

Let the Cognitive Services help you to find your favourite cocktail

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Who am I?

Independent BI Consultant

> 15 years experience of SQL Server

Focus on Microsoft BI Stack & Azure

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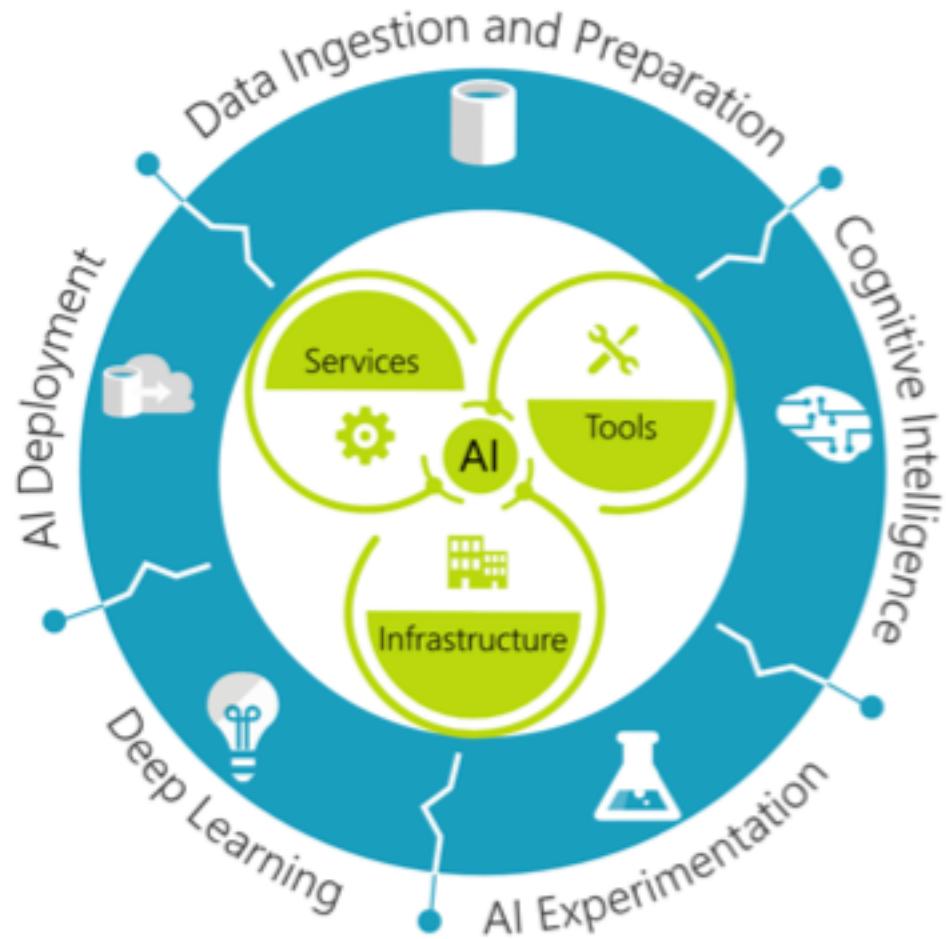


Next 60 Minutes

- Cognitive Services
- Face
- Emotion
- Computer Vision
- Text Analytics
- Recommendation
- Q&A Bots
- Favorite cocktail demo
- What's next?

Microsoft AI platform

Use a comprehensive set of flexible AI services for any scenario, and enterprise-grade AI infrastructure that runs AI workloads anywhere at scale. Modern AI tools designed for developers and data scientists help you create AI solutions easily, and with maximum productivity.



AI Service

Accelerate the development of AI solutions with high-level services. Use your preferred approach adapted to your targeted scenario, and achieve maximum productivity and reliability.



Cognitive Services

Use AI to solve business problems. Infuse your apps, websites, and bots with intelligent algorithms to see, hear, speak, and understand natural methods of communication.



Machine Learning Services

Model AI algorithms and experiment with ease. Customize based on your requirements.



Azure Bot Service

Accelerate development for conversational AI. Integrate seamlessly with Cortana, Office 365, Slack, Facebook Messenger, and more.

AI Infrastructure

AI compute

Flexible compute services from virtually limitless scale to the edge.



Apache Spark for Azure HDInsight

Take advantage of Apache Spark in the cloud for mission critical deployments.



Batch AI training

Experience unlimited, elastic scale-out deep learning. Run large-scale, massively parallel GPU-enabled AI development.

AI on data

AI-enable your data platform



Data Lake Store

Run data transformations and AI on petabyte-scale.



Azure Cosmos DB

Integrate AI with a globally distributed, multi-model database service.



Data Science Virtual Machines

Use a friction-free data science environment that contains popular tools for data exploration, modeling, and development activities.



Azure Container Service (AKS)

Scale and orchestrate containers using Kubernetes, DC/OS, or Docker Swarm.



SQL Database

Use R, Python, and native machine learning in an industry-leading SQL DB.

AI Tools



Machine Learning Studio

Easily build, deploy, and manage predictive analytics solutions



Visual Studio Code Tools for AI

Build, debug, test, and deploy AI with Visual Studio Code on Windows and Mac.



Other popular open source tools

Support for Jupyter Notebooks, PyCharm, and more.



Azure Machine Learning Workbench

Visual AI-powered data wrangling, experimentation, and lifecycle management.



Azure Notebooks

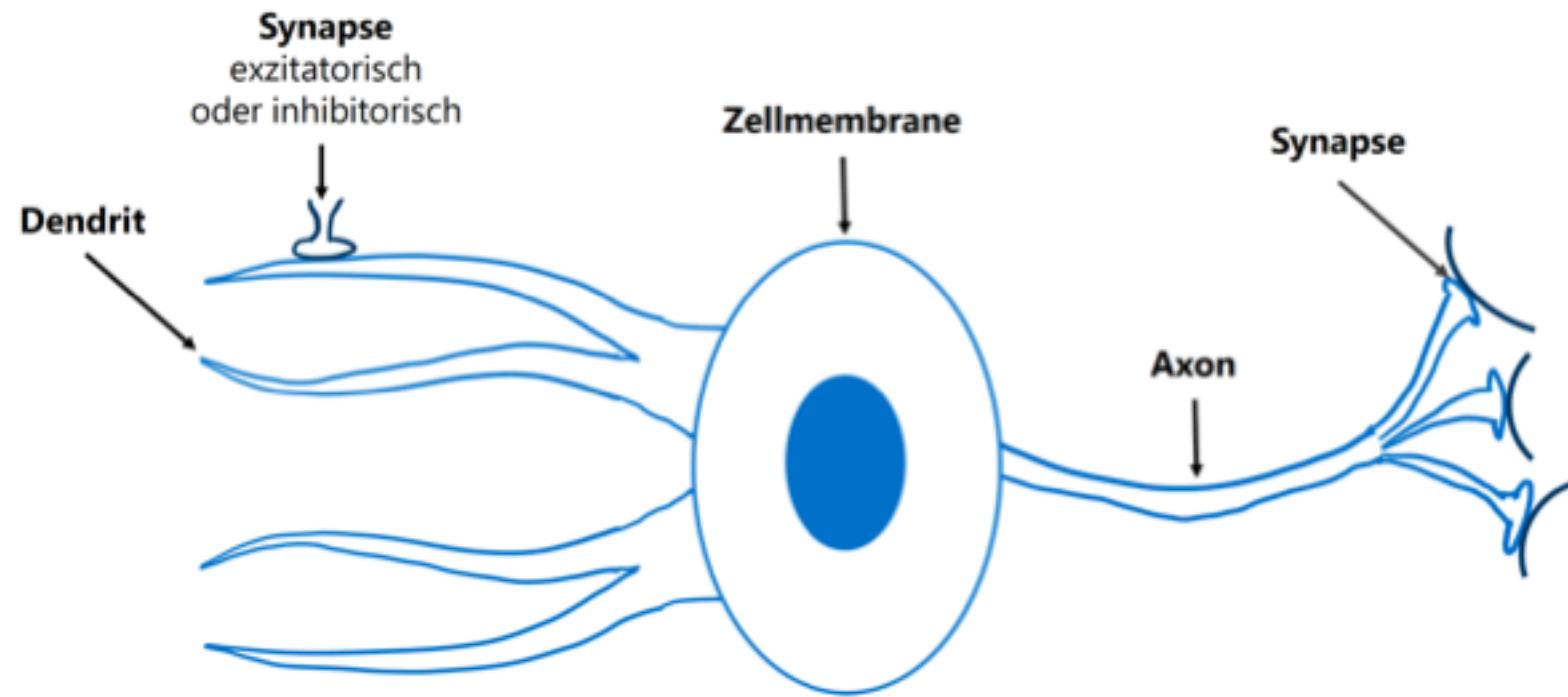
Organize your datasets and Jupyter Notebooks in a centralized library for data science and analysis.



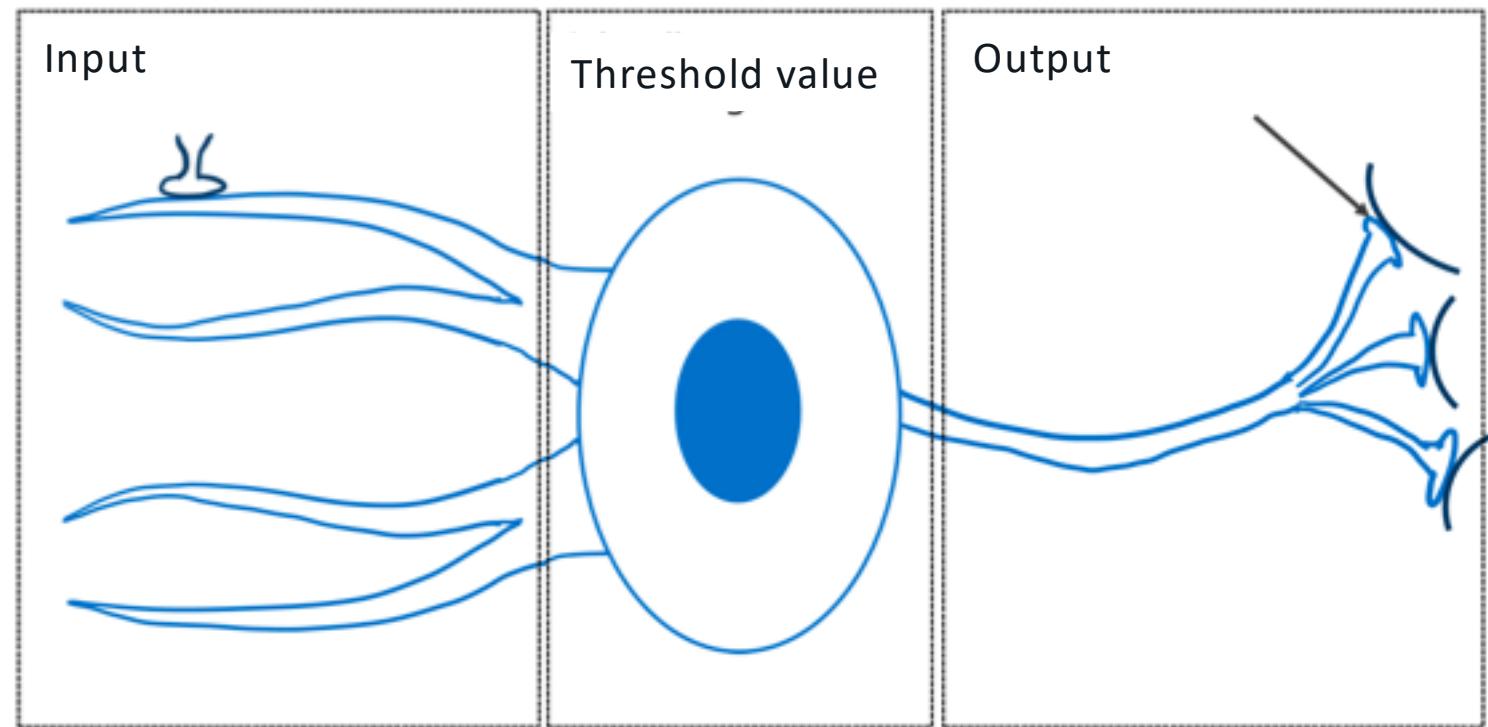
AI Toolkit for Azure IoT Edge

Deploy deep learning models and AI to run locally on IoT devices through pre-built models.

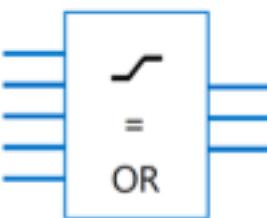
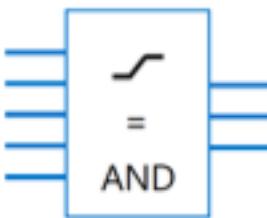
Microsoft Cognitive Services



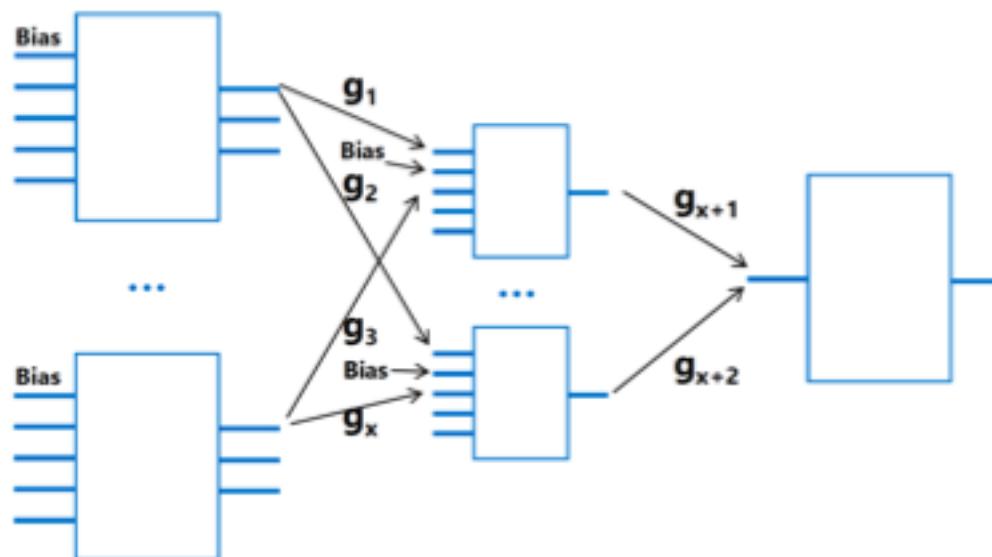
Microsoft Cognitive Services



Microsoft Cognitive Services



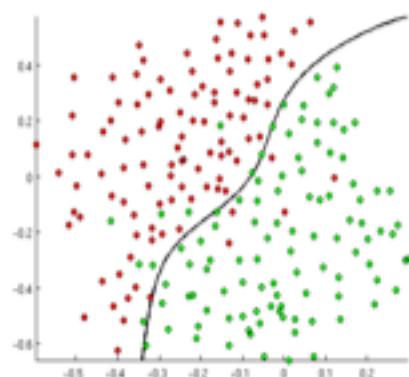
Single Layer



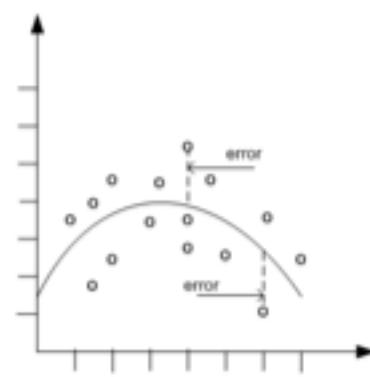
Multi-Layer

Microsoft Cognitive Services

Klassifizierung



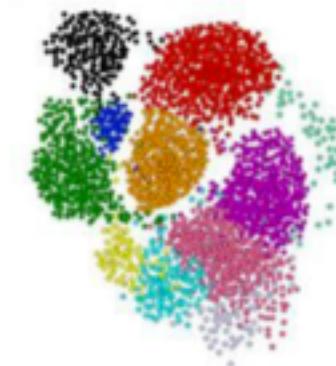
Regression



Assoziation
& Matchbox

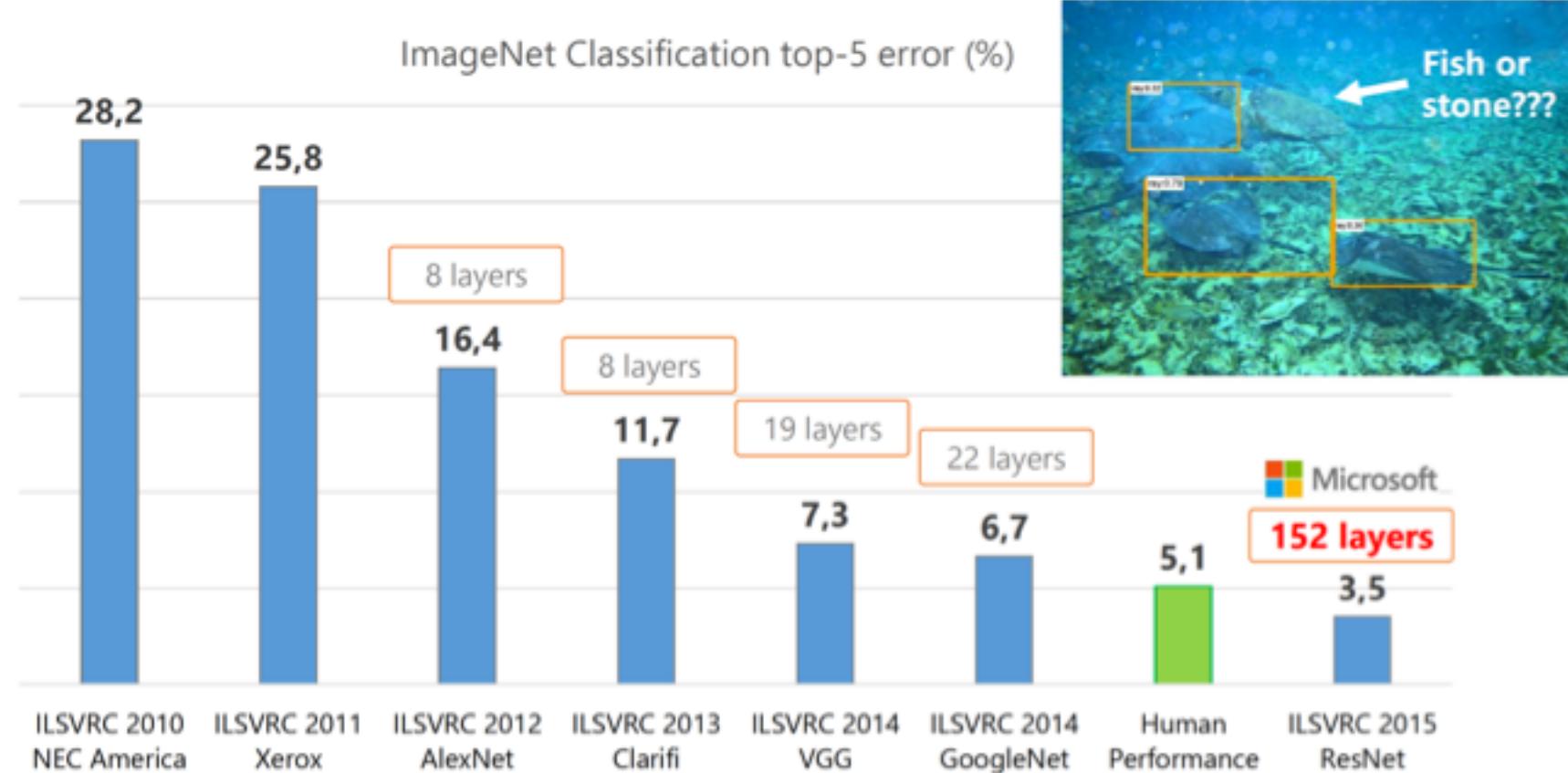


Clustering



Microsoft Cognitive Services

ImageNet Large Scale Visual Recognition Challenge (ILSVRC)



Microsoft Cognitive Services

CPU

A central processing unit (CPU) is the electronic circuitry within a computer that carries out the instructions of a computer program by performing the basic arithmetic, logical, control and input/output (I/O) operations specified by the instructions.

GPU

A graphics processing unit (GPU), occasionally called visual processing unit (VPU), is a specialized electronic circuit designed to rapidly manipulate and alter memory to accelerate the creation of images in a frame buffer intended for output to a display device.

FPGA

A field-programmable gate array (FPGA) is an integrated circuit designed to be configured by a customer or a designer after manufacturing – hence "field-programmable".

Internal Microsoft Azure

Microsoft Translator V1.00.23400.11102

Data Source: War and Peace

Translate to: English

Author: Leo Tolstoy

Language: Russian

Pages: 1,440

Novel by Russian author Tolstoy, originally titled Война и мир, considered one of finest literary achievements and a central work in world literature.

Azure Standard Server – 24-53N-1U

Type: 24-core 2.4 GHz Haswell

Model: 24-53245-NKD 1U

Peak Power/Unit: 300 Watts

Compute Capacity: 1.8 Tera-ops

Time Elapsed: 00:19.9

Pages Translated: 1440

Pages Per Second: 73

TRANSLATE

Azure FPGA Server – SV4-D5-1U

Type: 10 CPU cores + 4 FPGAs

Model: Stratix V D5-accelerator

Peak Power/Unit: 240 Watts

Compute Capacity: 7.9 Tera-ops

Time Elapsed: 00:02.6

Pages Translated: 1440

Pages Per Second: 558

TRANSLATE

Microsoft Cognitive Services

Give your apps a human side



Microsoft Cognitive Services (formerly **Project Oxford**) are a set of APIs, SDKs and services available to developers to make their applications more intelligent, engaging and discoverable. Cognitive Services expands on Microsoft's evolving portfolio of **machine learning** APIs and enables developers to easily add intelligent features ...

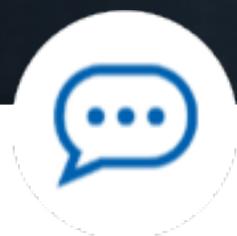
Microsoft Cognitive Services

Give your apps a human side



Vision

From faces to feelings, allow your apps to understand images and video



Speech

Hear and speak to your users by filtering noise, identifying speakers, & understanding intent



Language

Process text and learn how to recognize what users want



Knowledge

Tap into rich knowledge amassed from the web, academia, or your own data



Search

Access billions of web pages, images, videos, and news with the power of Bing APIs

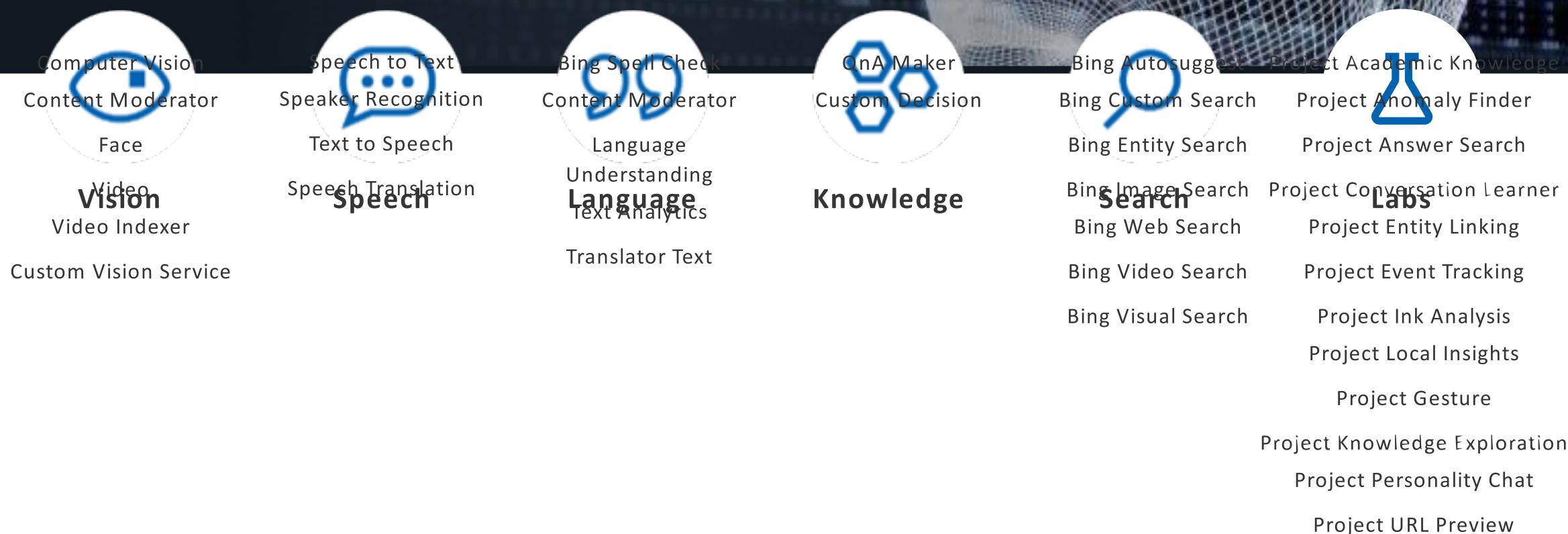


Labs

An early look at emerging Cognitive Services technologies: discover, try & give feedback on new technologies before general availability

Microsoft Cognitive Services

Give your apps a human side



Microsoft Cognitive Services

Give your apps a human side



Vision

Computer Vision

Content Moderator

Face

Video

Video Indexer



Speech

Speech to Text

Speaker Recognition

Text to Speech

Speech Translation



Language

Bing Spell Check

Content Moderator

Language Understanding

Text Analytics

Translator Text



Knowledge

QnA Maker

Custom Decision



Search

Bing Autosuggest

Bing Custom Search

Bing Entity Search

Bing Image Search

Bing Web Search

Bing Video Search

Bing Visual Search



Labs

Project Academic Knowledge

Project Anomaly Finder

Project Answer Search

Project Conversation Learner

Project Entity Linking

Project Event Tracking

Project Ink Analysis

Project Local Insights

Project Gesture

CUSTOMIZATION

Custom Vision Service

Custom Speech Service

Language Understanding

Custom Decision Service

Bing Custom Search

Project Knowledge Evolution

Why Microsoft Cognitive Services?



Easy

Roll your own with REST APIs

Simple to add: just a few lines of code required



Flexible

Integrate into the language and platform of your choice

Breadth of offerings helps you find the right API for your app

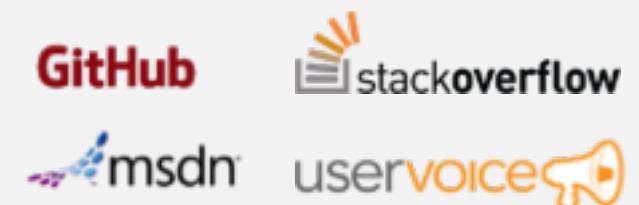
Bring your own data for your custom experience



Tested

Built by experts in their field from Microsoft Research, Bing, and Azure Machine Learning

Quality documentation, sample code, and community support



A variety of real-world applications

Vision	Speech	Language	Knowledge	Search
 What is in the image?	 Give me directions to the nearest local branch.	 Play today's customer call recording.	 Top publications in customer lifecycle trends?	 Search for 'fraud prevention'
Computer Vision 	Bing Speech 	Language Understanding Natural Language Processing Intent: PlayCall Content: Customer# DateTime.date: today  Now Playing 11/29/2016 Customer Call	Knowledge Exploration Here are the top results: Customer Relationship Management – 5 Key Trends for 2014 CRM Oct 28, 2015 – Here are FIVE key trends in 2014 that would help marketers in rolling ... Of late, marketers are looking at customer lifecycle management (CLM) Predictive Customer Lifecycle Management (CLM) The purpose of Customer Life-cycle Management (CLM) is to maximize both customer retention and Predictive trend analysis provides business visibility. Trends 2016: The Future of Customer Service Jan 5, 2016 – The top 10 customer service trends for 2016 that North American Consumer Language Around Customer Lifecycles in the Banking Industry View PDF	Bing News Search Here is what I found:  Information Communications Media Market News  It also investigates the top three expected Fraud Detection and Prevention programs, in terms of demand in key markets...  The Big Question: In-House or Outsourced Fraud Protection?  First, let's point out that there is not one absolute answer—there are "pros" and "cons" to each. Those who favor in-house...  How to Protect Your Business from Online Fraud this Holiday Season  Michael heads fraud prevention tool. Online and mobile shopping are expected to continue growing apace...



Vision



Computer Vision API

Distill actionable information from images



Face API

Detect, identify, analyze, organize, and tag faces in photos



Video Indexer

Process and extract smart insights from videos



Content Moderator

Machine-assisted moderation of text and images, augmented with human review tools



Custom Vision Service

Customizable web service that learns to recognize specific content in imagery

Computer Vision API

Analyze an image

Understand content within an image

OCR

Detect and recognize words within an image

Generate thumbnail

Scale and crop images, while retaining key content

Recognize celebrities

Thanks to domain specific models, ability to recognize 200K celebrities from business, politics, sports, and entertainment around the world



Analyze image



Type of image

Clip Art Type	0 Non-clipart
Line Drawing Type	0 Non-Line Drawing
Black & White Image	False

Content of image

Categories	[{"name": "people_swimming", "score": 0.099609375}]
Adult Content	False
Adult Score	0.18533889949321747
Faces	[{"age": 27, "gender": "Male", "faceRectangle": {"left": 472, "top": 258, "width": 199, "height": 199}}]

Image colors

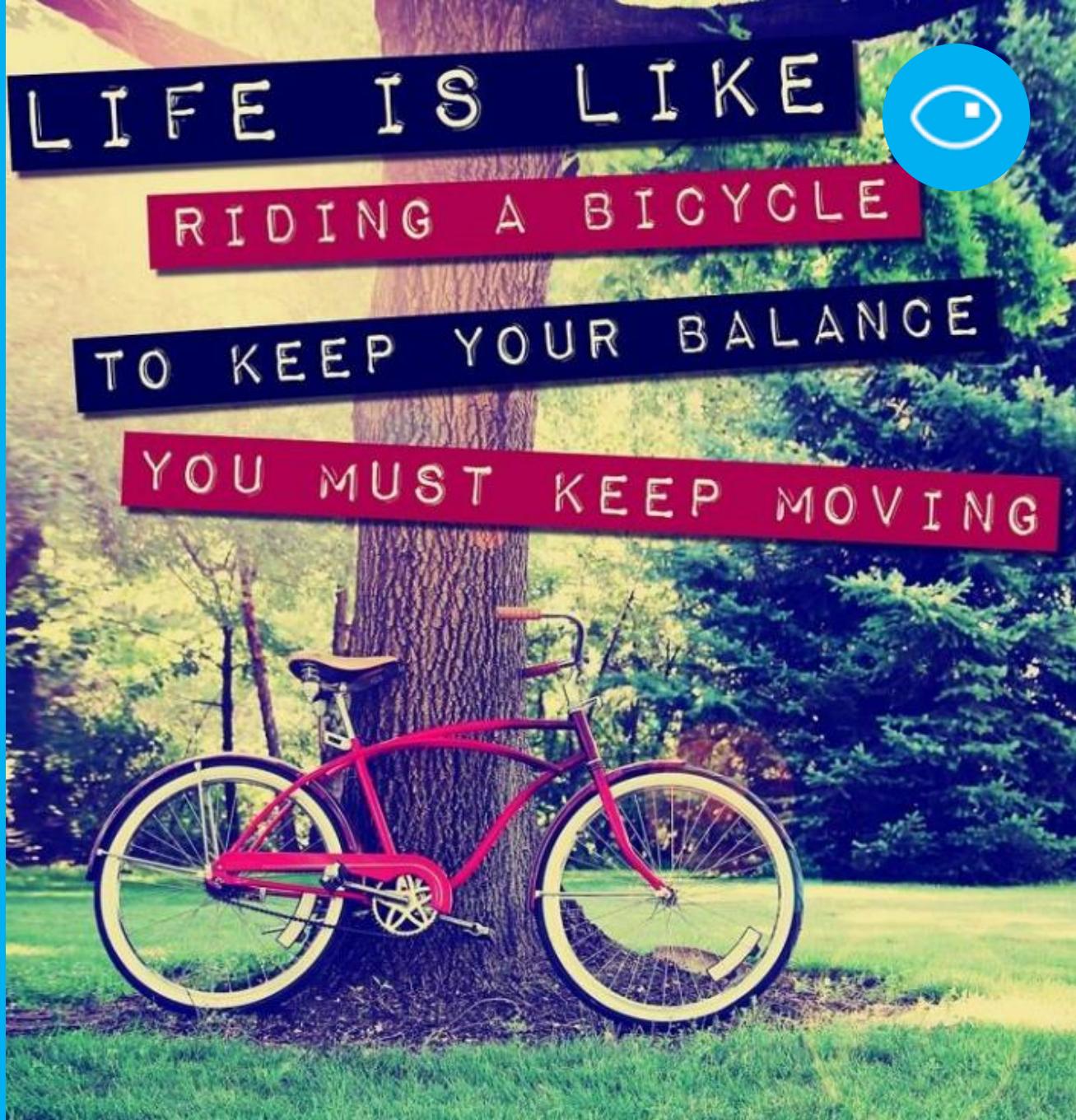
Dominant Color Background	White
Dominant Color Foreground	Grey
Dominant Colors	White
Accent Color	



OCR

JSON:

```
{  
  "language": "en",  
  "orientation": "Up",  
  "regions": [  
    {  
      "boundingBox": "41,77,918,440",  
      "lines": [  
        {  
          "boundingBox": "41,77,723,89",  
          "words": [  
            {  
              "boundingBox": "41,102,225,64",  
              "text": "LIFE"  
            },  
            {  
              "boundingBox": "356,89,94,62",  
              "text": "IS"  
            },  
            {  
              "boundingBox": "539,77,225,64",  
              "text": "LIKE"  
            }  
          ]  
        ]  
      ]  
    }  
  ]  
}
```



Face API

Face detection

Detect faces and their attributes within an image

Face verification

Check if two faces belong to the same person

Similar face searching

Find similar faces within a set of images

Face grouping

Organize many faces into groups

Face identification

Search which person a face belongs to





Face API

Detection

```
"faceRectangle": {"width": 193, "height": 193,  
"left": 326, "top": 204}
```

...

Feature attributes

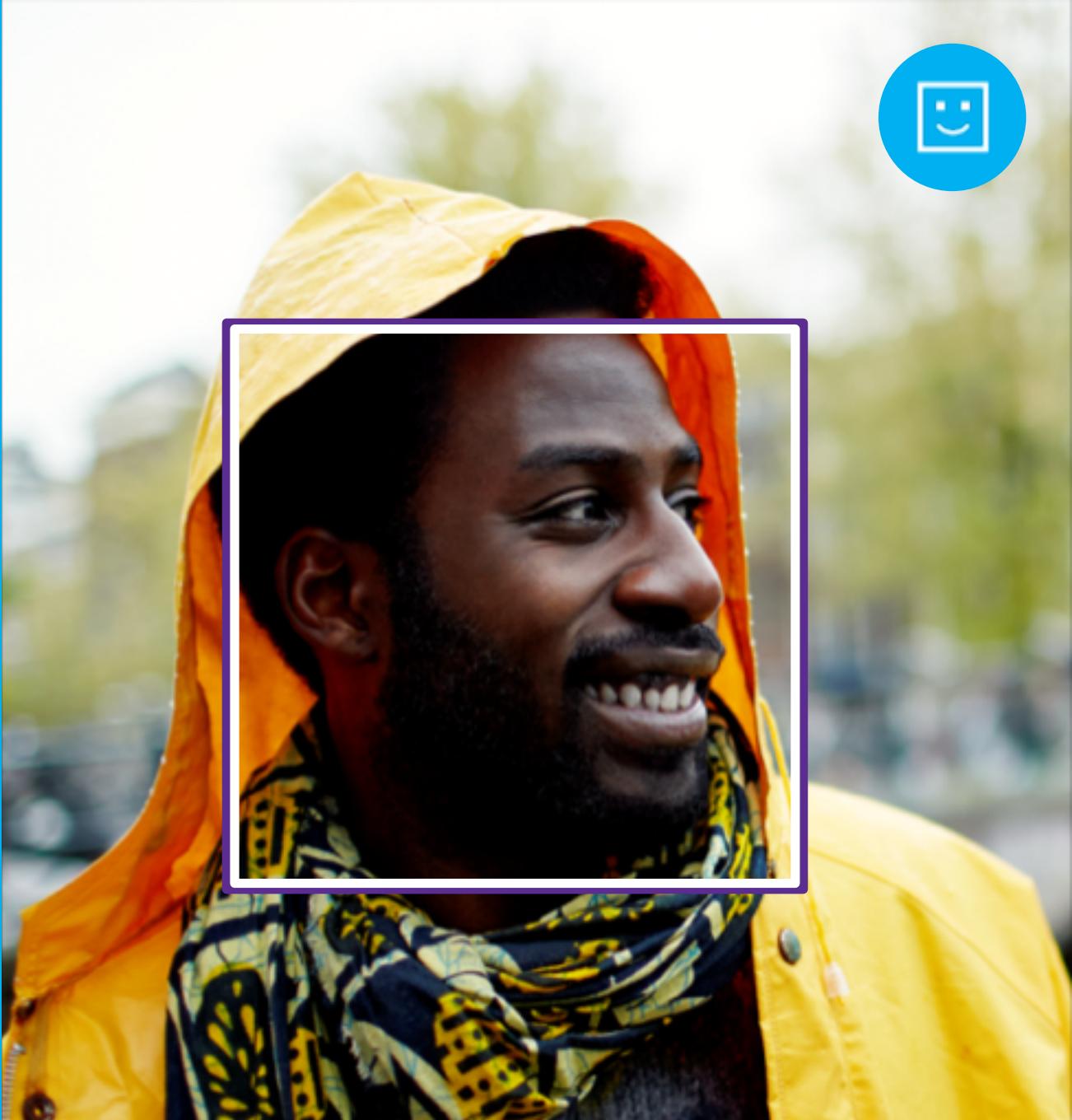
```
"attributes": { "age": 42, "gender": "male",  
"headPose": { "roll": "8.2", "yaw": "-37.8",  
"pitch": "0.0" }}
```

Grouping



Identification

Jasper Williams



Computer Vision Demo



Custom Vision Service

A customizable web service that learns to recognize specific content in imagery

Upload Images

Upload your own labeled images, or use Custom Vision Service to quickly tag any unlabeled images.

Train

Use your labeled images to teach Custom Vision Service the concepts you want it to learn.

Evaluate

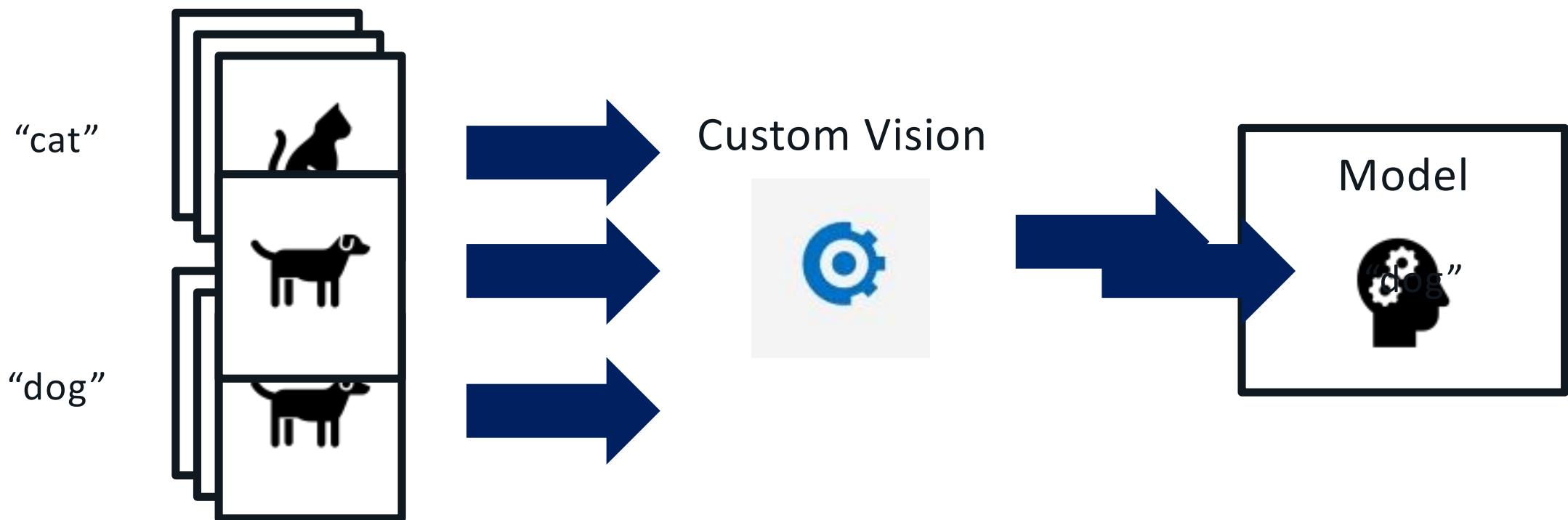
Use simple REST API calls to quickly tag images with your new custom computer vision model.

Active learning

Images evaluated through your custom vision model become part of a feedback loop you can use to keep improving your classifier.

What is it?

Custom Vision Service is an easy-to-use tool for prototyping, improving, and deploying a custom image classifier to a cloud service, without any background in computer vision or deep learning required.



Custom Vision Demo

Text Analytics



Sentiment analysis

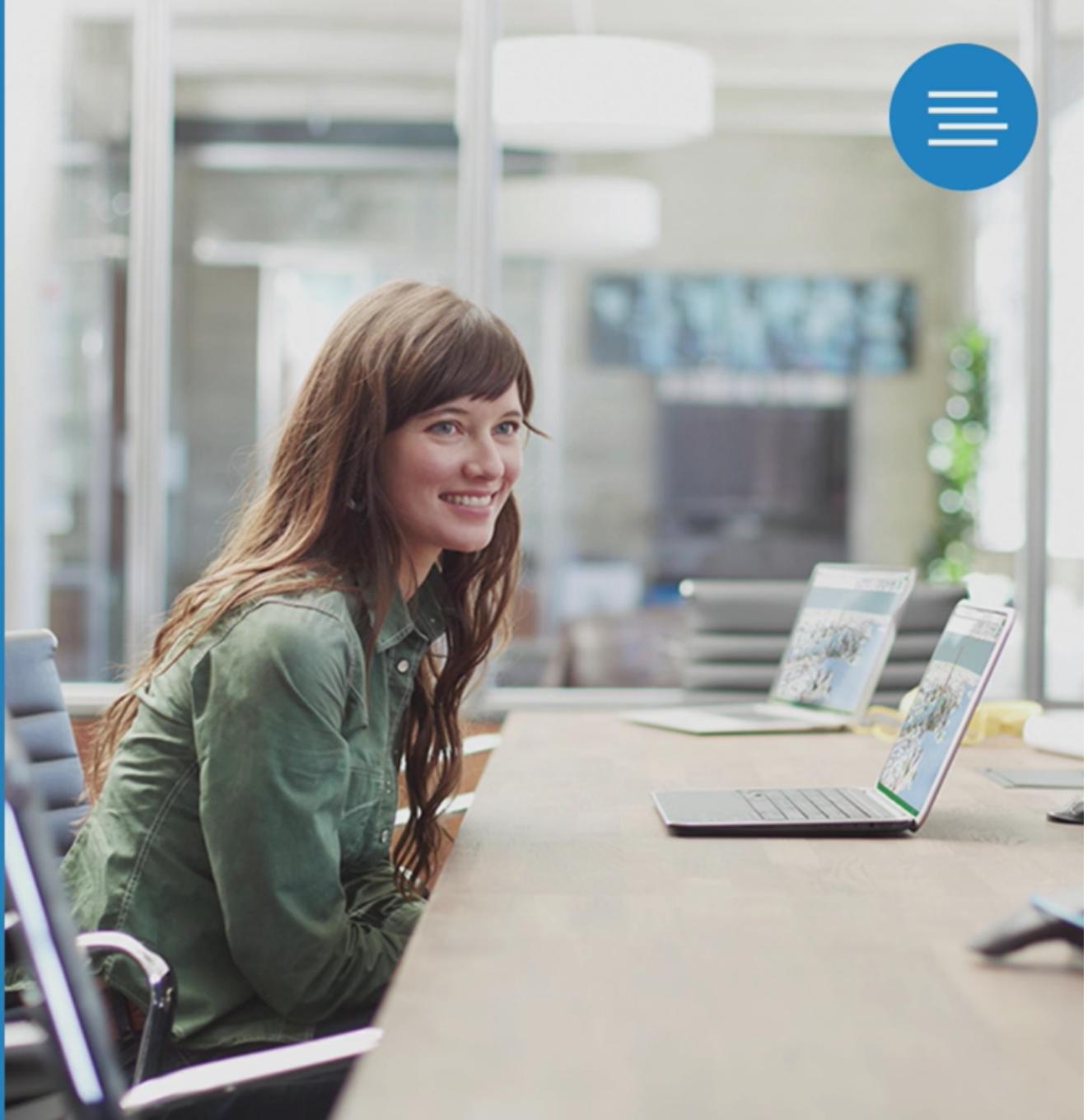
Understand if a record has positive or negative sentiment

Key phrase extraction

Extract key phrases from a piece of text, and retrieve topics

Language detection

Identify the language, 120 supported languages

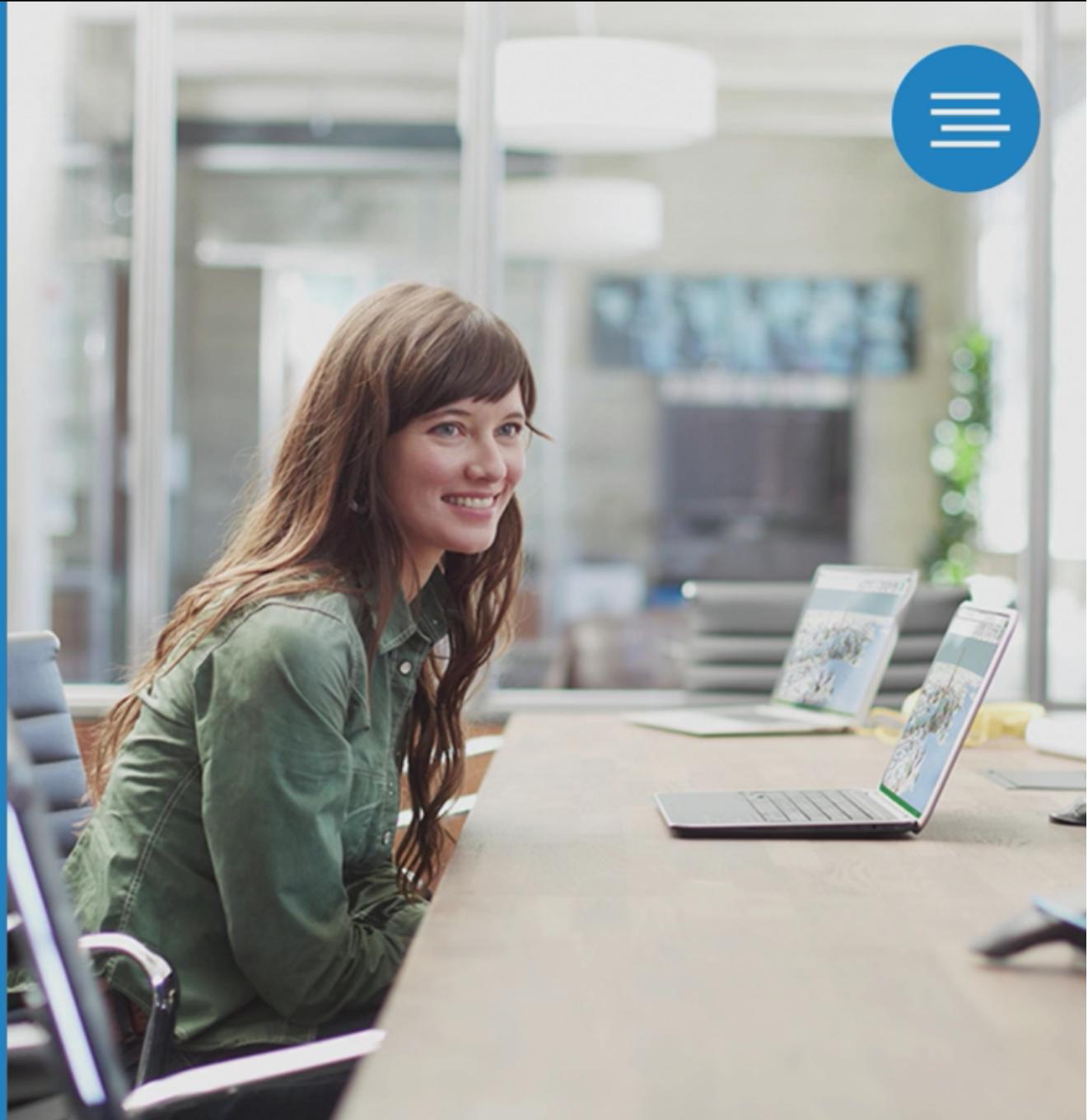


Text Analytics



Sentiment

The API returns a numeric score between 0 and 1. Scores close to 1 indicate positive sentiment and scores close to 0 indicate negative sentiment. Sentiment score is generated using classification techniques. The input features of the classifier include n-grams, features generated from part-of-speech tags, and word embeddings. English, French, Spanish and Portuguese text are supported.



Recommendation API



Recommendation systems

Predict or rank the ratings a user may give to a lot of items

Business goals of recommender systems

Increase product sales

Improve customer experience and satisfaction

Technical goals of recommender systems

Relevance – recommend items that are relevant to a user

Novelty – recommend items that a user has not seen before

Serendipity – recommend items that are surprising to a user

Diversity – recommend dissimilar items to a user



Recommendation API

S Parka GREENLAND von F

E. Breuninger GmbH & Co. [DE] | https://www.breuninger.com/fjaellraeven-parka-greenland/1000198753/detail.cmd

KOETTELOGER VERSEND & RÜCKVERSEND VERLÄNGERTER RÜCKGABEBERECHT HOCHWERTIGE GESCHENKVERPACKUNG

Newsletter Breuninger Card Häuser Click&Collect Hilfe

breuninger

Suchbegriff oder Web-Code Suchen

NEUHEITEN DAMEN HERREN KINDER SPORT BEAUTY LUXUS WEIHNAFTEN MARKEN SALE MAGAZIN

< zurück Startseite > Marken > FJÄLLRÄVEN (27)

FJÄLLRÄVEN Parka GREENLAND

Farbe: NAVY

Größe wählen:

M = 50 L = 52 XL = 54 XXL = 56

Produktdetails Material & Pflege

Material:

Materiel: 65% Polyester, 35% Baumwolle
Futter: 100% Polyester
Futter 2: 100% Polycotton
Füllung: 80% Daunen, 20% Federn
Enthalt nichttextile Teile tierischen Ursprungs.

Pfleghinweise:

Teilen

KUNDEN, DIE DIESEN ARTIKEL ANGesehen HABEN, GEFÄLLT AUCH

Marc O'Polo DENIM BOSS Orange SCOTCH & SODA PAUL

FJÄLLRÄVEN FJÄLLRÄVEN Schmuddelwedda

KUNDEN, DIE DIESEN ARTIKEL ANGesehen HABEN, KAUFEN SCHLIESSLICH

a. LEGO Simpsons 71006 -

https://www.amazon.de/LEGO-Simpsons-71006-Das-Haus/dp/B00HWWMTXA/ref=sr_1_3?ie=UTF8&qid=1481722695&sr=8-3&keywords=lego+simpsons

LEGO Simpsons 71006 - Das Simpsons Haus

Erstellen Sie Ihre [Wunschliste](#) und erhalten Sie automatisch die Chance, einen Lego-Aktionsgutschein zu gewinnen.

von Lego ★★★★★ 19 Kundenrezensionen

Preis: EUR 239,99 Alle Preisangaben inkl. USt

Nur noch 1 auf Lager Lieferung noch vor Weihnachten.

Lieferung 16.-20. Dez, wenn Sie Standardversand an der Kasse wählen. Siehe Details.
Verkauf und Versand durch gallohahn. Für weitere Informationen, Impressum, AGB und Widerrufsrecht klicken Sie bitte auf den Verkäufernamen.
35 neu ab EUR 238,99 1 gebraucht ab EUR 199,90

6 Minifiguren sind enthalten: Homer, Marge, Bart, Lisa, Maggie und Ned Flanders
- Ein großer Wohnbereich mit einer Küche, einem Essbereich, einem Schlafzimmer, einem Bad und einem Badezimmer. Tische, Stühle, Mixer, Tellern, Kuchenformen
- Wohnzimmer mit Fernseher, auf dem Itchy und Scratchy läuft. Couch, Boot-Gemälde, Telefon, Teppich, Klavier, Kinderbett und Treppe in den ersten Stock
- In Barts Zimmer stehen ein Bett, Nachtschrank, Schreibtisch mit Pinboard, ein Stuhl, ein Poster mit Krusty dem Clown, Skateboard, Regale mit Büchern
- Schlafzimmer von Marge und Homer mit großem Bett, 2 Nachttischen, Maggies Wege und Marges Tasche

Weitere Produktdetails

Kinderweihnachtswelt Lassen Sie sich bei Ihrer Geschenk-Suche von den angesagtesten Spielsachen 2016 inspirieren. Die Highlights für jedes Alter finden Sie hier.

Für größere Ansicht Maus über das Bild ziehen

Wird oft zusammen gekauft

Gesamtpreis EUR 244,78

Dieser Artikel werden von verschiedenen Verkäufern verkauft und versendet. Details anzeigen
Dieser Artikel: LEGO Simpsons 71006 - Das Simpsons Haus EUR 239,99
LEGO Minifiguren The Simpsons Serie 2 - 1 zu 1 Ähnliche Figur EUR 4,79

Kunden, die diesen Artikel gekauft haben, kauften auch

LEGO Simpsons 71016 - Villa E-Max LEGO Minifiguren The Simpsons Serie 2 - 1 LEGO 71005 Minifiguren United Labels - 0805390 - 21 Minifiguren LEGO Simpsons Serie 2 LEGO 40139 - Minifiguren LEGO Ideas 21302 - The Big Bang Theory LEGO 71009 Minifiguren LEGO Technic 42086 - Dumper

Recommendation Demo

QnA Maker

Creates an FAQ service from existing content

Extract questions and answers

Extract all possible pairs of questions and answers from user provided content – FAQ, URLs, documents and editorial content

Test, train and publish

Edit, remove or add pair before testing and training the knowledge base as an API endpoint

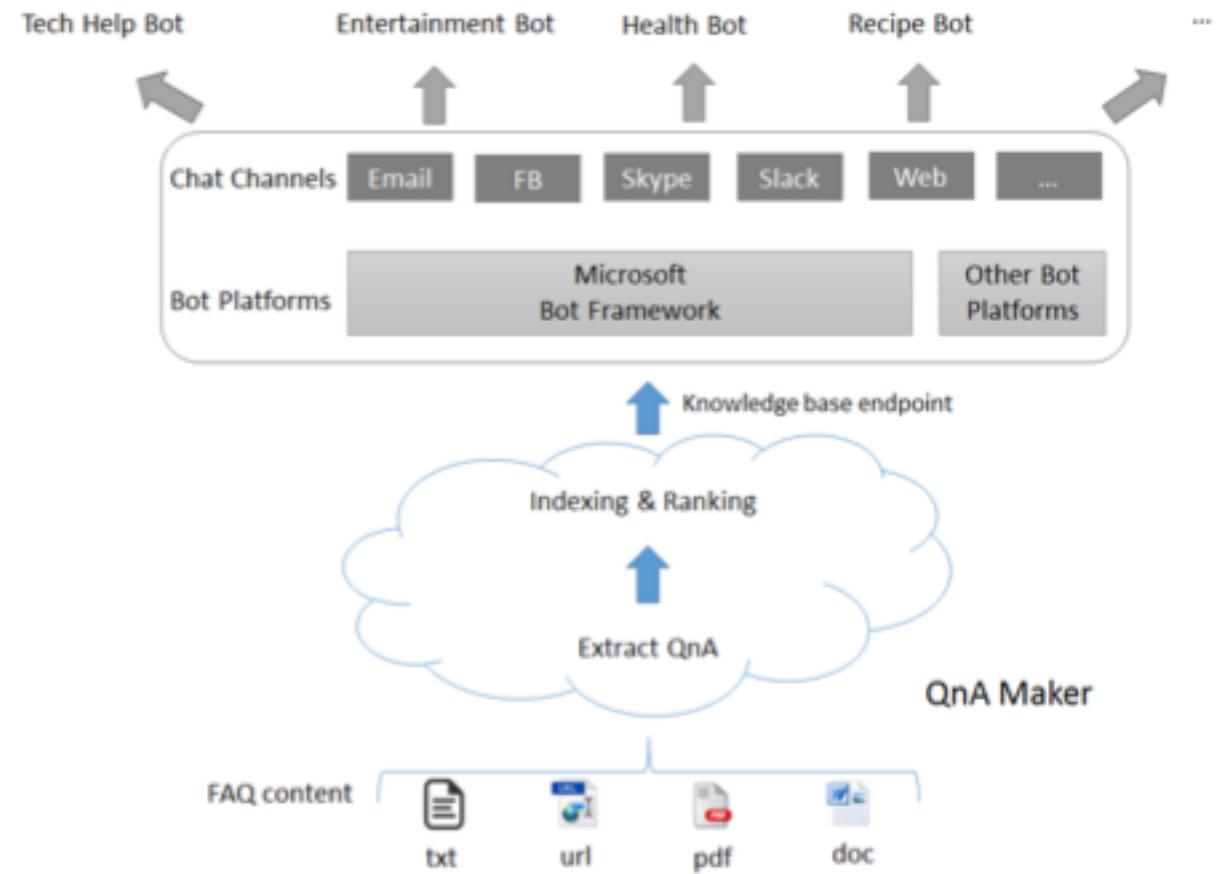
Integrates with other API's and solutions

Use QnA Maker with Cognitive Services such as LUIS & create something as elegantly simple as a chat bot that answers FAQs, or as complex as an interactive virtual guide



QnA Maker

QnA Maker is a free, easy-to-use, REST API and web-based service that trains AI to respond to user's questions in a more natural, conversational way. Compatible across development platforms, hosting services, and channels, QnA Maker is the only question and answer service with a graphical user interface—meaning you don't need to be a developer to train, manage, and use it for a wide range of solutions



QnA Maker Demo

Favorite cocktail demo



The idea

How can I use this pretty cool API's for myself?

The idea

Once upon a time, one evening I was sitting in a bar and I didn't know which cocktail to choose from the menu.

The idea

That's where the idea was born. Why not use the API's to generate a recommendation based on my emotions.

How to

What we need:

- Face API
- Emotion API
- Recommendation API

Face Attributes

```
"faceAttributes": {  
    "age": 71.0,  
    "gender": "male",  
    "smile": 0.88,  
    "facialHair": {  
        "moustache": 0.8,  
        "beard": 0.1,  
        "sideburns": 0.02  
    },  
    "glasses": "sunglasses",  
    "headPose": {  
        "roll": 2.1,  
        "yaw": 3,  
        "pitch": 0  
    },  
    "emotion":{  
        "anger": 0.575,  
        "contempt": 0,  
        "disgust": 0.006,  
        "fear": 0.008,  
        "happiness": 0.394,  
        "neutral": 0.013,  
        "sadness": 0,  
        "surprise": 0.004  
    },  
    "hair": {  
        "bald": 0.0,  
        "invisible": false,  
        "hairColor": [  
            {"color": "brown", "confidence": 1.0},  
            {"color": "blond", "confidence": 0.88},  
            {"color": "black", "confidence": 0.48},  
            {"color": "other", "confidence": 0.11},  
            {"color": "gray", "confidence": 0.07},  
            {"color": "red", "confidence": 0.03}  
        ],  
        "makeup": {  
            "eyeMakeup": true,  
            "lipMakeup": false  
        },  
        "occlusion": {  
            "foreheadOccluded": false,  
            "eyeOccluded": false,  
            "mouthOccluded": false  
        },  
        "accessories": [  
            {"type": "headWear", "confidence": 0.99},  
            {"type": "glasses", "confidence": 1.0},  
            {"type": "mask", "confidence": 0.87}  
        ],  
        "blur": {  
            "blurLevel": "Medium",  
            "value": 0.51  
        },  
        "exposure": {  
            "exposureLevel": "GoodExposure",  
            "value": 0.55  
        },  
        "noise": {  
            "noiseLevel": "Low",  
            "value": 0.12  
        }  
    }  
},  
{"type": "headWear", "confidence": 0.99},  
{"type": "glasses", "confidence": 1.0},  
{"type": "mask", "confidence": 0.87}  
],  
"blur": {  
    "blurLevel": "Medium",  
    "value": 0.51  
},  
"exposure": {  
    "exposureLevel": "GoodExposure",  
    "value": 0.55  
},  
"noise": {  
    "noiseLevel": "Low",  
    "value": 0.12  
}  
}
```

Recommendations catalog file

Name	Mandatory	Type	Description
Item Id	Yes	[A-z], [a-z], [0-9], [_] (Underscore), [-] (Dash) Max length: 50	Unique identifier of an item.
Item Name	Yes	Any alphanumeric characters Max length: 255	Item name.
Item Category	Yes	Any alphanumeric characters Max length: 255	Category to which this item belongs (e.g. Cooking Books, Drama...); can be empty.
Description	No, unless features are present (but can be empty)	Any alphanumeric characters Max length: 4000	Description of this item.
Features list	No	Any alphanumeric characters Max length: 4000	Comma-separated list of feature-name=feature-value that can be used to enhance model recommendation. Feature names max length: 255 Feature-value max length: 255 Feature values should be categorical.

The request body should contain a file containing one line per item that will be updated.

Example without features

```
AAA04294,Office Language Pack Online DwnLd,Office
AAA04303,Minecraft Download Game,Games
C9F00168,Kiruna Flip Cover,Accessories
```

Example with features

```
AAA04294,Office Language Pack Online DwnLd,Office,, softwaretype=productivity, compatibility=Windows
BAB04303,Minecraft DwnLd,Games,, softwaretype=gaming, compatibility=iOS, agegroup=all
C9F00168,Kiruna Flip Cover,Accessories,, compatibility=lumia, hardwaretype=mobile
```

Recommendations usage file

Name	Mandatory	Type	Description
User Id	Yes	[A-z], [a-z], [0-9], [_] (Underscore), [-] (Dash) Max length: 255	Unique identifier of a user.
Item Id	Yes	[A-z], [a-z], [0-9], [_] (Underscore), [-] (Dash) Max length: 50	Unique identifier of an item.
Time	Yes	Date in format: YYYY-MM-DDTHH:MM:SS (e.g. 2013-06-20T10:00:00)	Transaction time.
Event No		One of the following: - Click - RecommendationClick - AddShopCart - RemoveShopCart - Purchase	The type of transaction. If no usage event is defined, Purchase will be assumed.

Example

168064,6485200,2013/06/20T10:00:00, Purchase

263325,6485200,2013/06/20T10:00:00, Purchase

190485,6485200,2013/06/20T10:00:00, Click

225087,6485936,2013/06/20T10:00:00, Purchase

Cocktail recommendation Demo

Cognitive Services

Demo Microsoft



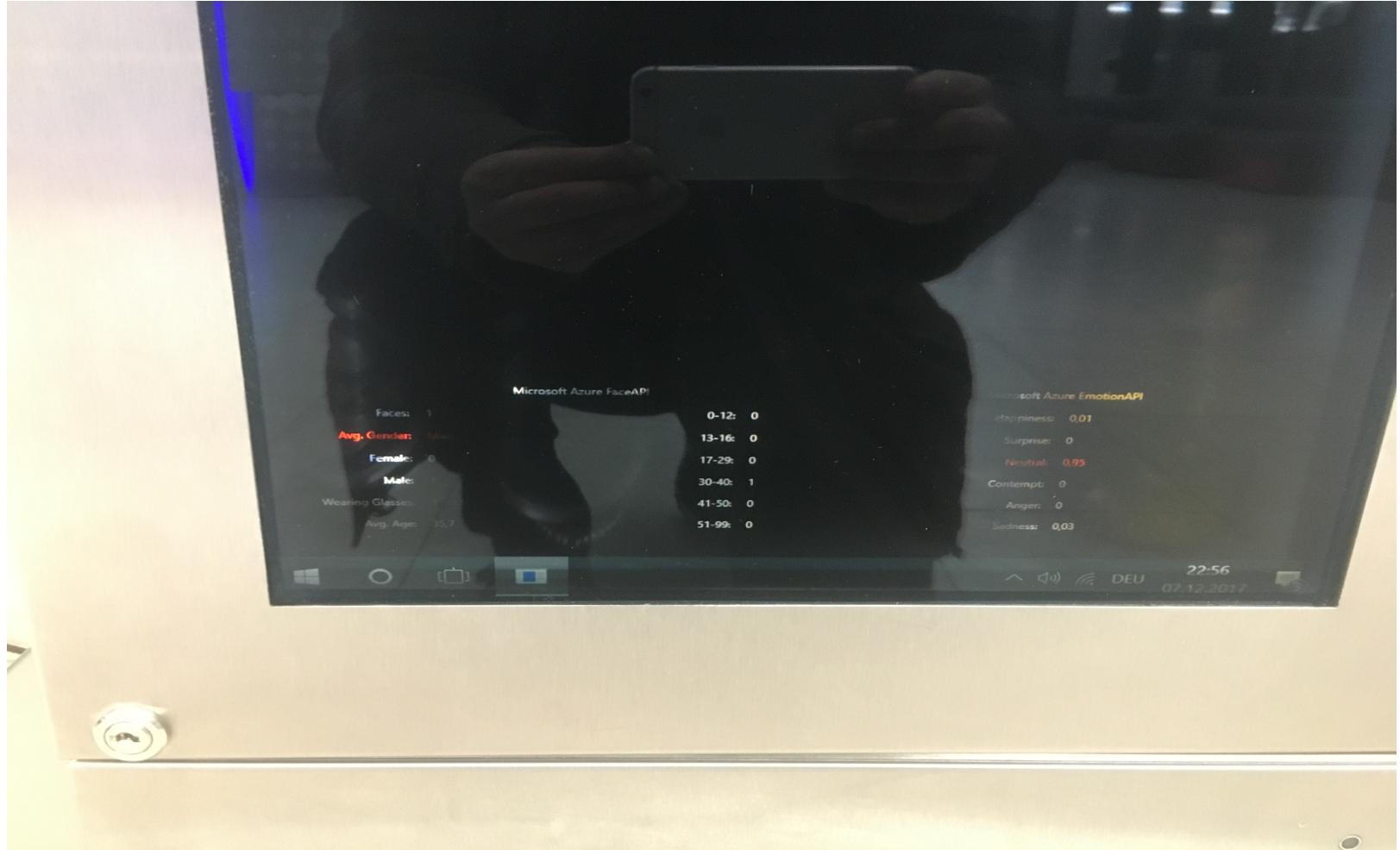
Cognitive Services

Demo Microsoft



Cognitive Services

Demo Microsoft



What's next?

- Video Indexer
- Custom Vision
- Speaker Recognition
- LUIS
- Combination of 2 or more API's
- ...

Question? Question!

Thank you for your attention

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Appendix

Cognitive Services SDK speech

<https://github.com/Azure-Samples/cognitive-services-speech-sdk>

Cognitive Services SDK Vision

<https://github.com/Microsoft/Cognitive-Vision-Windows>

What's new in LUIS

<https://channel9.msdn.com/Shows/AI-Show/Whats-New-with-Language-Understanding-Service-LUIS>

What's new in Vision

<https://channel9.msdn.com/Shows/AI-Show/Vision-Cognitive-Services-Updates>

Appendix

Cognitive Services

<https://azure.microsoft.com/de-de/services/cognitive-services/>

Seeing AI Prototype

<https://www.youtube.com/watch?v=R2mC-NUAmMk&index=6&list=PLD7HFcN7LXRdHkFBFu4stPPeWJcQ0VFLx>

Seeing AI

<http://SeeingAI.com>

Keynote Cognitive Services Build 2017

<https://www.youtube.com/watch?v=TU5KIYa4mBQ>

Cognitive Services with cameras

<https://www.youtube.com/watch?v=O1pDOKzsFOU>

Computer Vision API detail information

<https://www.microsoft.com/en-us/research/publication/rich-image-captioning-in-the-wild/>