Infusing Visual Understanding In Cloud and Edge Solutions Using State-of-the-Art Microsoft Algorithms

Microsoft

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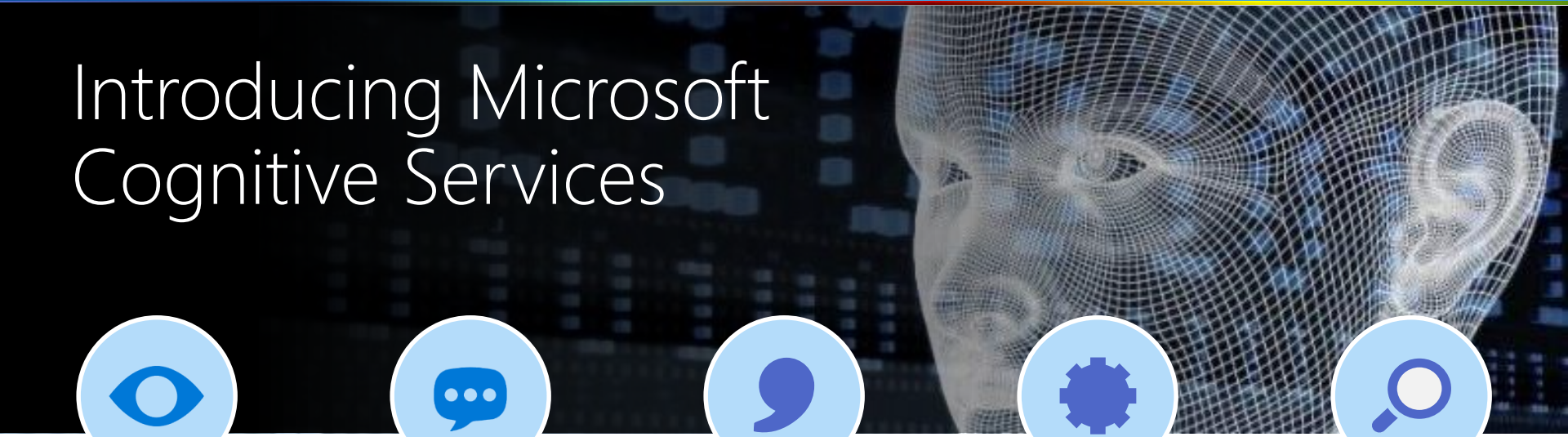
Introducing Microsoft Cognitive Services



Vision **Speech** **Language** **Knowledge** **Search**

Vision in Cognitive Services

Computer Vision

- Image description and tagging
- Content moderation
- OCR

Face

- Face detection and analyses
- Face identification and verification
- Emotion detection

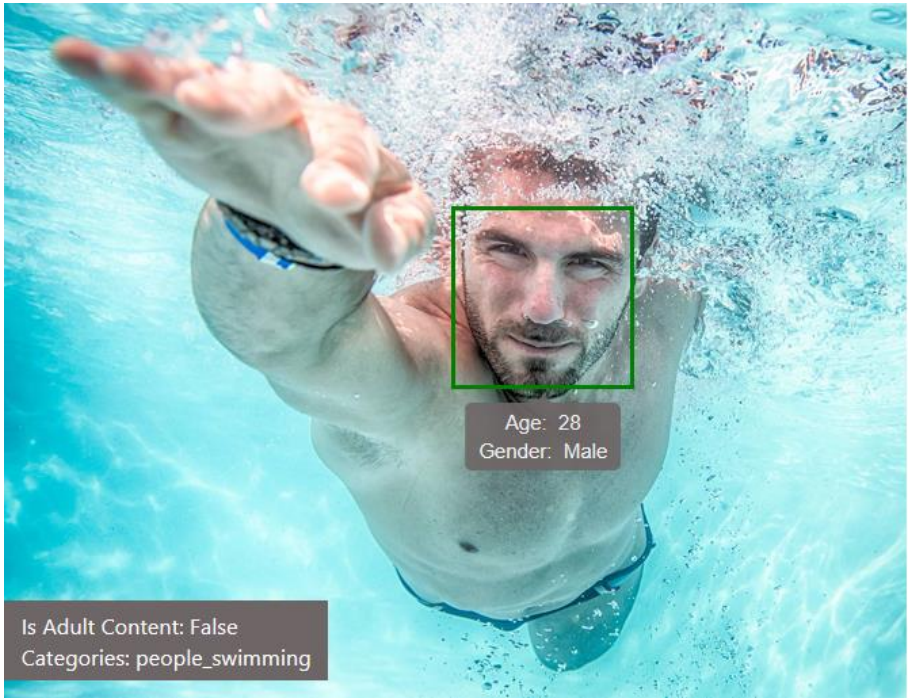
Custom Vision

- Custom image classification
- Custom object detection

Computer Vision – Description and Tagging

Feature	Values
Description	“A black and white photo of a large city”
Tags	“Sky”, “Outdoor”, “City”, “White”, “Skyscraper”

Computer Vision – Image Analyses

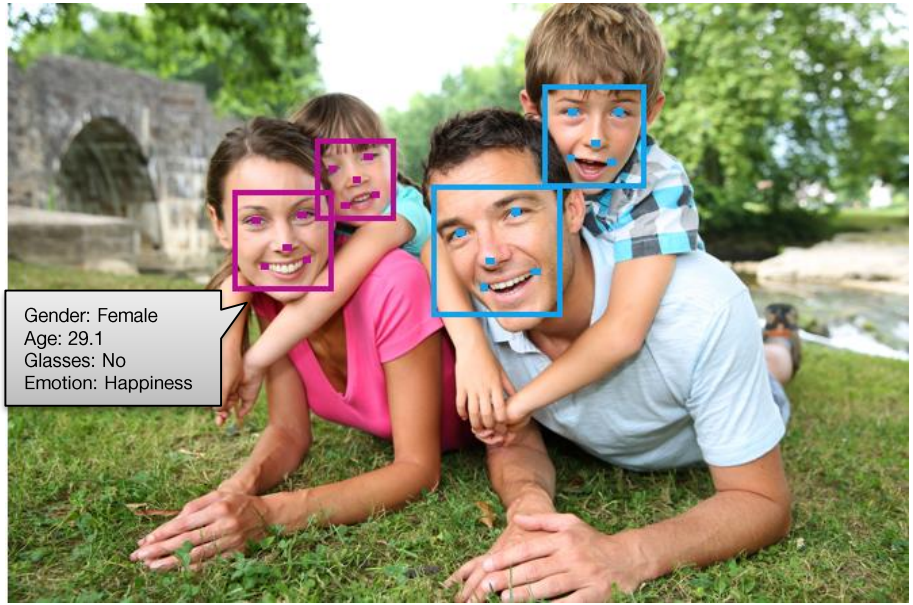


Feature	Values
Adult	False; score: 0.149
Racy	False; score: 0.124
Category	“People Swimming”; score: 0.980
Colors	Background: ☐ Foreground: ▒ Accent Color: ■ #19A4B2

Computer Vision – OCR

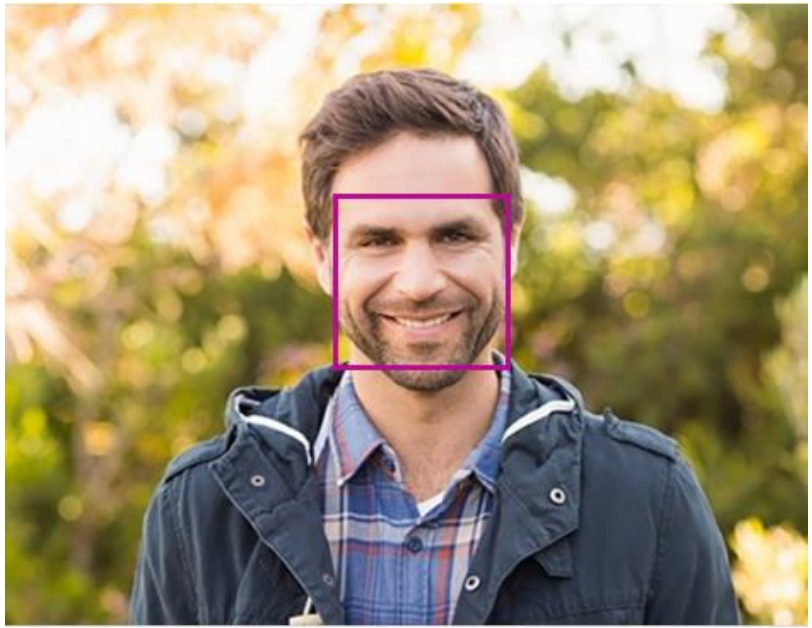
Feature		Text
Line	(316, 47, 284, 340)	
	Words	“IF WE DID” (319, 47, 182, 24)
	Words	“ALL” (316, 74, 204, 69)
	Words	“THE THINGS” (318, 147, 207, 24)

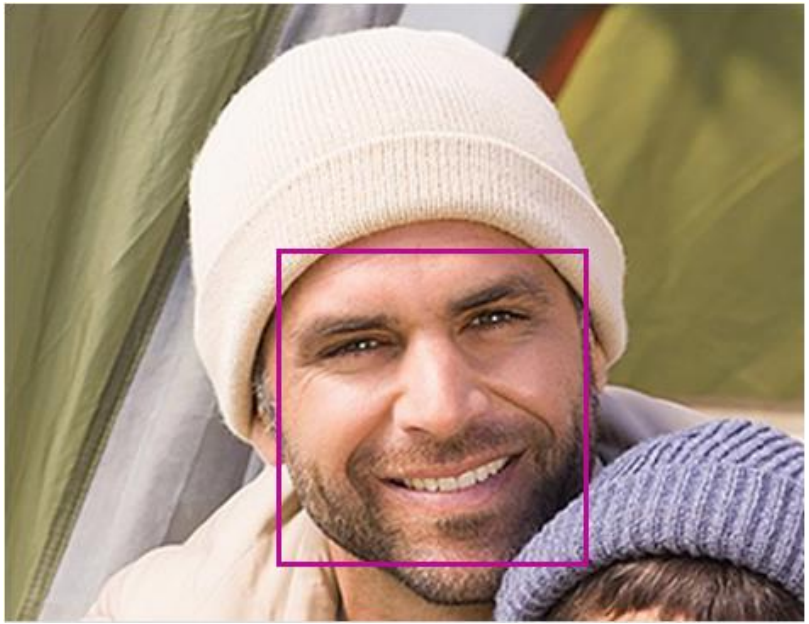
Face – Detection and Analyses



Face	Values
ID	c691db8f-703b…
Rectangle	(90, 211, 67, 67)
Hair	Bald; score: 0.02 Brown; score: 0.92
Glasses	No
Make Up	Eye: False; Lip: False
Emotion	Happiness; score: 1.0 Anger; score: 0.0 Sadness; score: 0.0

Face – Identification and Verification

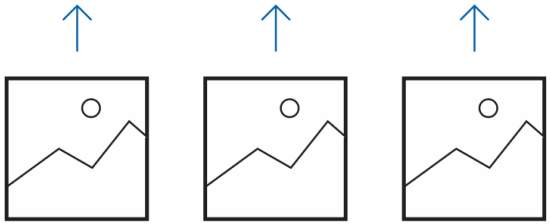




Verification result: The two faces belong to the same person.
Confidence is 0.7349.

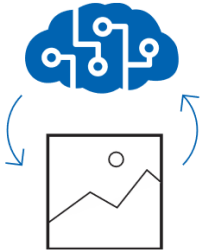
Custom Vision – Train Your Own Models

3 Easy Steps to Your Own Classifier/Object Detector



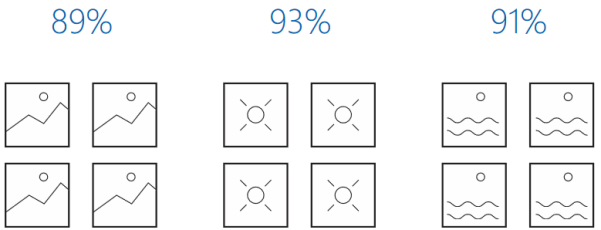
Upload

- Bring your own labeled images
- Add labels quickly using our tools



Train

- Teach our model the concepts you care about



Evaluate

- Evaluate results
- Improve through active learning

https://customvision.ai/

Why? And one more great reason

Easy

A few lines of code to hook up with REST API

Easy on your wallet: <$2.50/1,000 API calls

In Control

Available today on Custom Vision!

Customize and deploy in total control.

docker

Azure IoT

Tested

Built by experts from MS Research and Azure

Quality documentations and community support

GitHub msdn stackoverflow

Introducing…

Seeing AI – Talking Camera App

Talking Camera App for Blind Community

Short Text

People

Scenes

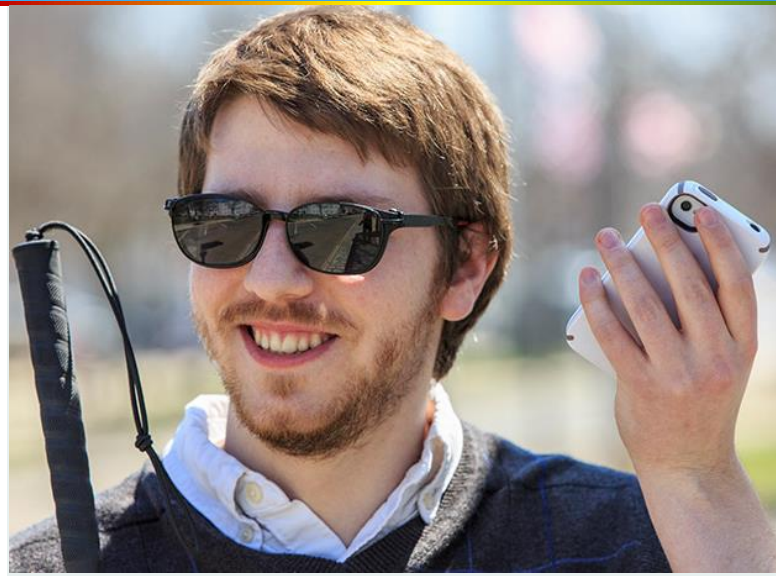
Handwriting

Documents

Products

Currency

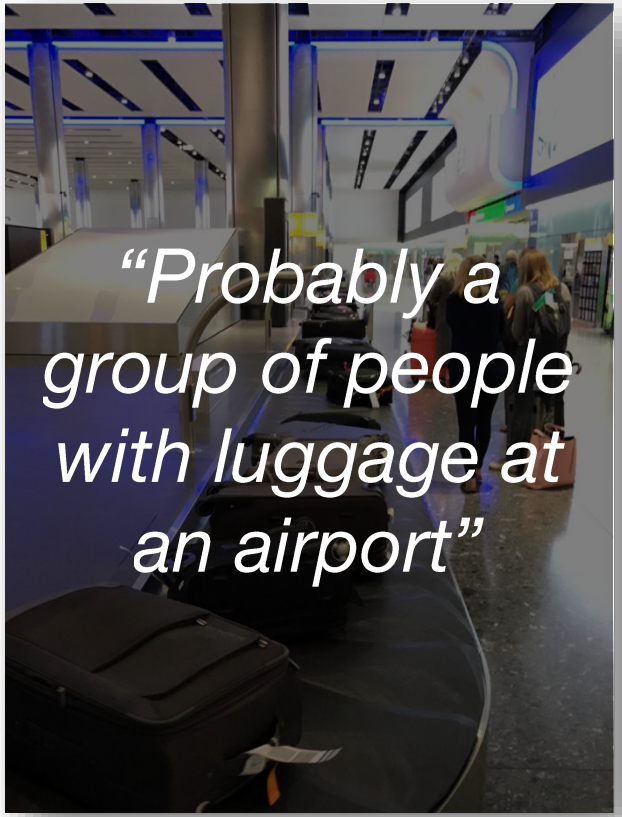
Light

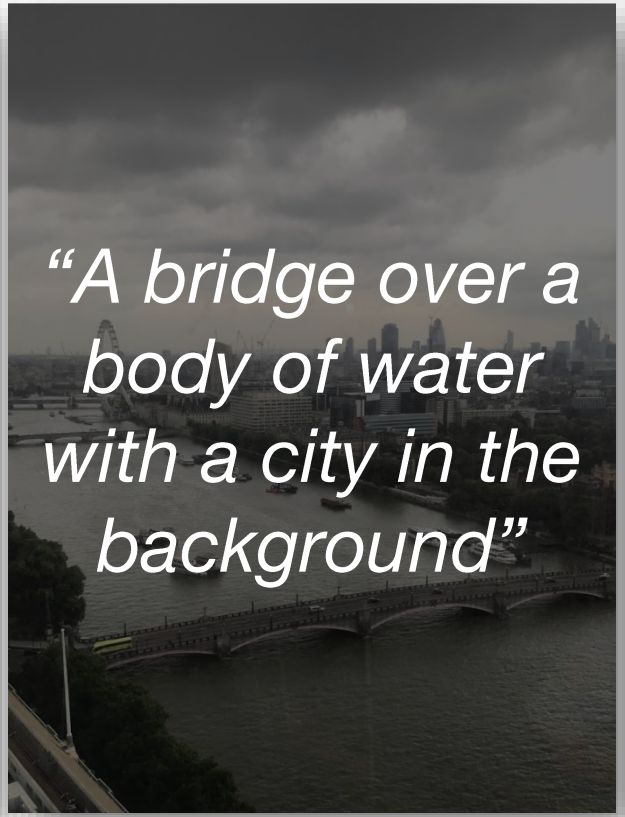


http://SeeingAI.com

5 Million Tasks Assisted

Seeing AI – Talking Camera App





Talking Camera App – Products

Short Text
People
Scenes
Handwriting

Documents
Products
Currency
Light

Using on-device AI + Cloud

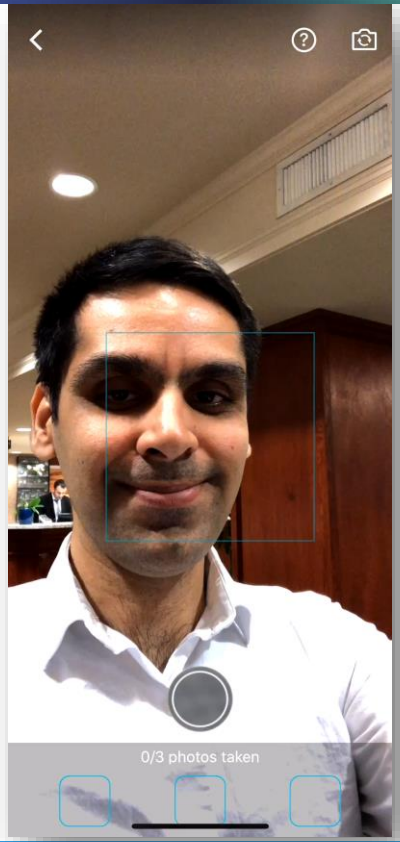
Talking Camera App – Real Time Text

Short Text People Scenes Handwriting

Documents Products Currency Light

Using on-device AI + Cloud

Talking Camera App – People

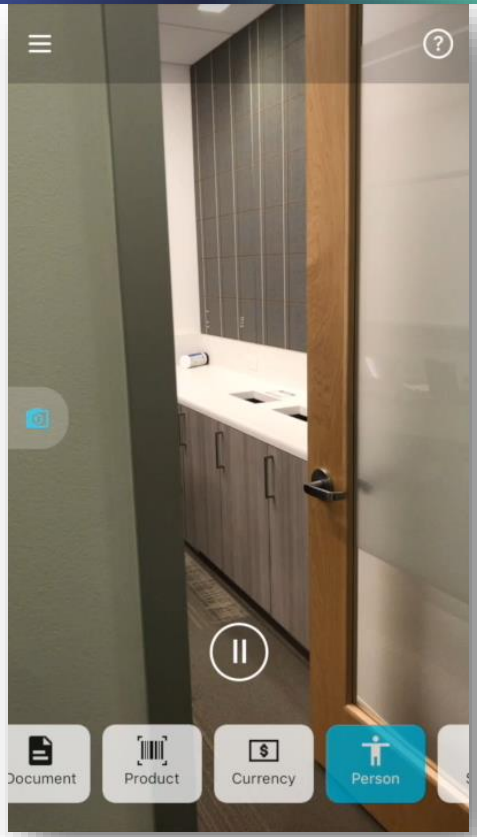


Short Text | **People** | Scenes | Handwriting

Documents | Products | Currency | Light

Using on-device AI + Cloud

Talking Camera App – People

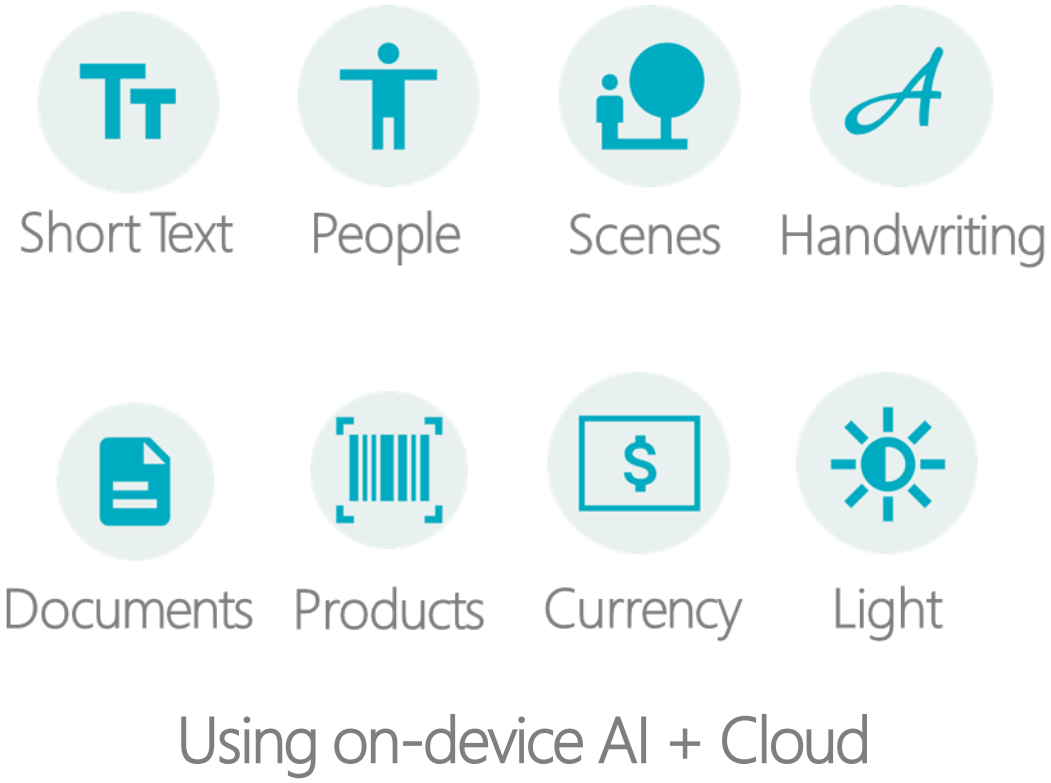


Short Text | **People** | Scenes | Handwriting

Documents | Products | Currency | Light

Using on-device AI + Cloud

Talking Camera App – Text and Scenes



In Summary…

- Microsoft Cognitive Services offer a broad spectrum of ready-to-use and customizable computer vision capabilities.
- Microsoft is bridging the cloud and the edge with Custom Vision model export.
- These capabilities are powering imaginative and inspired uses – including our own Seeing AI.

Get started today to make both cloud and edge intelligent!

Microsoft Cognitive Services

Give your apps a human side

Resources

- 2018 Embedded Vision Summit:
  - Presentation abstract
  - Speaker bios: Anirudh Koul and Jin Yamamoto
- Microsoft Cognitive Services
  - Computer Vision API
  - Face API
  - Custom Vision API, https://customvision.ai/
- Seeing AI
  - iTunes Store