Playing the game with Azure Cognitive Services

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ZURE

ABOUT ZURE

- **100%** Azure since 2011
- **4** Azure MVP's
- **52 / 55** experts
- **92** Employee NPS
- **14,2** yrs experience avg

Microsoft Partner
Microsoft
Gold Application Development
Gold Cloud Platform
Gold Data Analytics
Gold Data Platform
Gold DevOps

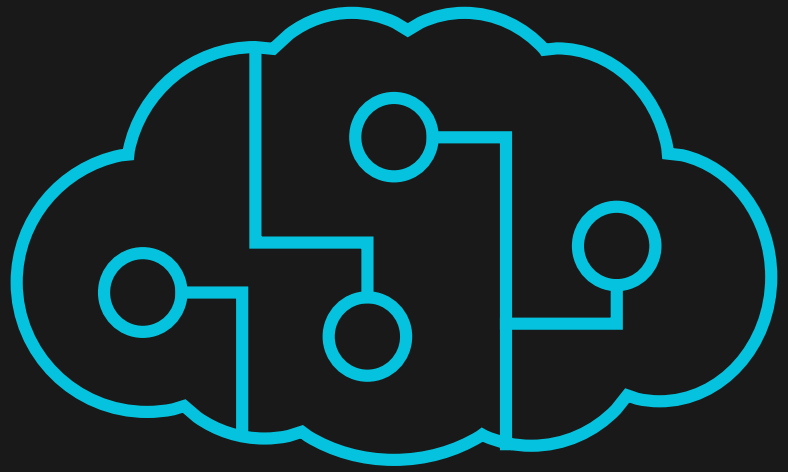
MVP Microsoft® Most Valuable Professional

Microsoft CERTIFIED Trainer

Partner Seller Microsoft

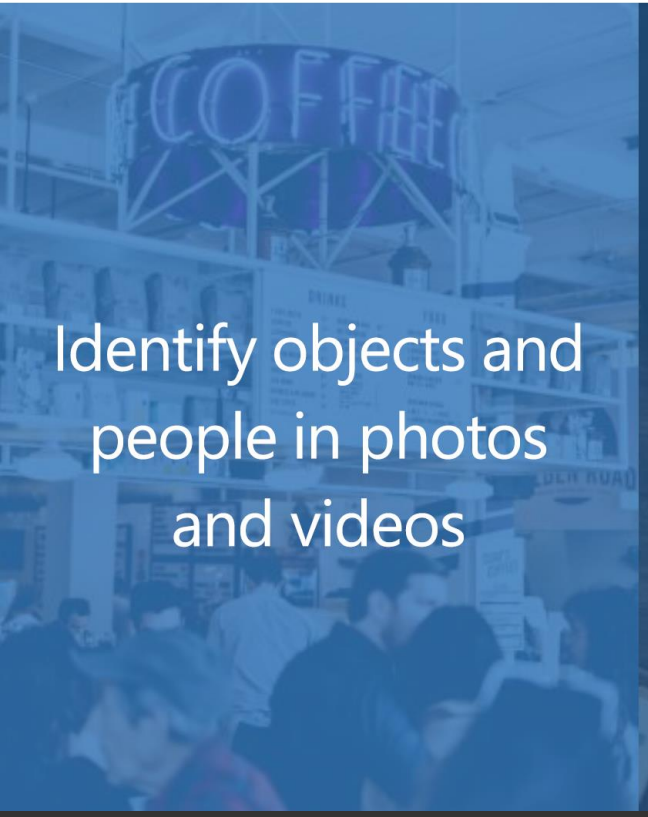
Microsoft Partner
2019 Partner of the Year Finalist
Application Innovation Award

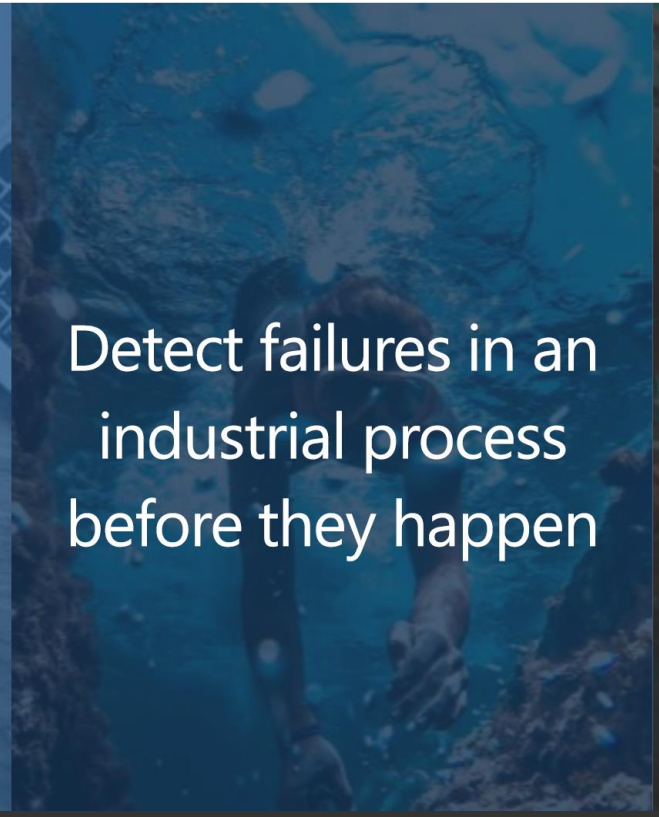
Azure Cognitive Services



As an (integration) developer, why should I care about AI and ML?

Some problems are difficult to solve using traditional algorithms and procedural programming.





Why Microsoft Cognitive Services?

Easy

Roll your own with REST APIs

Simple to add: just a few lines of code required

Get a key, Build

Flexible

Integrate into the language and platform of your choice

Breadth of offerings helps you find the right for your app

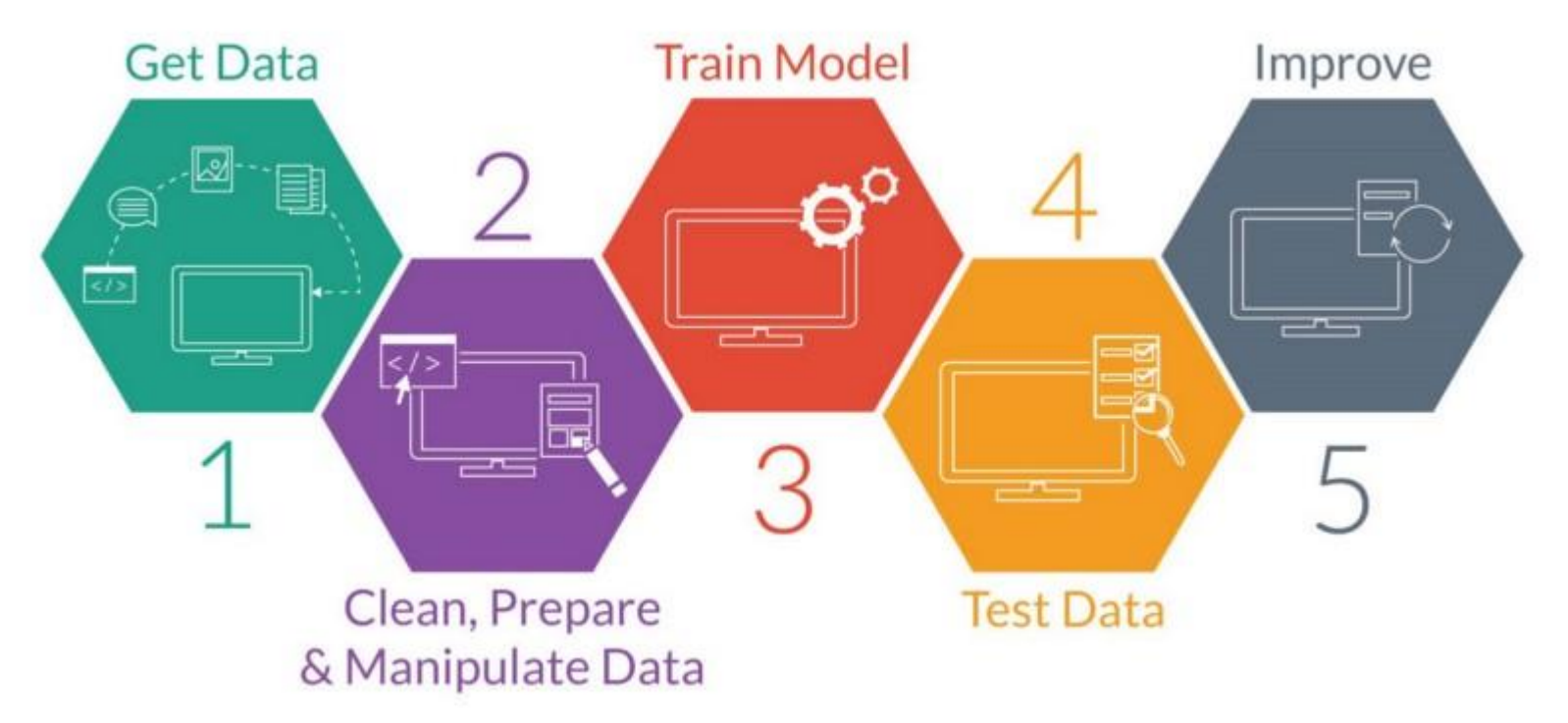
Bring your own data for your custom experience

Tested

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

Quality documentation, sample code, and community support

Machine Learning Process



Azure Cognitive Services

Personalizer

Decision

Content Moderator

Anomaly Detector

Ink Recognizer

Computer Vision

Face

Vision

Video Indexer

Custom Vision

Form Recognizer

Text Analytics

Translator Text

Bing Spell Check

Language

Language Understanding

QnA Maker

Conversation transcription capability

Custom transcription

Speech

Speech transcription

Text-to-Speech

Neural Text-to-Speech

Bing Custom Search

Bing Video Search

Bing Entity Search

Bing News Search

Bing Local Business Search

Web search

Bing Web Search

Bing Image Search

Bing Autosuggest

Bing Visual Search


Vision

Vision

Computer Vision

Custom Vision

Face

Form Recognizer *

Ink Recognizer *

Video Indexer

Vision

Computer Vision

Custom Vision

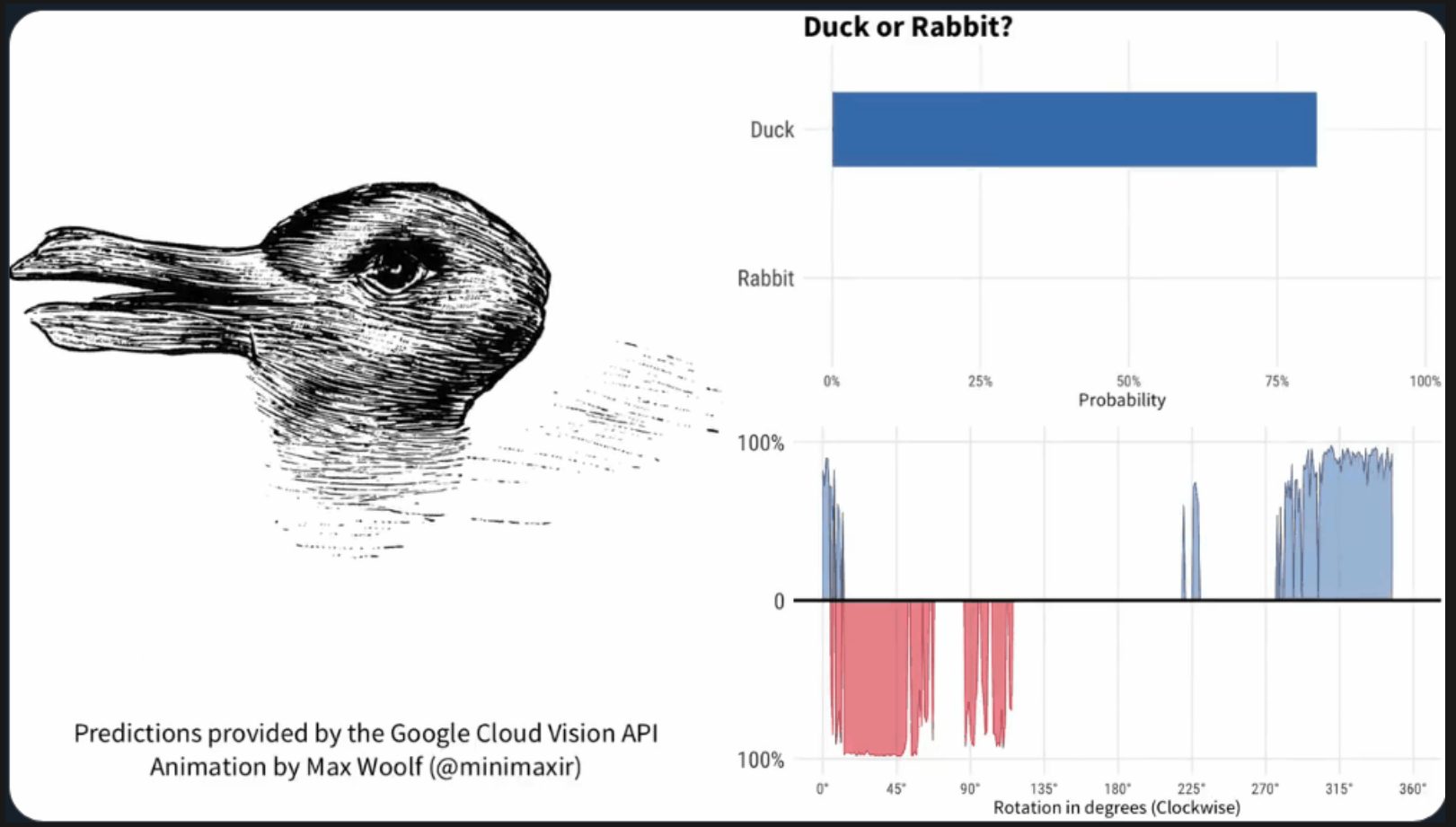
Face

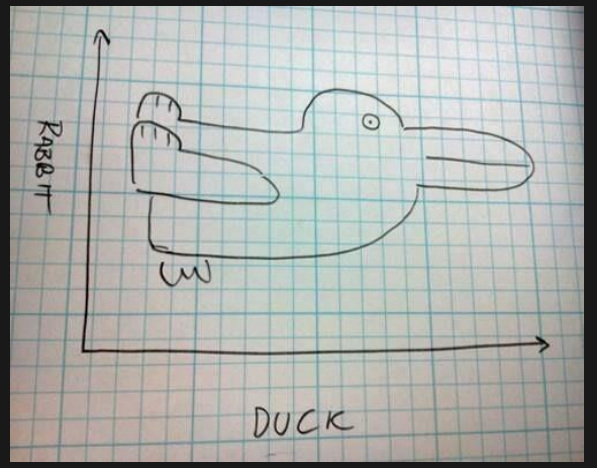
Form Recognizer *

Ink Recognizer *

Video Indexer

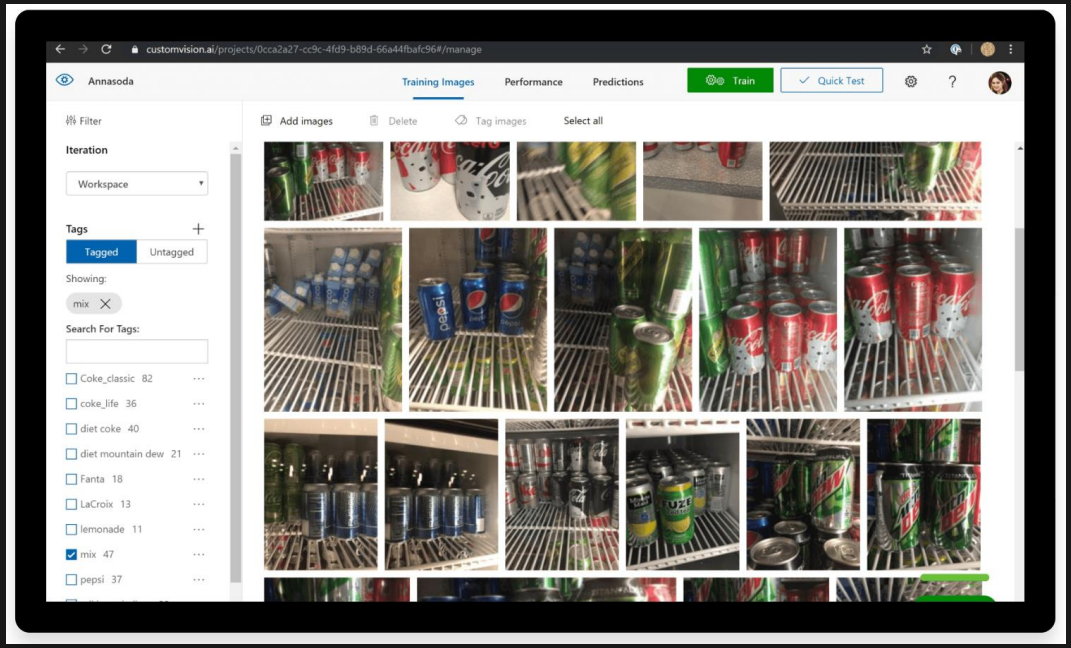
Fun with Vision services





Custom Vision

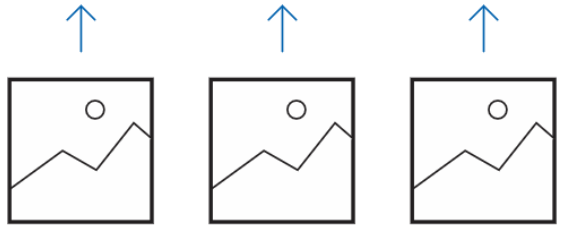
- Learn to customize your scenario
  - Train your model by uploading example images and labelling them
  - Recognize objects
  - Get the info you want from your images



Custom Vision

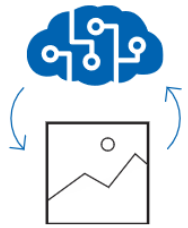
- Allows you to upload your own images, label them and train a service to recognize objects specific to your/any domain.
- Use as little as 50 images for a prototype
- Keep improving your model with new iterations
- Publish model as REST API

Custom Vision



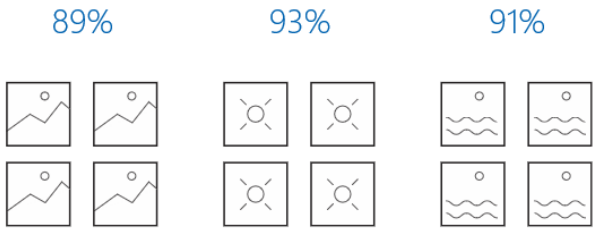
Upload Images

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.

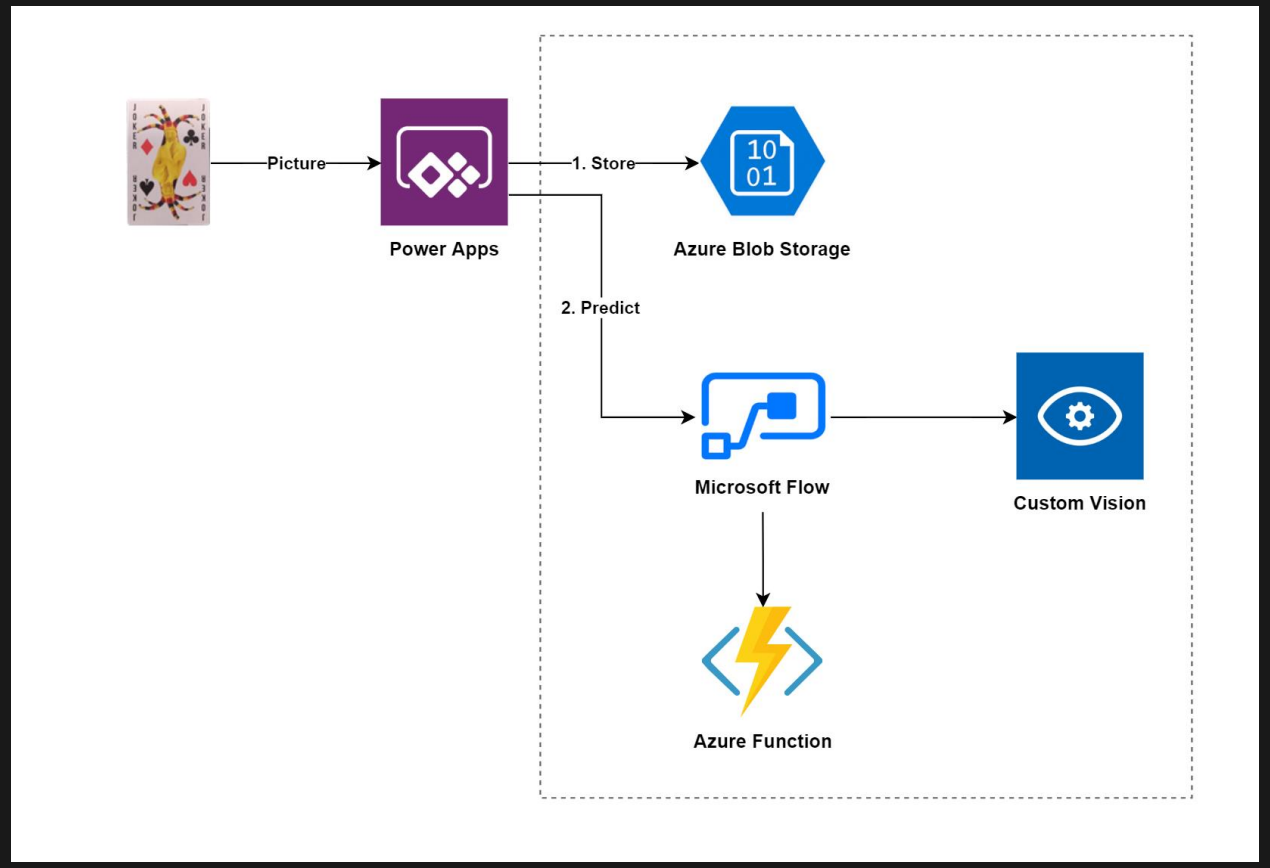


Evaluate

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

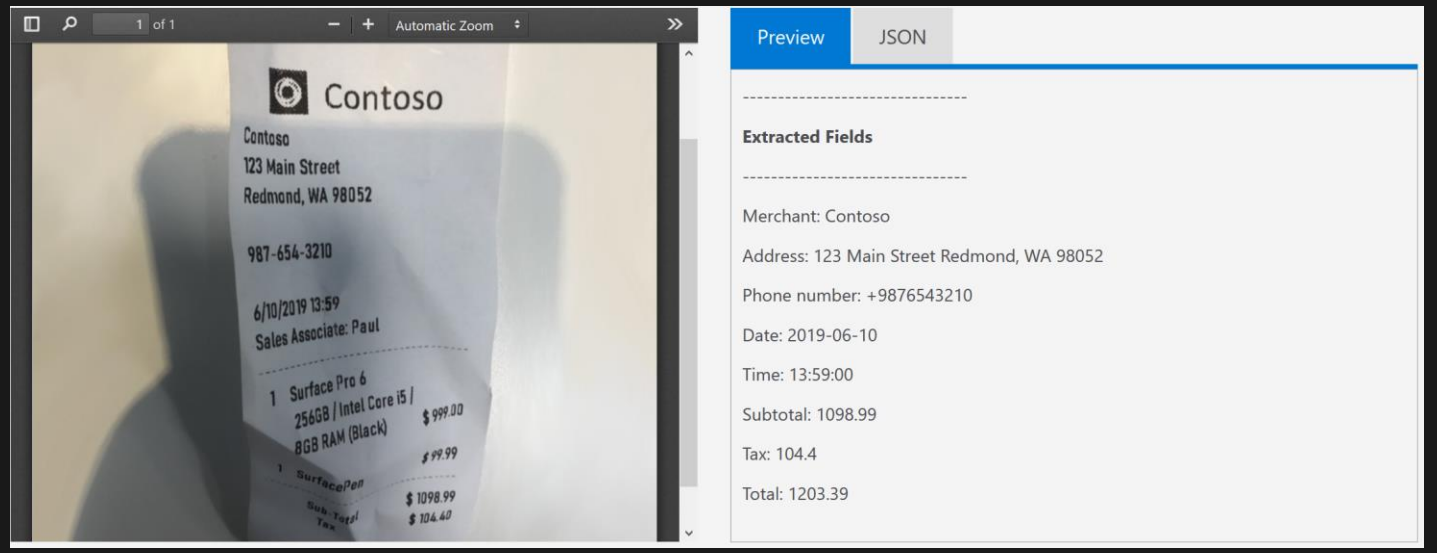
Custom Vision – Demo

Custom Vision – Demo Setup

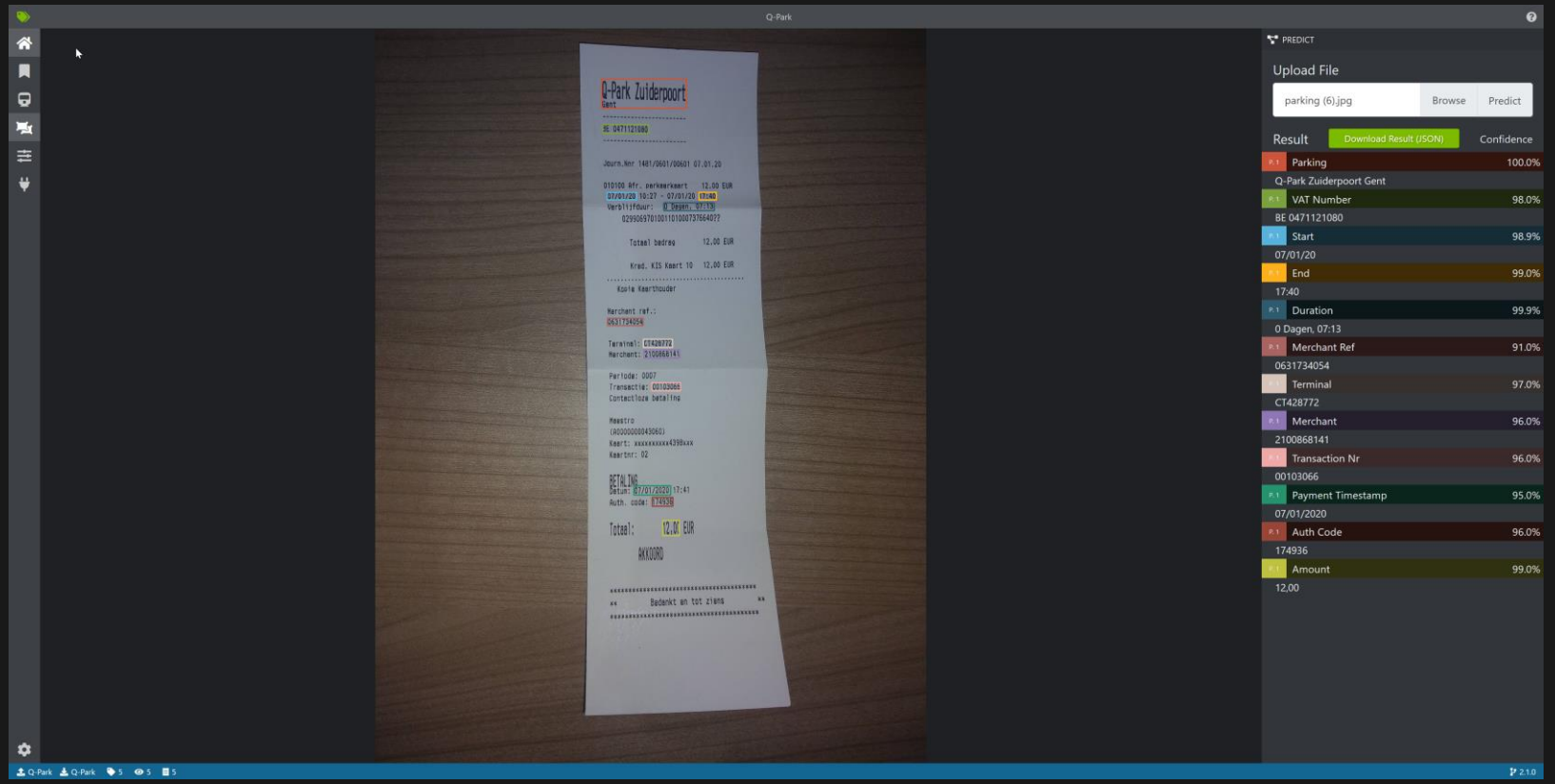


Form Recognizer *

- Extract text and structure from documents (e.g. PDF)
  - Key/Value Pairs
  - Tables
  - Forms
  - Receipts



Form Recognizer - Demo



Cognitive Containers

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@pvandenheede

VMs vs Containers

Source: https://www.backblaze.com/blog/vm-vs-containers/

VMs vs Container

What's the Diff: VMs vs Containers

VMs	Containers
Heavyweight	Lightweight
Limited performance	Native performance
Each VM runs in its own OS	All containers share the host OS
Hardware-level virtualization	OS virtualization
Startup time in minutes	Startup time in milliseconds
Allocates required memory	Requires less memory space
Fully isolated and hence more secure	Process-level isolation, possibly less secure

Source: https://www.backblaze.com/blog/vm-vs-containers/

Why Cognitive Containers?

- Control over data
  - Data is not sent over the internet
- Control over model updates
  - Flexibility in versioning and model updates
- Portable architecture
  - Azure, on-premises or edge
- High Throughput, Low Latency
  - Run physically close to your application

** Internet connection is still required for billing purposes*

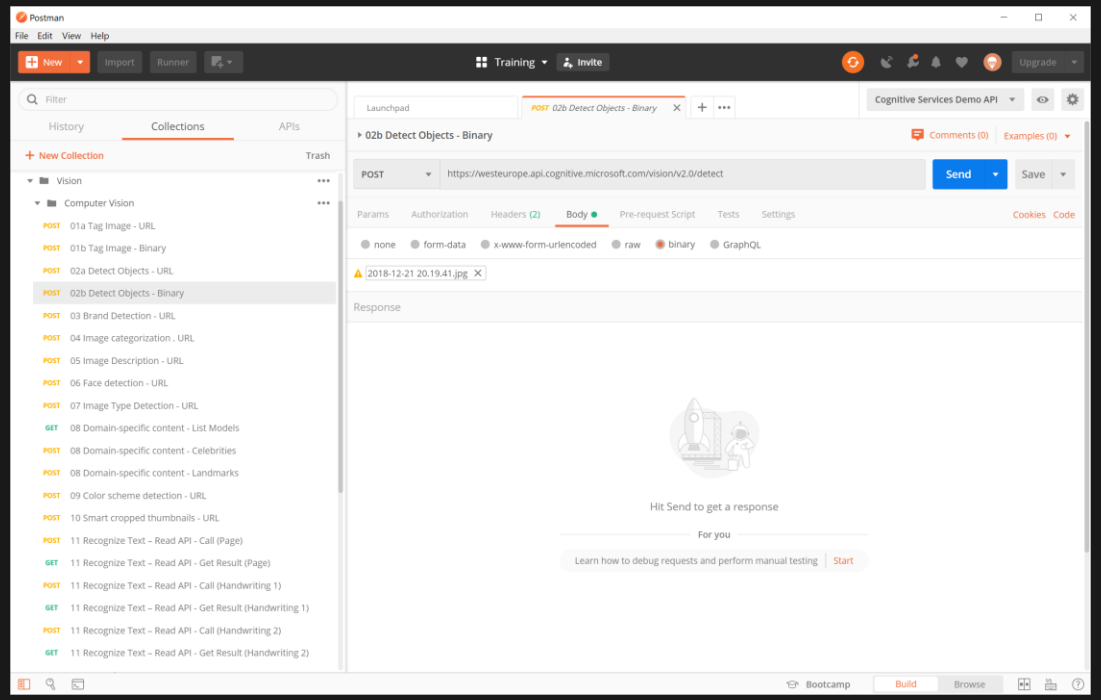
Availability

- Anomaly Detector
- Computer Vision
- Face
- Form Recognizer *
- Language Understanding (LUIS)
- Speech Service API
- Text Analytics

Resources

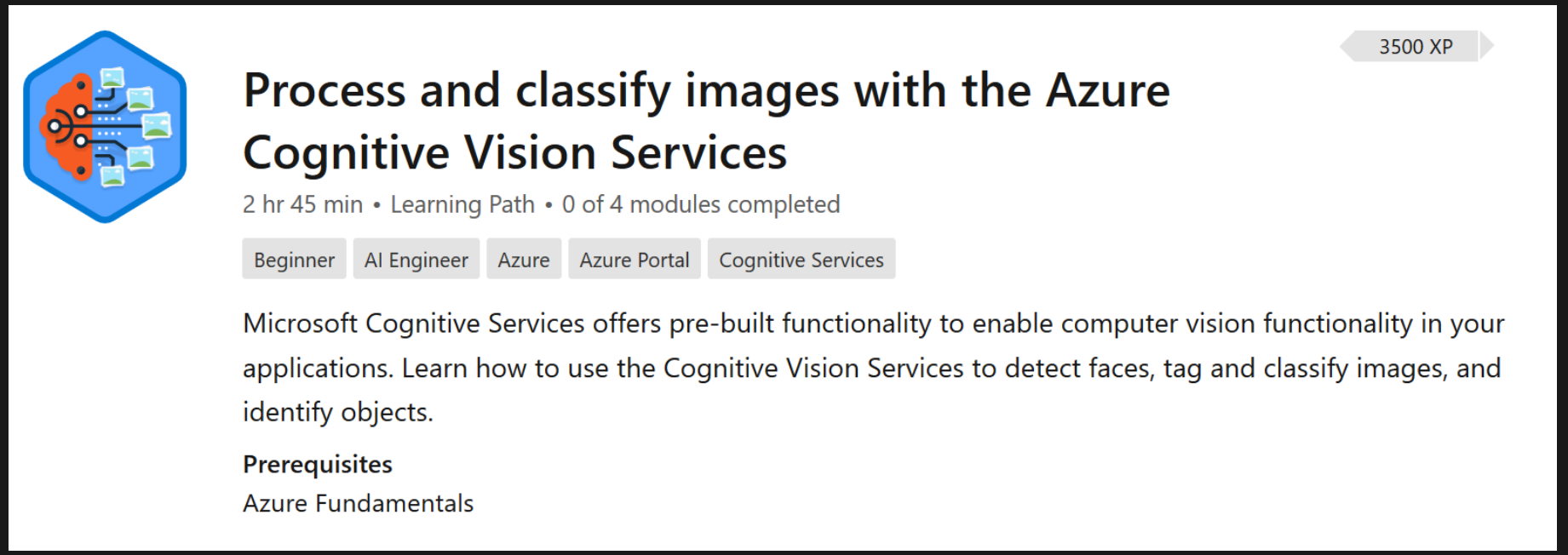
Vision Postman collection

- https://github.com/pvandenheede/cognitive-postman-collection



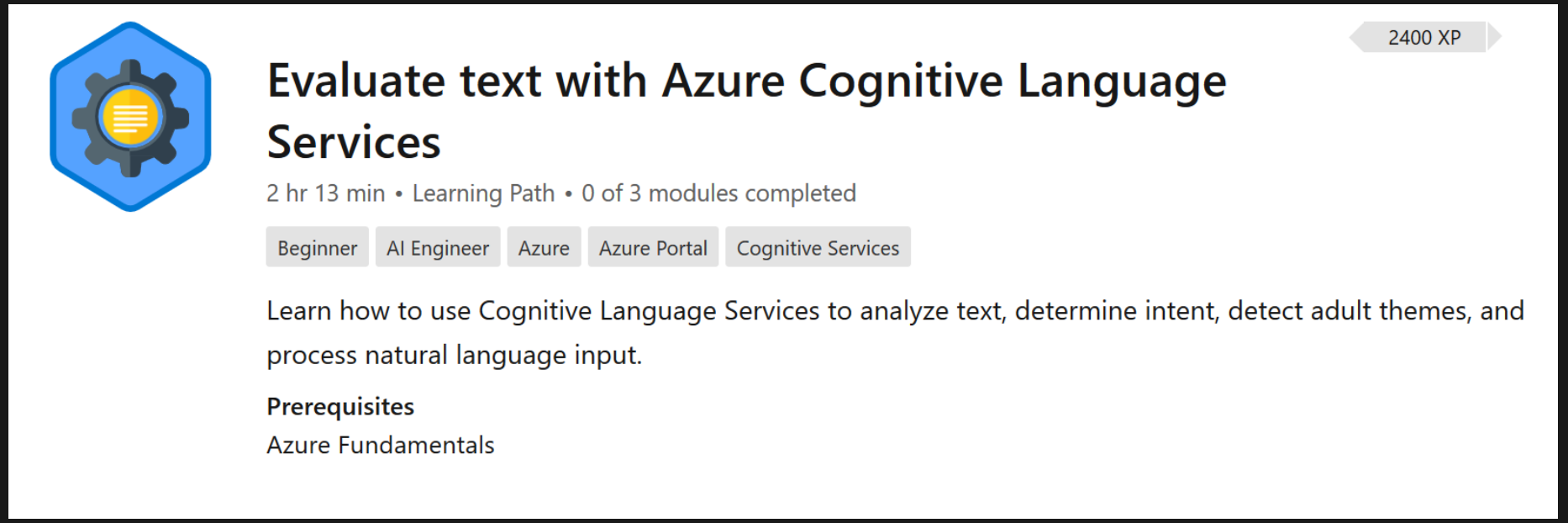
Microsoft Learn

- http://zure.ly/ai-intro/learnpath-vision



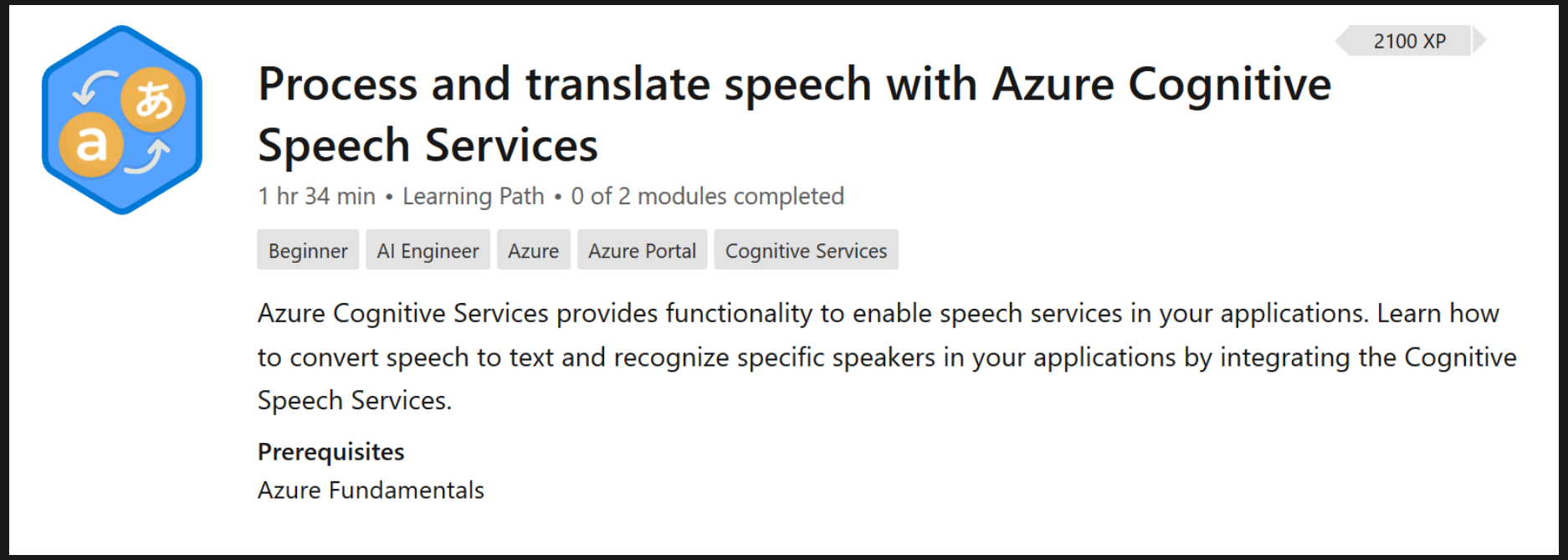
Microsoft Learn

- http://zure.ly/ai-intro/learnpath-text



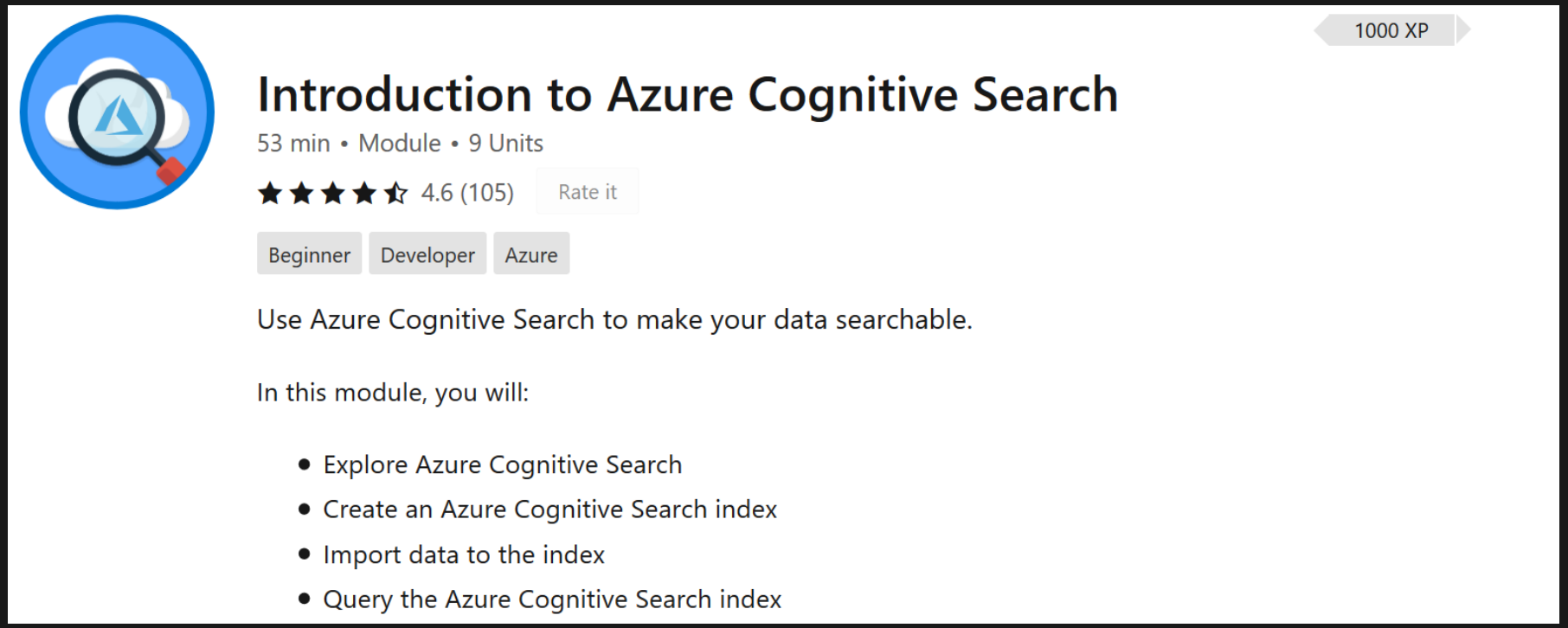
Microsoft Learn

- http://zure.ly/ai-intro/learnpath-speech



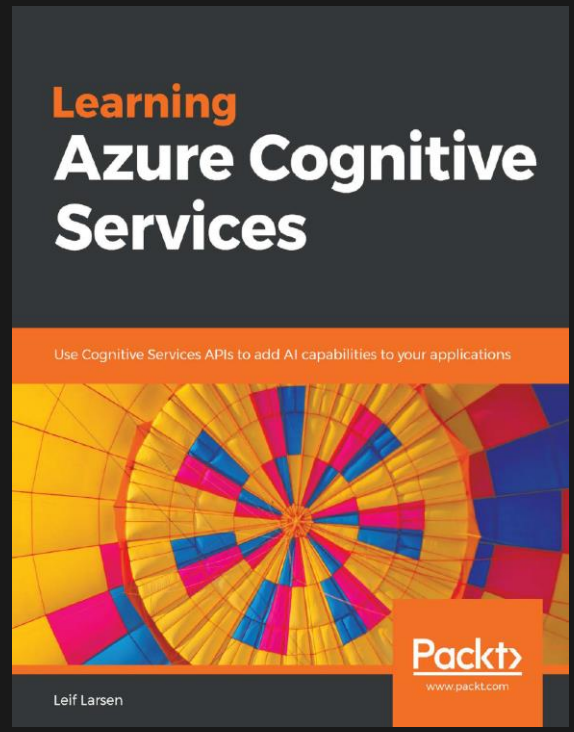
Microsoft Learn

- http://zure.ly/ai-intro/learn-search



Microsoft Azure Cognitive Services Book

- http://zure.ly/ai-intro/cognitive-book
- 313p
- **FREE**



Presentation Material

- http://zure.ly/pieter/azcognitive-playingthegame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