

Read API

- Optimized for **larger documents**
- Printed and **handwritten** text
- Supported Language: Dutch, English, French, German, Italian, Portuguese and Spanish
- Detects **asynchronously** (wait until the analysis to complete)
- coordinates
 - **Pages** - One for each page of text (page size & orientation)
 - **Lines** of text on a page
 - **Words** in each line of text

Computer Vision Service – Adult Content Detection

Adult Content Detection - Basic

- **Categories:**
 - **Adult** – explicitly sexual in nature (e.g., nudity and sexual acts)
 - **Racy** – sexually suggestive in nature (less sexually explicit content)
 - **Gory** – blood/gore
- **Outputs**
 - Three Boolean value
 - Confidence score



A bleeding finger protected by a band-aid

Ratings:

- Adult: False with confidence 1.38%
- Racy: False with confidence 1.67%
- Gore: True with confidence 80.71%

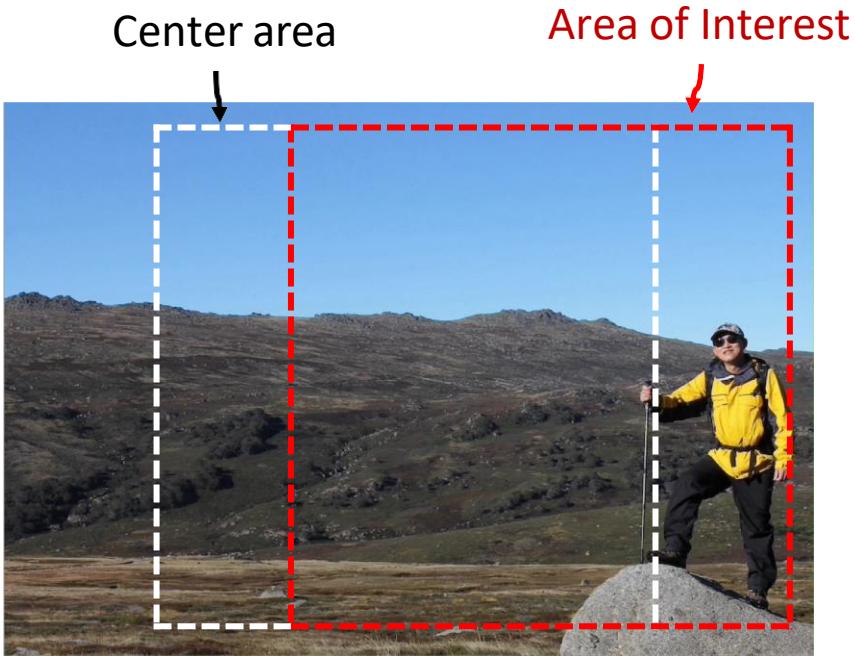
Categories:

- people_hand with confidence 99.22%

Azure Content Moderator - Advanced

- Analyze text, image, and videos
- **Moderation Outputs**
 - Classification Label
 - Classification Score
 - Operation-specific insights
- **Review APIs**
- **Review Tools** – web-based
 - integrate with human reviewers

Computer Vision Service – Thumbnails Generation

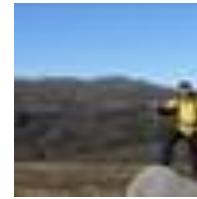


Smart
Cropping
Disabled



Use the
center area
of image to
generate
thumbnails

Smart
Cropping
Enabled



Use the area
/ region of
interest of
image to
generate
thumbnails

Area of Interest

- Coordinates of **area of interest / region of interest (ROI)**
- Bounding box

Thumbnails Generation

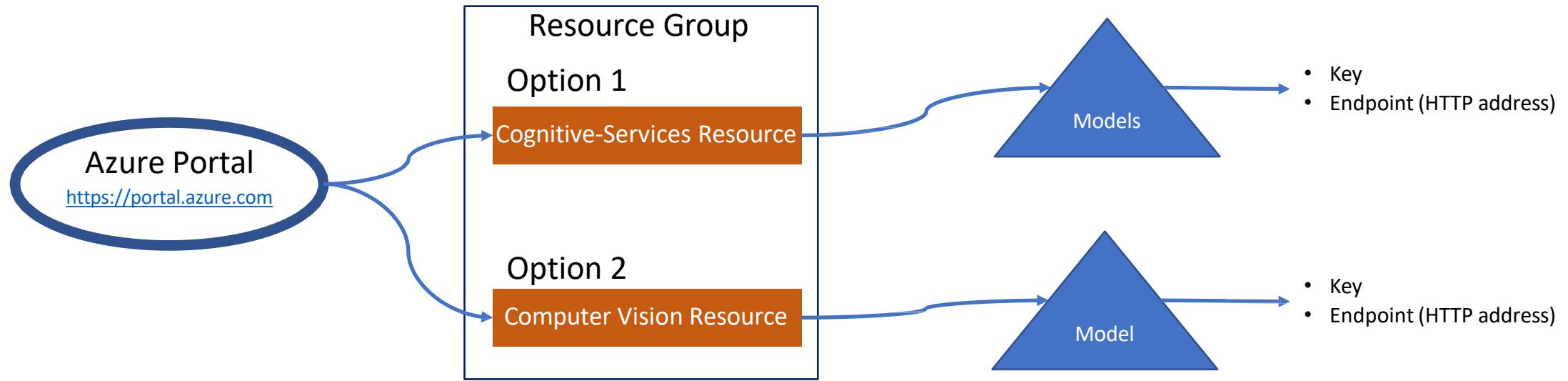
(with Smart Cropping Enabled)

- Area of interest / region of interest (ROI) identification
- Cropped image based on ROI
- Small version of image
 - **50 x 50 pixels**

Computer Vision Service – Image Criteria

- General Image Criteria:
 - Supported format: **JPEG, PNG, GIF, BMP**
 - File size: **< 4 MB**
 - Dimensions: **> 50 x 50 pixels**
- **OCR API:**
 - Dimensions: **50 x 50 to 4200 x 4200 pixels**
- **Read API:**
 - Supported format: **JPEG, PNG, BMP, PDF, TIFF**
 - PDF and TIFF documents:
 - For the free tier, only the first 2 pages are processed.
 - For the paid tier, up to 2,000 pages are processed.
 - Image file size: **< 50 MB (4 MB for the free tier)**
 - Dimensions: **50 x 50 to 10000 x 10000 pixels**
 - PDF File Dimensions: **< 17 x 17 inches (A3)**

Computer Vision Service – Create Resource



Options	Purpose	Resource Key & Endpoint
Cognitive-Services Resource	<ul style="list-style-type: none">Use other cognitive services togetherSimplify administration and development	For all Cognitive services models
Computer Vision Resource	<ul style="list-style-type: none">Track utilization and costs of Computer Vision service separately	For Computer Vision model only

Hands-on Lab

Analyzing Image

with

Azure Computer Vision Service

Hands-on Lab

Analyzing Text

with

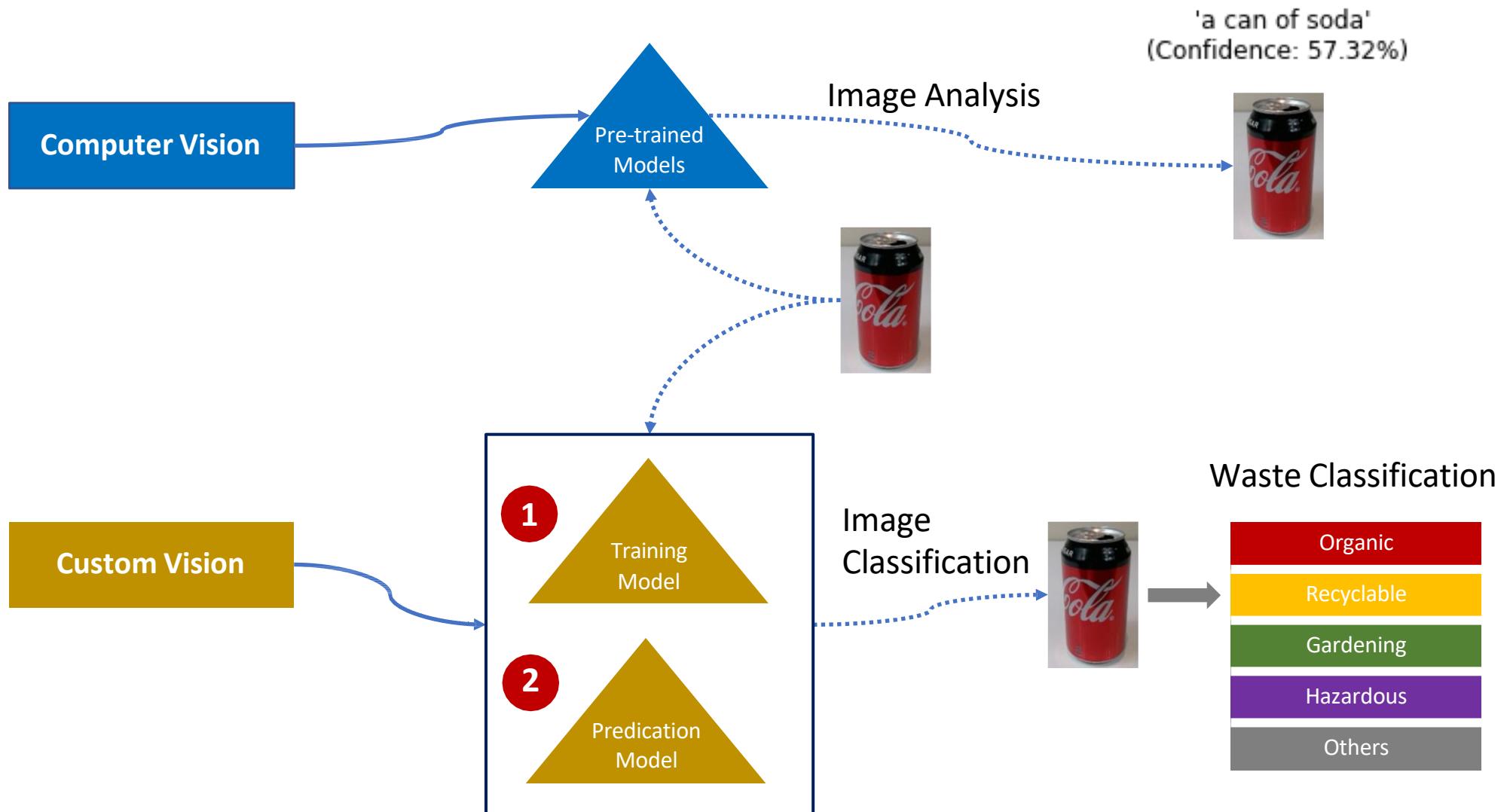
Azure Computer Vision Service



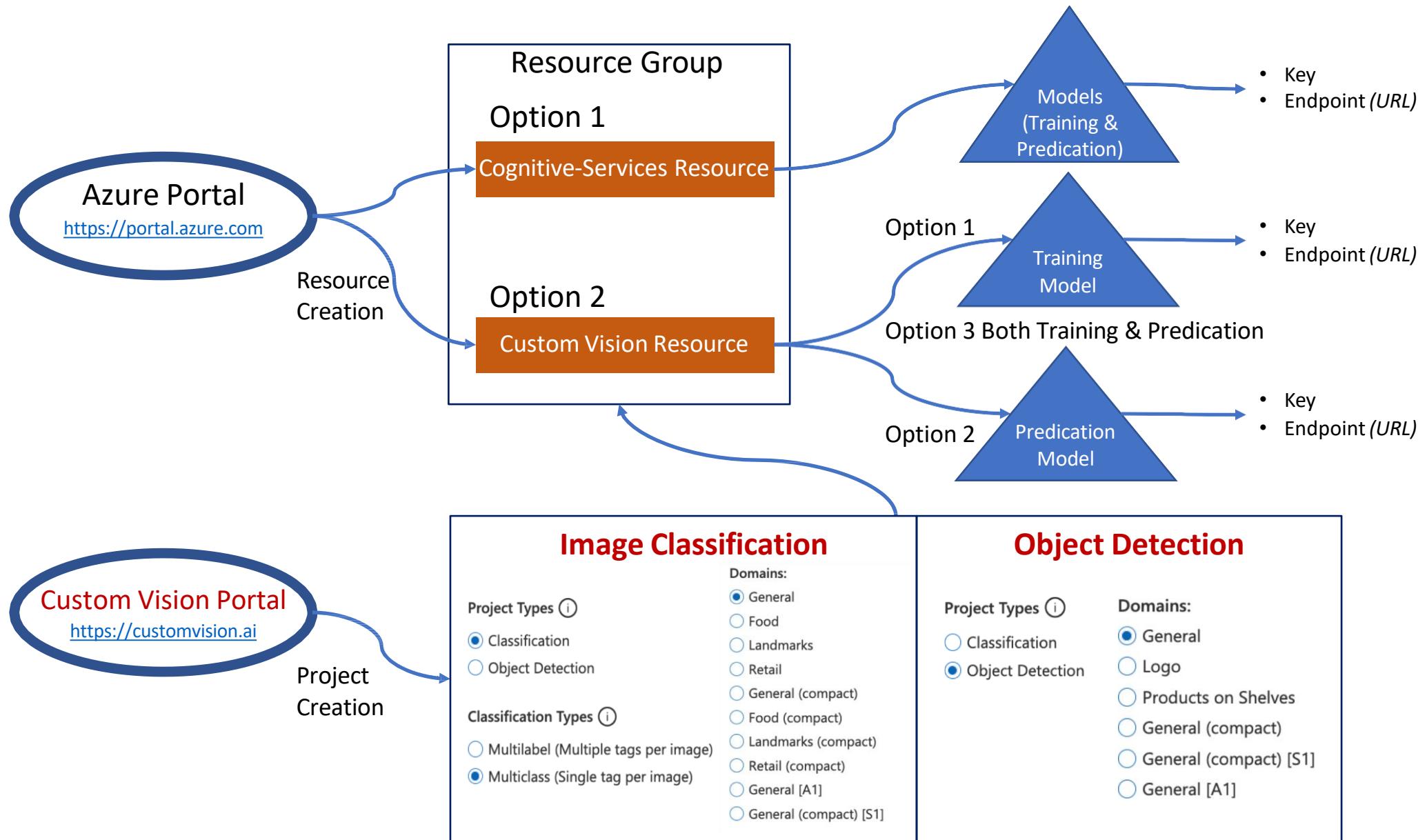
Custom Vision Service



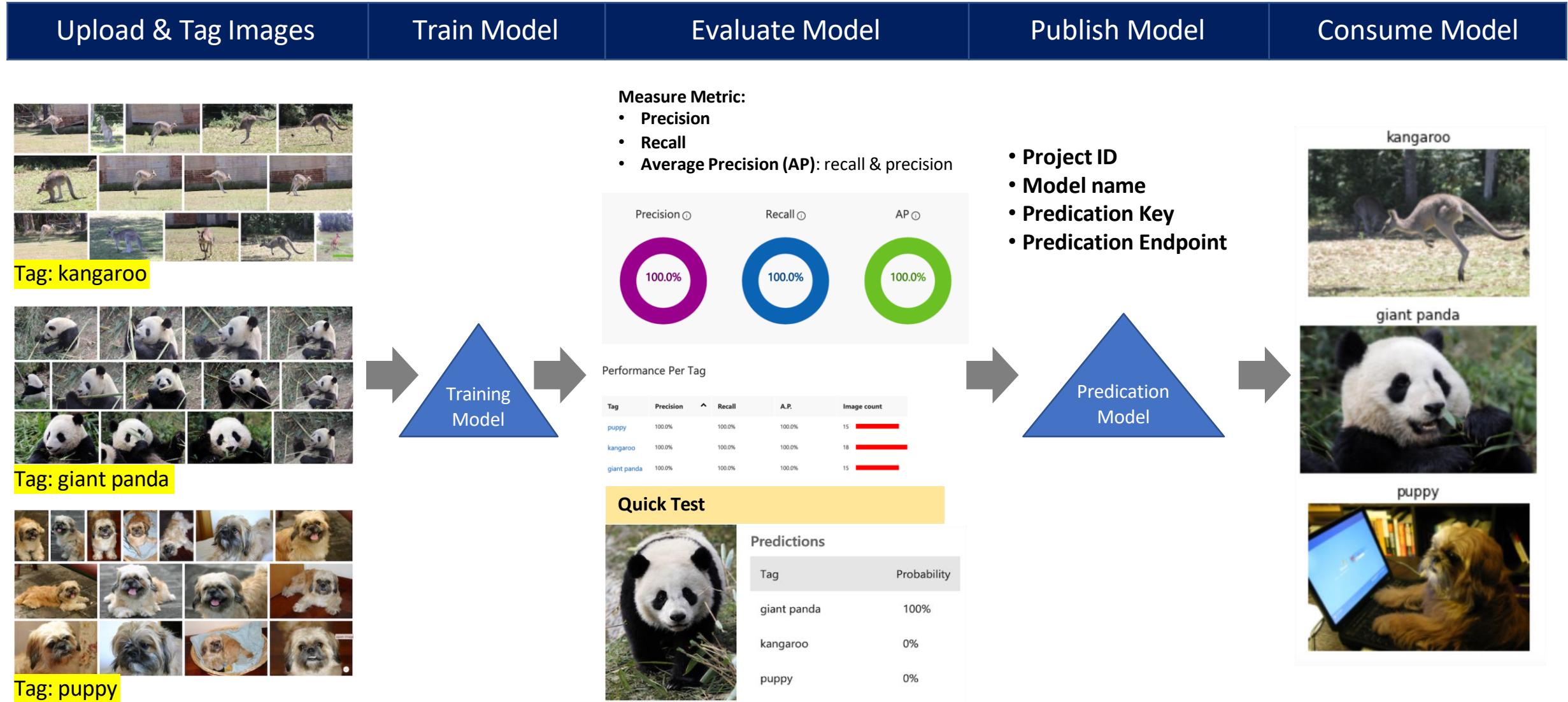
Custom Vision Service – Introduction



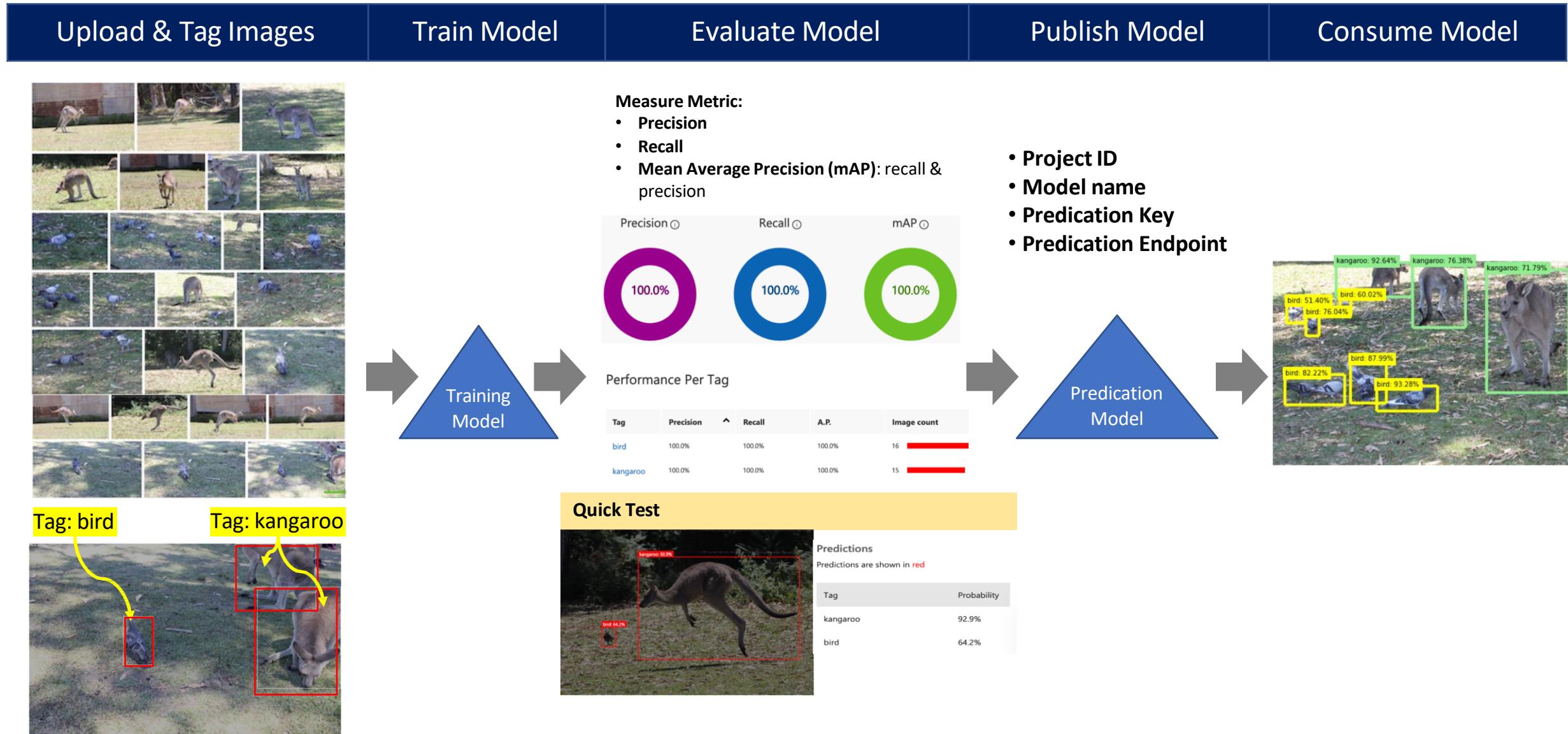
Custom Vision Service – Resource & Project Creation



Custom Vision Service – Image Classification Steps



Custom Vision Service – Object Detection Steps



Use Cases

Image Classification Use Case	Description
Product Identification	Identification of items/products in the supermarkets
Animals/Flowers Identification	Identification of known animals/flowers in the wild
Disaster Investigation	Evaluation of key infrastructure (bridges, railways, etc.) in aerial surveillance images
Medical Imaging Diagnosis	Evaluation of X-ray or Magnetic resonance imaging (MRI) images <ul style="list-style-type: none">• Detection of diabetic retinopathy stages

Object Detection Use Case	Description
Personal Protective Equipment (PPE) Detection	Detection of safety helmet, glasses, goggles, gloves, face masks, face shield, high visibility and protective workwear, etc.
Building Safety Evaluation	Detection of fire extinguishers, safety signs, etc.
Self-driving Cars	Lane Keeping Assist (LKA) - road markings detection
Medical Imaging Diagnosis	Evaluation of X-ray or Magnetic resonance imaging (MRI) images <ul style="list-style-type: none">• Unknown object detection

Hands-on Lab

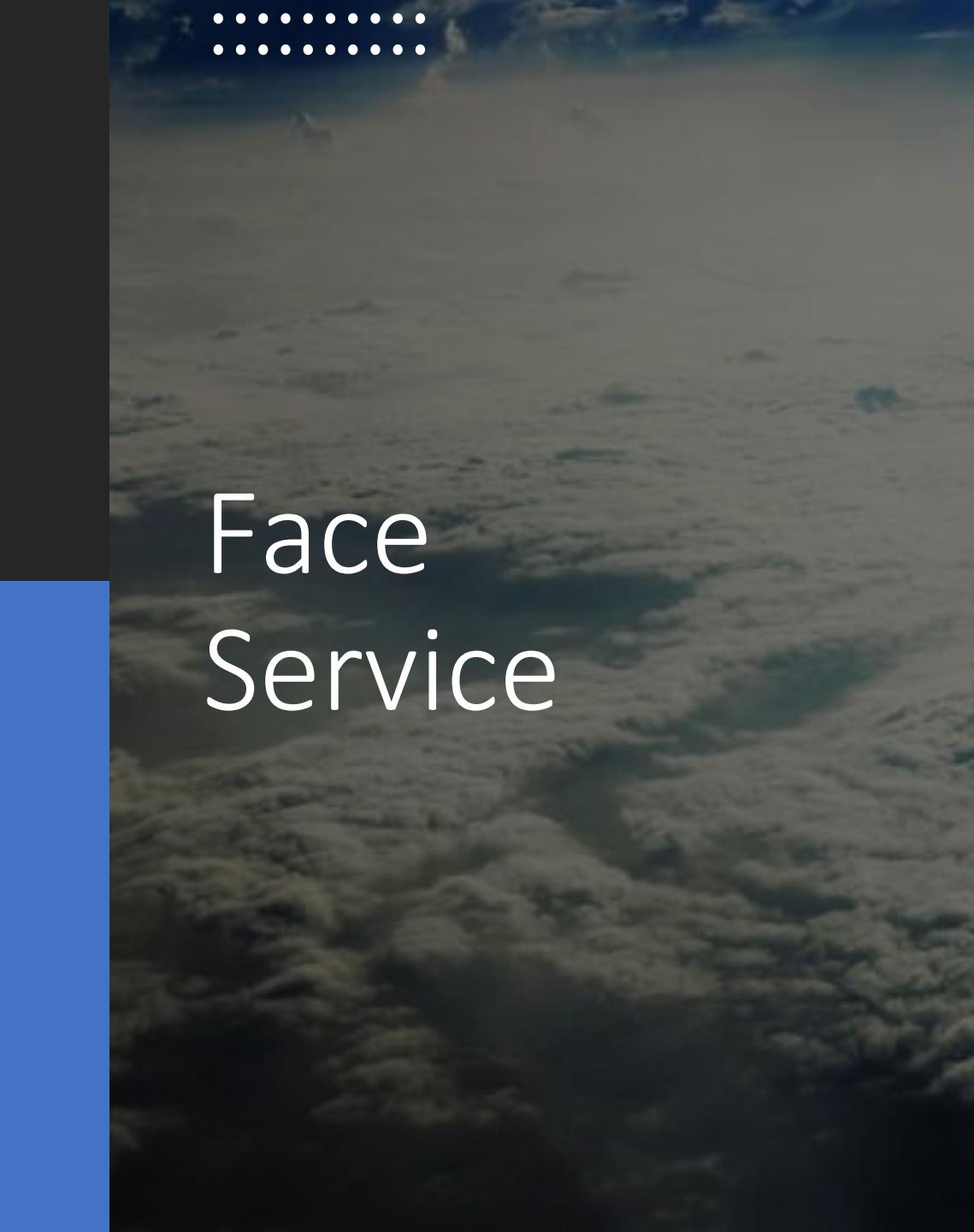
Classifying Images

with

Azure Custom Vision Service

Hands-on Lab

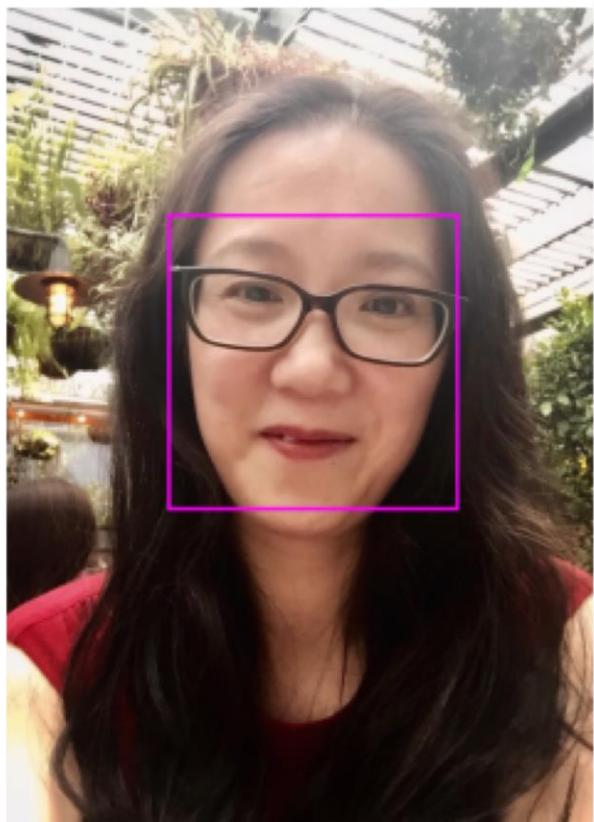
Detecting Object with Azure Custom Vision Service



Face
Service



Face Service – Face Detection



(1 faces detected)

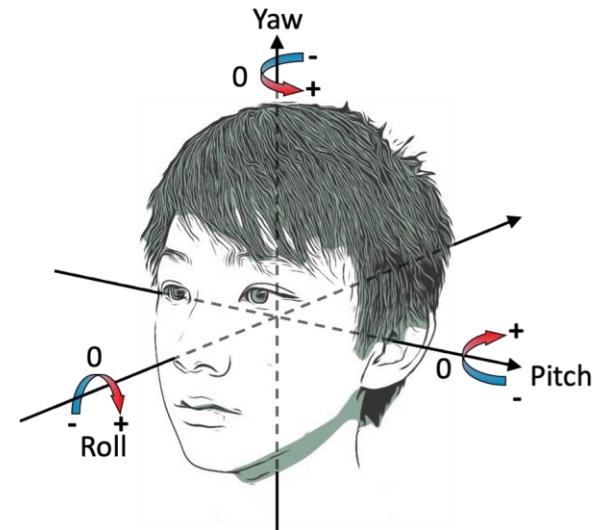
Face ID:	8395aa65-899d-4665-ab35-1c82af6f40b7
Person aged approximately	27
Gender:	female
Smaile:	0.807
FacialHair:	- moustache: 0.0 - beard: 0.0 - sideburns: 0.0
Glasses:	readingGlasses
Hair:	- bald: 0.16 - invisible: False - hair color: [{"color": "brown", "confidence": 0.95}, {"color": "black", "confidence": 0.78}]
Emotion:	- anger: 0.0 - contempt: 0.004 - disgust: 0.008 - fear: 0.0 - happiness: 0.807 - neutral: 0.179 - sadness: 0.001 - surprise: 0.0
Makeup:	- eye_makeup: False - lip_makeup: False
Occlusion:	- forehead_occluded: False - eye_occluded: False - mouth_occluded: False
Accessories:	[{"type": "glasses", "confidence": 0.99}]
Head Pose:	- roll: 3.9 - yaw: -1.9 - pitch: -5.5
Blur:	{"blur_level": "Low", "value": 0.0}
Exposure:	{"exposure_level": "GoodExposure", "value": 0.52}
Noise:	{"noise_level": "Low", "value": 0.25}

Face ID

- A unique identifier string

Face Attribute

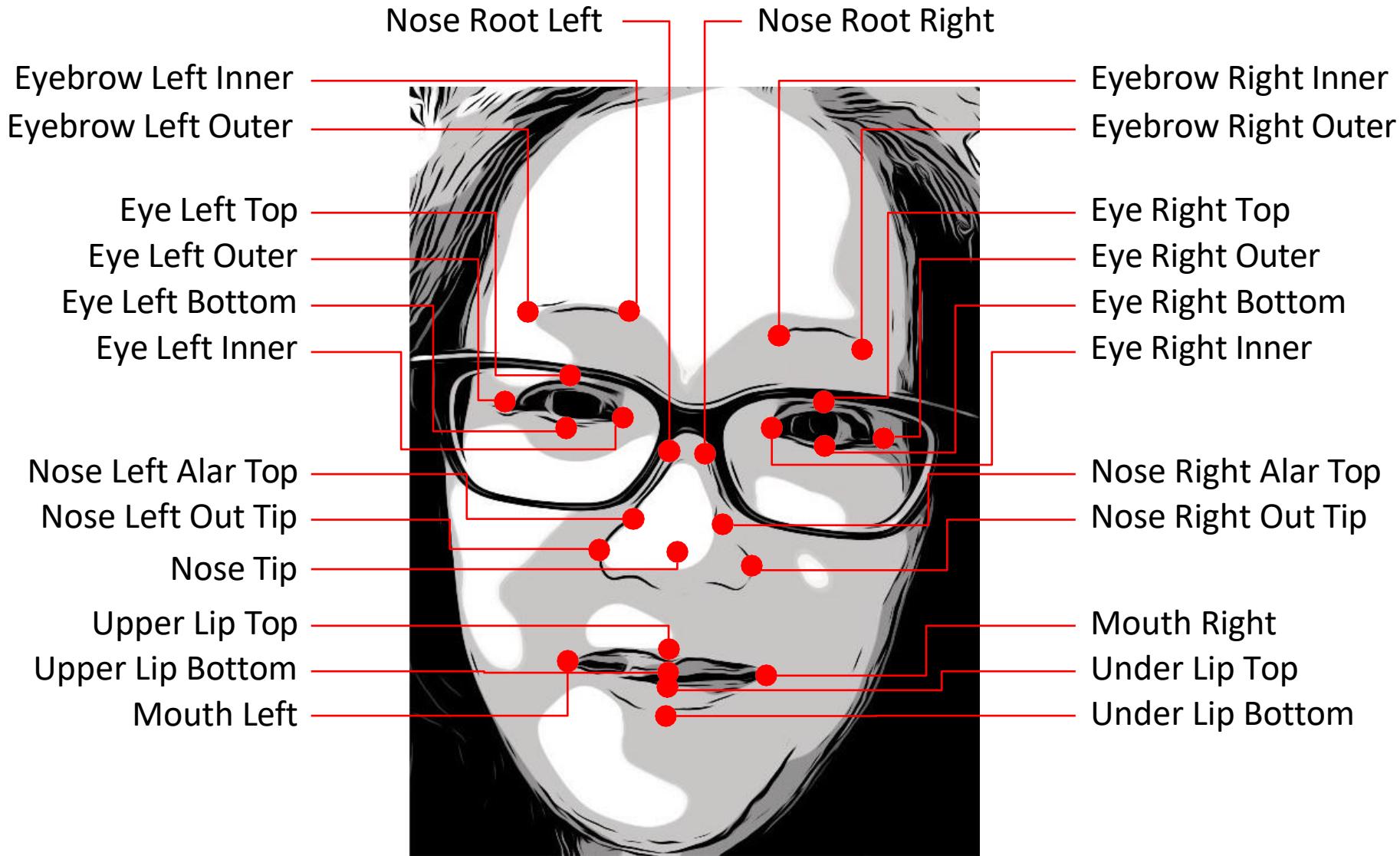
- 14 attributes
- Head Pose (3D)



Face Service – Face Detection - Attribute

#	Attributes	Outputs
1	Age	Estimated age in years
2	Gender	'male' or 'female'
3	Smile	Smile intensity (a number between [0,1])
4	Facial Hair	moustache, beard, sideburns + confidences
5	Glasses	'noGlasses', 'readingGlasses', 'sunglasses', 'swimmingGoggles'
6	Head Pose	'roll', 'yaw', 'pitch' with degrees
7	Emotion	'anger', 'contempt', 'disgust', 'fear', 'happiness', 'neutral', 'sadness', 'surprise' + confidences
8	Hair	'bald' with confidence Invisible (TRUE/FALSE) Hair Color: 'unknown', 'white', 'gray', 'blond', 'brown', 'red', 'black', 'other' + confidence
9	Makeup	Eye Makeup (TRUE/FALSE); LIP Makeup (TRUE/FALSE)
10	Occlusion	Forehead occluded (TRUE/FALSE) Eye occluded (TRUE/FALSE) Mouth occluded (TRUE/FALSE)
11	Accessories	'headWear', 'glasses', 'mask' + confidence
12	Blur	Blur Level: 'Low', 'Medium', 'High' + a number indicating blurring level (0 to 1)
13	Exposure	Exposure Level: 'UnderExposure', 'GoodExposure', 'OverExposure' + a number indicating exposure level (0 to 1) - [0, 0.25] is under exposure; [0.25, 0.75] is good exposure; [0.75, 1] is over exposure
14	Noise	Noise Level: 'Low', 'Medium', 'High' + a number indicating noise level (0 to 1) - [0, 0.3] is low noise level. [0.3, 0.7] is medium noise level. [0.7, 1] is high noise level

Face Service – Face Detection - Landmarks



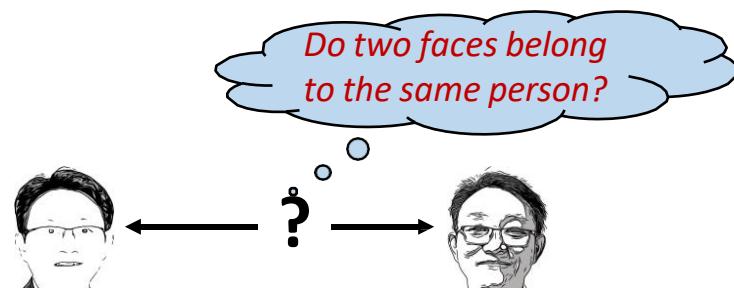
Face Landmarks

- 27 landmark points
 - Eyebrow
 - Eye
 - Nose
 - Mouth
 - Lip
- Locations of the points

Face Service – Face Recognition

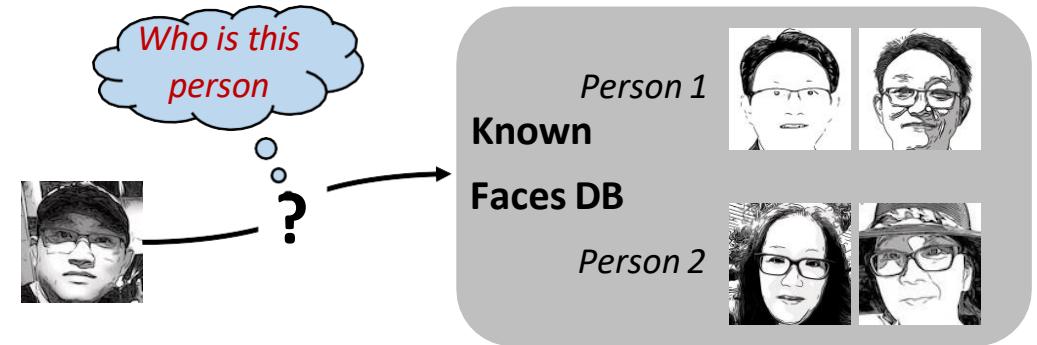
Verification

- Analyze the likelihood that two faces belong to the same person



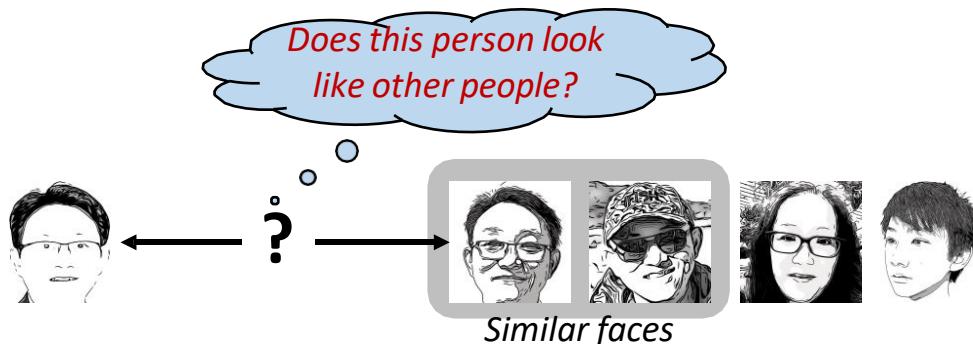
Identification

- Search and identify faces (one to many)



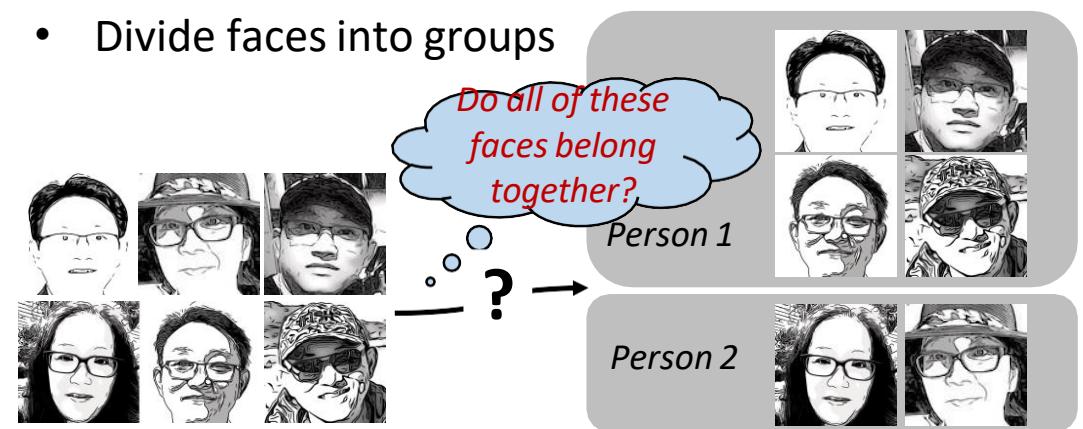
Similarity

- Find similar faces

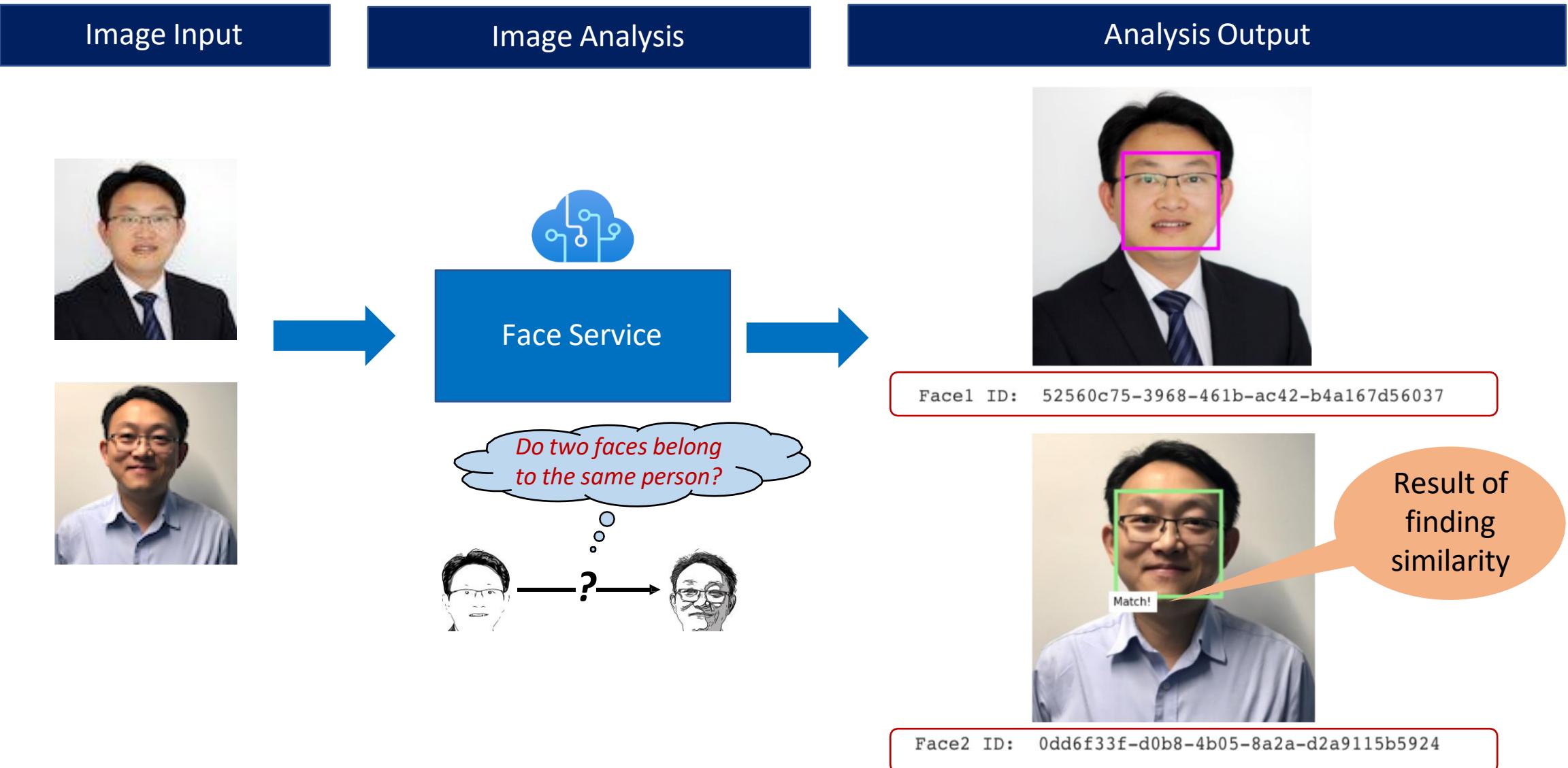


Grouping

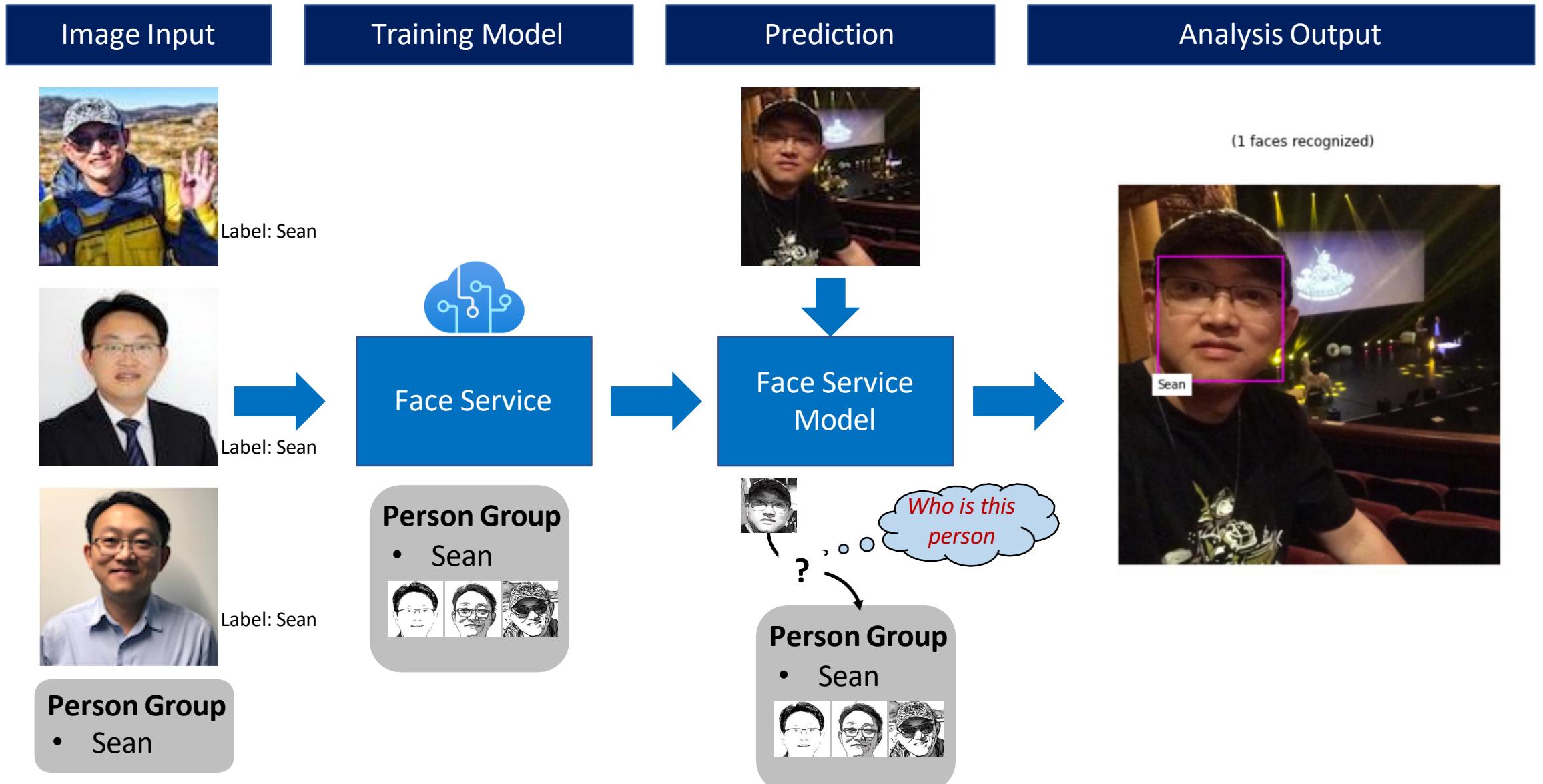
- Divide faces into groups



Face Service – Face Recognition – Verification



Face Service – Face Recognition – Identification



Face Service – Face Detection - Image Criteria and Performance

- **Image Criteria**
 - Image type: [JPEG, PNG, GIF, BMP](#)
 - File size: [6 MB or less](#)
 - Face size: [36 x 36 to 1920 x 1080 pixels](#)
 - Maximum detectable face size: [4096 x 4096 pixels](#)
- **Limitation - faces might not be detected**
 - Face size between 1920 x 1080 pixels to 4096 x 4096 pixels
 - [Extreme face angles](#) (head pose) – **Best results: Frontal and near-frontal faces**
 - [Face occlusion](#) (objects such as sunglasses that block part of the face)
- **Performance Improvement**
 - **Smoothing** – [turn smoothing feature off](#) as it creates a blur between frames
 - **Shutter Speed** – recommend shutter speeds: [1/60 second or faster](#) to create clearer video frames
 - **Shutter Angle** – a [lower shutter angle](#) will create a clearer video frame

Hands-on Lab

Analyzing Face

with

Azure Face Service



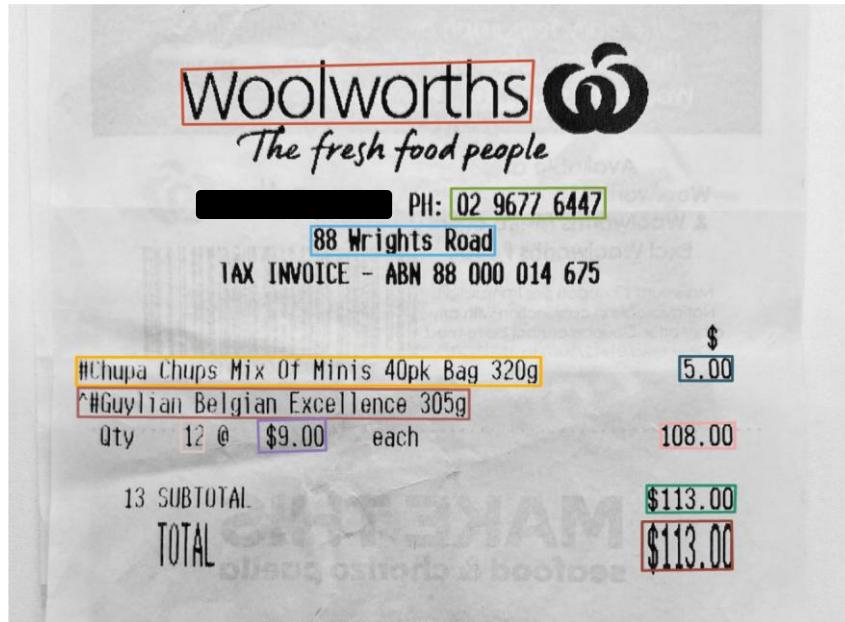
Form Recognizer Service



Form Recognizer Service – Introduction

- **Features**
 - Identifying key/value pairs
 - Extracting text
 - Processing tables of data
 - Identifying specific types of fields
 - Receipts
 - Invoices
 - Business cards
 - Layout extraction
 - Identity Document (ID)
- **Models**
 - Pre-built Model
 - Custom Model
 - Tailored to identify specific forms
 - Known key/value pairs
 - Known table data

Form Recognizer Service – Prebuilt Model – Receipt



Customer scenarios

- Business expense reporting
- Auditing and accounting
- Consumer behavior

Page # / Field name / Value	Confidence
1 MerchantName	99.00%
Woolworths	
1 MerchantPhoneNumber	99.50%
02 9677 6447	
1 MerchantAddress	99.00%
88 Wrights Road	
1 Items 1: Name	97.70%
#Chupa Chups Mix Of Minis 40pk Bag 320g	
1 Items 1: TotalPrice	98.60%
text: 5.00	
valueNumber: 5	
1 Items 2: Name	97.70%
^#Guylian Belgian Excellence 305g	
1 Items 2: Quantity	96.30%
12	
1 Items 2: Price	98.90%
text: \$9.00	
valueNumber: 9	
1 Items 2: TotalPrice	98.60%
text: 108.00	
valueNumber: 108	
1 Subtotal	98.90%
text: \$113.00	
valueNumber: 113	
1 Total	99.00%
text: \$113,00	
valueNumber: 11300	

Receipt Type

- Restaurants, gas stations, retail, grocery store, etc.

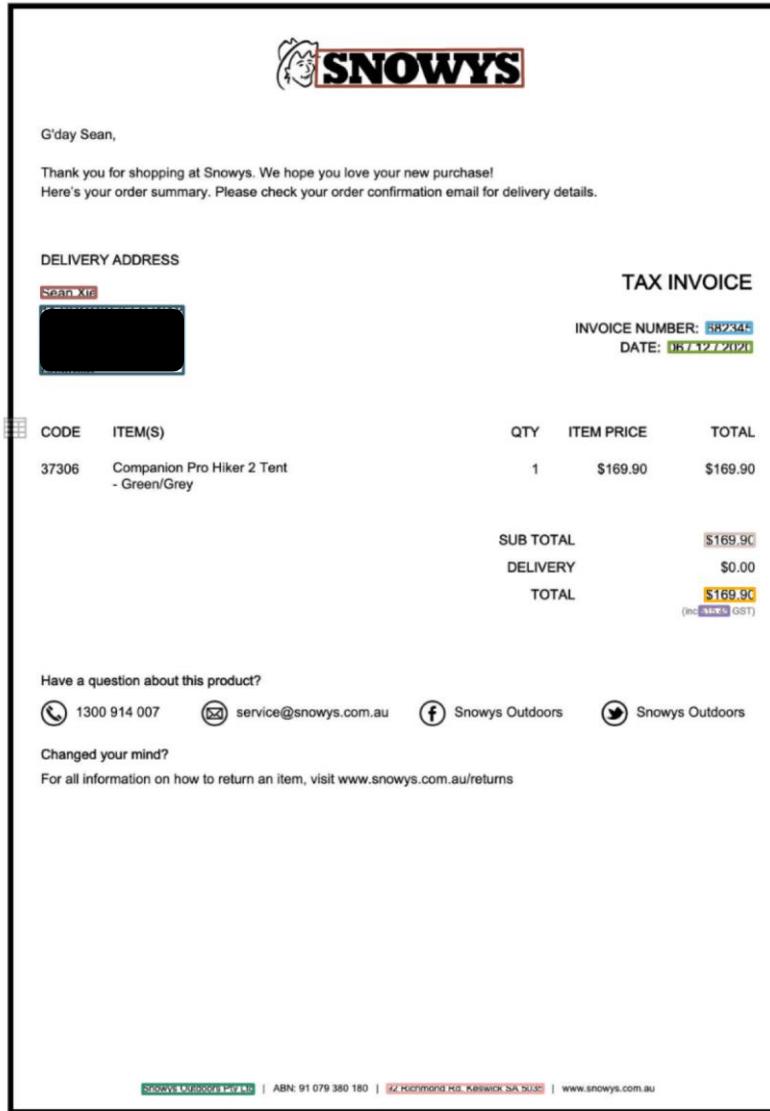
key information

- Time and date of the transaction, merchant information, amounts of taxes, line items, transaction totals, etc.
- *15 receipt fields*
- Confidence value
- Bounding box
- OCR raw text
- All text on the receipt

Supported Locales

- Australia (EN-AU), Canada (EN-CA), Great Britain (EN-GB), India (EN-IN), and United States (EN-US)

Form Recognizer Service – Prebuilt Model – Invoice



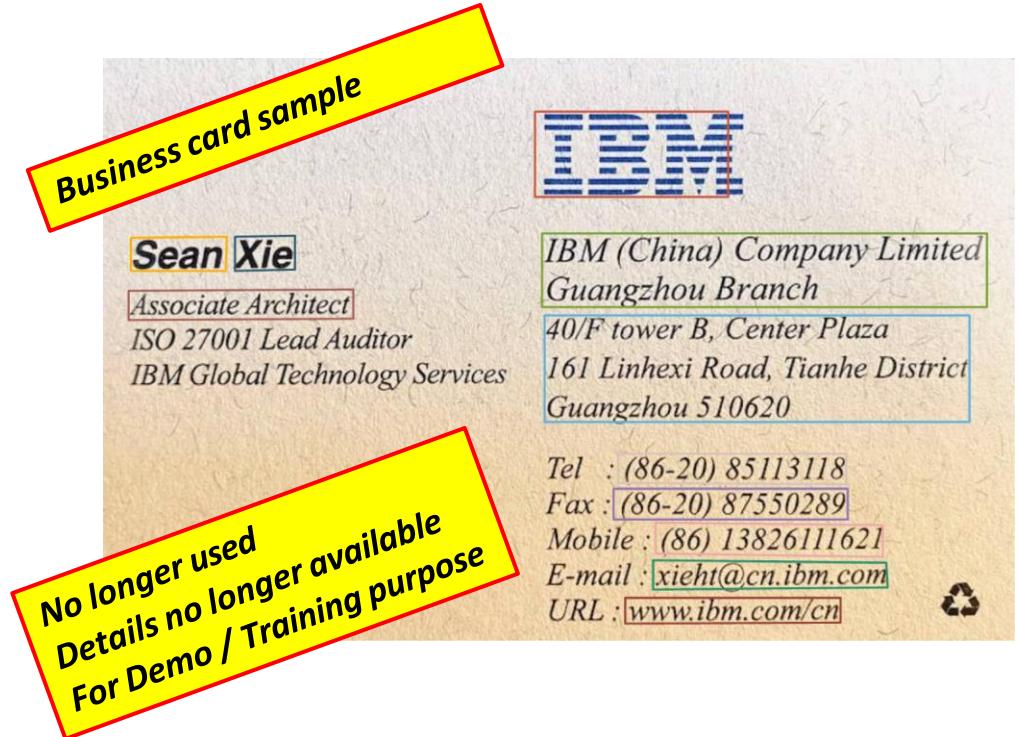
Page # / Field name / Value	Confidence
1 CustomerName	96.20%
Sean Xie	
1 InvoiceDate	99.50%
text: 06 / 12 / 2020	
valueDate: 2020-06-12	
1 InvoiceId	100.00%
682345	
1 InvoiceTotal	98.40%
text: \$169.90	
valueNumber: 169.9	
1 ShippingAddress	94.80%
1 ShippingAddressRecipient	96.20%
Sean Xie	
1 SubTotal	99.70%
text: \$169.90	
valueNumber: 169.9	
1 TotalTax	58.20%
text: \$15.45	
valueNumber: 15.45	
1 VendorAddress	56.90%
92 Richmond Rd, Keswick SA 5035	
1 VendorAddressRecipient	60.30%
Snowys Outdoors Pty Ltd	
1 VendorName	99.90%
SNOWYS	

Extract text, key/value pairs, and table data

key information

- customer, vendor, invoice ID, invoice due date, total, invoice amount due, tax amount, ship to, bill to, etc.
- 26 invoice fields*
- Confidence value
- OCR raw text
- Bounding box
- All text on the invoice

Form Recognizer Service – Prebuilt Model – Business Card



Page # / Field name / Value	Confidence
1 CompanyNames 1	21.60%
IBM	
1 CompanyNames 2	58.00%
IBM (China) Company Limited Guangzhou Branch	
1 Addresses	97.80%
40/F tower B, Center Plaza 161 Linhexi Road, Tianhe District Guangzhou 510620	
1 ContactNames: FirstNa...	Nan%
Sean	
1 ContactNames: LastNa...	Nan%
Xie	
1 JobTitles	99.00%
Associate Architect	
1 OtherPhones	99.00%
(86-20) 85113118	
1 Faxes	99.00%
(86-20) 87550289	
1 MobilePhones	99.00%
(86) 13826111621	
1 Emails	99.00%
xieht@cn.ibm.com	
1 Websites	98.90%
www.ibm.com/cn	

key information

- Personal contact info, company name, department, job title, email, mobile, phone numbers, address, website, etc.
- 13 fields
- Confidence value
- OCR raw text
- Bounding box
- All text on the invoice

Form Recognizer Service – Prebuilt Model – Layout

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Contract for the sale and purchase of land 2019 edition

TERM	MEANING OF TERM	NSW DAN:		
vendor's agent	Without the intervention of an agent	Ph: Ref:		
co-agent				
vendor				
vendor's solicitor				
date for completion land/address, plan details and title reference)				
improvements	<input checked="" type="checkbox"/> VACANT POSSESSION <input type="checkbox"/> subject to existing tenancies <input type="checkbox"/> house <input type="checkbox"/> garage <input type="checkbox"/> carport <input type="checkbox"/> home unit <input type="checkbox"/> carspace <input type="checkbox"/> storage space <input checked="" type="checkbox"/> NONE <input type="checkbox"/> other:			
attached copies	See Schedule 1			
<p>A real estate agent is permitted by legislation to fill up the items in this box in a sale of residential property.</p> <table border="1"> <tr> <td>Inclusions</td> <td> <input type="checkbox"/> blinds <input type="checkbox"/> dishwasher <input type="checkbox"/> light fittings <input type="checkbox"/> stove <input type="checkbox"/> built-in wardrobes <input type="checkbox"/> fixed floor coverings <input type="checkbox"/> range hood <input type="checkbox"/> pool equipment <input type="checkbox"/> clothes line <input type="checkbox"/> insect screens <input type="checkbox"/> solar panels <input type="checkbox"/> TV antenna <input type="checkbox"/> curtains <input type="checkbox"/> other: </td> </tr> </table>			Inclusions	<input type="checkbox"/> blinds <input type="checkbox"/> dishwasher <input type="checkbox"/> light fittings <input type="checkbox"/> stove <input type="checkbox"/> built-in wardrobes <input type="checkbox"/> fixed floor coverings <input type="checkbox"/> range hood <input type="checkbox"/> pool equipment <input type="checkbox"/> clothes line <input type="checkbox"/> insect screens <input type="checkbox"/> solar panels <input type="checkbox"/> TV antenna <input type="checkbox"/> curtains <input type="checkbox"/> other:
Inclusions	<input type="checkbox"/> blinds <input type="checkbox"/> dishwasher <input type="checkbox"/> light fittings <input type="checkbox"/> stove <input type="checkbox"/> built-in wardrobes <input type="checkbox"/> fixed floor coverings <input type="checkbox"/> range hood <input type="checkbox"/> pool equipment <input type="checkbox"/> clothes line <input type="checkbox"/> insect screens <input type="checkbox"/> solar panels <input type="checkbox"/> TV antenna <input type="checkbox"/> curtains <input type="checkbox"/> other:			
exclusions				
purchaser				
purchaser's solicitor	Ph: Fax: Ref:	Email:		
price	\$.00	(10% of the price, unless otherwise stated)		
deposit	\$.00			
balance	\$.00			
contract date	(if not stated, the date this contract was made)			
buyer's agent				
vendor				
GST AMOUNT (optional) The price includes GST.		witness		
purchaser	<input type="checkbox"/> JOINT TENANTS <input type="checkbox"/> tenants in common <input type="checkbox"/> in unequal shares			
BREACH OF COPYRIGHT MAY RESULT IN LEGAL ACTION				

Tables Structures		Selection Marks	
<pre> status: "succeeded" createdDateTime: "2021-02-25T23:50:18Z" lastUpdatedDateTime: "2021-02-25T23:50:23Z" analyzeResult: version: "2.1.0" readResults: 0: page: 1 angle: 0 width: 1190 height: 1683 unit: "pixel" lines: 0: boundingBox: [...] text: "@ 2018 The Law Society of New South Wales ACN 000 000 696 and The Real Estate Institute of New South Wales ACN 000 012 457 You can prepare your own version of pages 1 and 2 of this contract. Except as permitted under the Copyright Act 1968 (Cth) or consented to by the copyright owners (including by way of guidelines issued from time to time) no other part of this contract may be reproduced without the specific written permission of The Law Society of New South Wales and The Real Estate Institute of New South Wales." appearance: {...} words: [...] 1: boundingBox: [...] text: "owners (including by way of guidelines issued from time to time) no other part of this contract may be reproduced without the specific written permission of The Law Society of New South Wales and The Real Estate Institute of New South Wales." appearance: {...} words: [...] 2: boundingBox: [...] text: "The Law Society of New South Wales and The Real Estate Institute of New South Wales ACN 000 012 457" appearance: {...} words: [...] 3: boundingBox: [...] text: "Contract for the sale and purchase of land 2019 edition" appearance: {...} words: [...] 4: boundingBox: [...] text: "TERM" appearance: {...} words: [...] selectionMarks: 0: boundingBox: [...] text: "X VACANT POSSESSION" confidence: 0.995 state: "selected" 1: boundingBox: [...] text: "subject to existing tenancies" confidence: 0.999 state: "unselected" 2: boundingBox: [...] text: "house" confidence: 0.999 state: "unselected" 3: boundingBox: [...] text: "garage" confidence: 0.998 state: "unselected" 4: boundingBox: [...] text: "carport" confidence: 0.999 state: "unselected" 5: boundingBox: [...] text: "home unit" confidence: 0.999 state: "unselected" 6: boundingBox: [...] text: "carspace" confidence: 0.999 state: "unselected" 7: boundingBox: [...] text: "storage space" confidence: 0.997 state: "selected" 8: boundingBox: [...] text: "X NONE] other:" confidence: 0.997 state: "unselected" 1: boundingBox: [...] text: "X VACANT POSSESSION" confidence: 0.995 state: "selected" 2: boundingBox: [...] text: "subject to existing tenancies" confidence: 0.999 state: "unselected" 3: boundingBox: [...] text: "house" confidence: 0.999 state: "unselected" 4: boundingBox: [...] text: "garage" confidence: 0.998 state: "unselected" 5: boundingBox: [...] text: "carport" confidence: 0.999 state: "unselected" 6: boundingBox: [...] text: "home unit" confidence: 0.999 state: "unselected" 7: boundingBox: [...] text: "carspace" confidence: 0.999 state: "unselected" 8: boundingBox: [...] text: "storage space" confidence: 0.997 state: "selected" 9: boundingBox: [...] text: "X NONE] other:" confidence: 0.997 state: "unselected" </pre>		<pre> 19: boundingBox: [...] text: "X VACANT POSSESSION" appearance: {...} words: [...] 20: boundingBox: [...] text: "subject to existing tenancies" appearance: {...} words: [...] 21: boundingBox: [...] text: "house" appearance: {...} words: [...] 22: boundingBox: [...] text: "garage" appearance: {...} words: [...] 23: boundingBox: [...] text: "carport" appearance: {...} words: [...] 24: boundingBox: [...] text: "home unit" appearance: {...} words: [...] 25: boundingBox: [...] text: "carspace" appearance: {...} words: [...] 26: boundingBox: [...] text: "storage space" appearance: {...} words: [...] 27: boundingBox: [...] text: "X NONE] other:" appearance: {...} words: [...] 28: boundingBox: [...] text: "X NONE] other:" appearance: {...} words: [...] </pre>	

Form Recognizer Service – Image Criteria & Sample Tool

- **Image Criteria**

- Image type: [JPEG, PNG, PDF, and TIFF](#)
- File size: [< 50 MB](#)
- Face size: [50 x 50 to 10000 x 10000 pixels](#)
- PDF and TIFF documents:
 - For the free tier, only the first 2 pages are processed.
 - For the paid tier, up to 2,000 pages are processed.
- PDF File Dimensions: [< 17 x 17 inches \(A3\)](#)
- Text: [English](#)

Hands-on Lab

Analyzing Receipt

with

Azure Form Recognizer Service



Computer Vision Summary



Computer Vision Summary

