



배워서 바로쓰는

Microsoft 인공지능 3종세트

김영욱

부장 / PS / Microsoft

youngwook@outlook.com

Blog: Youngwook.com



Microsoft

CSE(Commercial Software Engineering Team)

Senior Software Engineer

PS(Public Sector)



azure/

GET IT GEAR

밀리터리 속
규칙과 상식

본방송

X T M HD

시에게는 12척의 전함이 있습니다



00:00:00 / 00:26:06

/ 지금 본방인증하면 남자를 위한 볼릿검들이 내 손안에 HD gcomk.com/ GOMTV

War of IT



YES24.COM

국내도서 | KBS 역사 버라이어티 역사저널 그날 발간!

그레이의 50가지 그림자 | 한비야 | 한병철 | 부의 시대

큰분야찾기 | 베스트셀러 | 신상품 | 이벤트세상 | YES캘린더 | 만원이하도서 | 정가인하도서 | 추천도서 | 기획코너 | 회원리뷰 | 미리보기 | 문화행사초대


황석영 작가와 소설기행! 2015 YES24 소설학교 개강!

OPEN! 신규 서비스 4

welcome > 국내도서 > IT 모바일 > IT 전문서 > IT 비즈니스


도서 [예약판매] War of IT: 전쟁사를 통해서 본 IT 기업의 패권 다툼 [2015/03/03 이후 배송가능] [예약판매]

김영욱 저 | 지앤선(志&嬋)



크게보기

정가	15,000원
판매가	13,500원 (10%할인)
YES포인트 ?	150원(1%적립)
카드혜택 더보기 >	8,100원 - 예스24하나카드(40%할인, 월1만원한도) 8,100원 - 예스24신한카드(40%할인, 1만원이상 결제시, 월1만원한도)
* 5만원이상 구매시 2,000원 추가적립 ?	

 2,500 **하루 3번, 모바일에서는 2,500원 상품권이 쏟아진다!**

출간일	2015년 02월 28일	328쪽 130*190*30mm
ISBN-13	9788993827910	ISBN-10 8993827915

Cloud 하면?

AWS!!

AI 하면?

AI 개발하면

요즘 개발언어아면?



Microsoft

Python!!!


<http://bitly.kr/y5ss>

Platform Services

Security & Management

-  Portal
-  Active Directory
-  Multi-Factor Authentication
-  Automation
-  Key Vault
-  Store / Marketplace
-  VM Image Gallery & VM Depot

Compute

-  Cloud Services
-  Service Fabric
-  Batch
-  Remote App

Web and Mobile

-  Web Apps
-  API Apps
-  API Management
-  Mobile Apps
-  Logic Apps
-  Notification Hubs

Developer Services

-  Visual Studio
-  Azure SDK
-  Team Project
-  Application Insights

Hybrid Operations

-  Azure AD Connect Health
-  AD Privileged Identity Management
-  Backup
-  Operational Insights
-  Import/Export
-  Site Recovery
-  StorSimple





Integration

-  Storage Queues
-  Biztalk Services
-  Hybrid Connections
-  Service Bus

Analytics & IoT

-  HDInsight
-  Machine Learning
-  Data Factory
-  Event Hubs
-  Stream Analytics
-  Mobile Engagement

Data

-  SQL Database
-  SQL Data Warehouse
-  Redis Cache
-  Search
-  DocumentDB
-  Tables

Media & CDN

-  Media Services
-  Content Delivery Network (CDN)

Infrastructure Services

Compute

-  Virtual Machines
-  Containers

Storage

-  BLOB Storage
-  Azure Files
-  Premium Storage

Networking

-  Virtual Network
-  Load Balancer
-  DNS
-  Express Route
-  Traffic Manager
-  VPN Gateway
- 

Datacenter Infrastructure (24 Regions, 19 Online)

Microsoft Azure is the leading hyperscale cloud

50

Azure regions
around the world

● AZURE REGIONS

More than AWS and Google Cloud combined



인공지능에
필요한 건 뭐?

80000



1. Build in AI
2. Custom AI
3. Conversational AI

Microsoft AI Platform

Azure AI Services

PRE-BUILT AI

Cognitive Services

CONVERSATIONAL AI

Bot Service



CUSTOM AI

Azure Machine Learning

CODING & MANAGEMENT TOOLS

VS Tools
for AI

Azure ML
Studio

Azure ML
Workbench

Others (PyCharm, Jupyter Notebooks...)



DEEP LEARNING FRAMEWORKS

3rd Party

Cognitive
Toolkit

TensorFlow

Caffe

Others (Scikit-learn, MXNet, Keras,
Chainer, Gluon...)

Azure Infrastructure

AI ON DATA

AI COMPUTE

Cosmos
DB

SQL
DB

SQL
DW

Data
Lake

Stream
Analytics

DSVM

Batch
AI

ACS

IoT
Edge

101010
010101
101010

CPU, FPGA, GPU

AI를 위한 언어?

Python

Python 개발환경

Console

MomoJang!!

Visual Studio Code

Jupyter Notebook

Chris Dias - Microsoft
Erich Gamma - Microsoft
John Papa - johnpapa.net

Visual Studio Code

A deep dive on the code editor
Windows



August 21-25 | New York

jupytercon

The Official Jupyter Conference

The Pavilion Pass is available! Get access to the sponsor pavilion, networking events, keynotes, and more.

New Pass: \$149

[Learn more](#)



Featured: Python Data Science Handbook by Jake VanderPlas

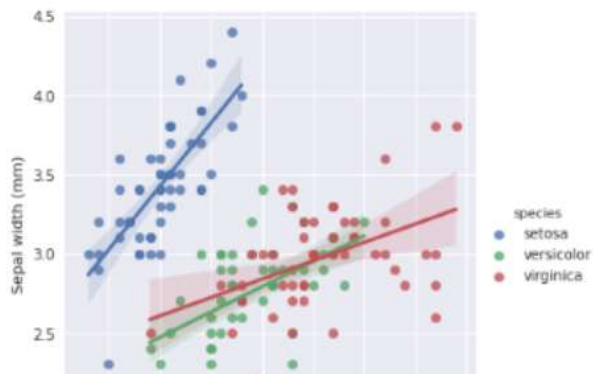


Plot Iris data using matplotlib/seaborn

```
In [1]: %matplotlib inline
import seaborn as sns
sns.set()
```

```
In [2]: iris = sns.load_dataset("iris")
g = sns.lmplot(x="sepal_length", y="sepal_width", hue="species",
              truncate=True, size=5, data=iris)
g.set_axis_labels("Sepal length (mm)", "Sepal width (mm)")
```

```
Out[2]: <seaborn.axisgrid.FacetGrid at 0x7fcaaffcc6d8>
```



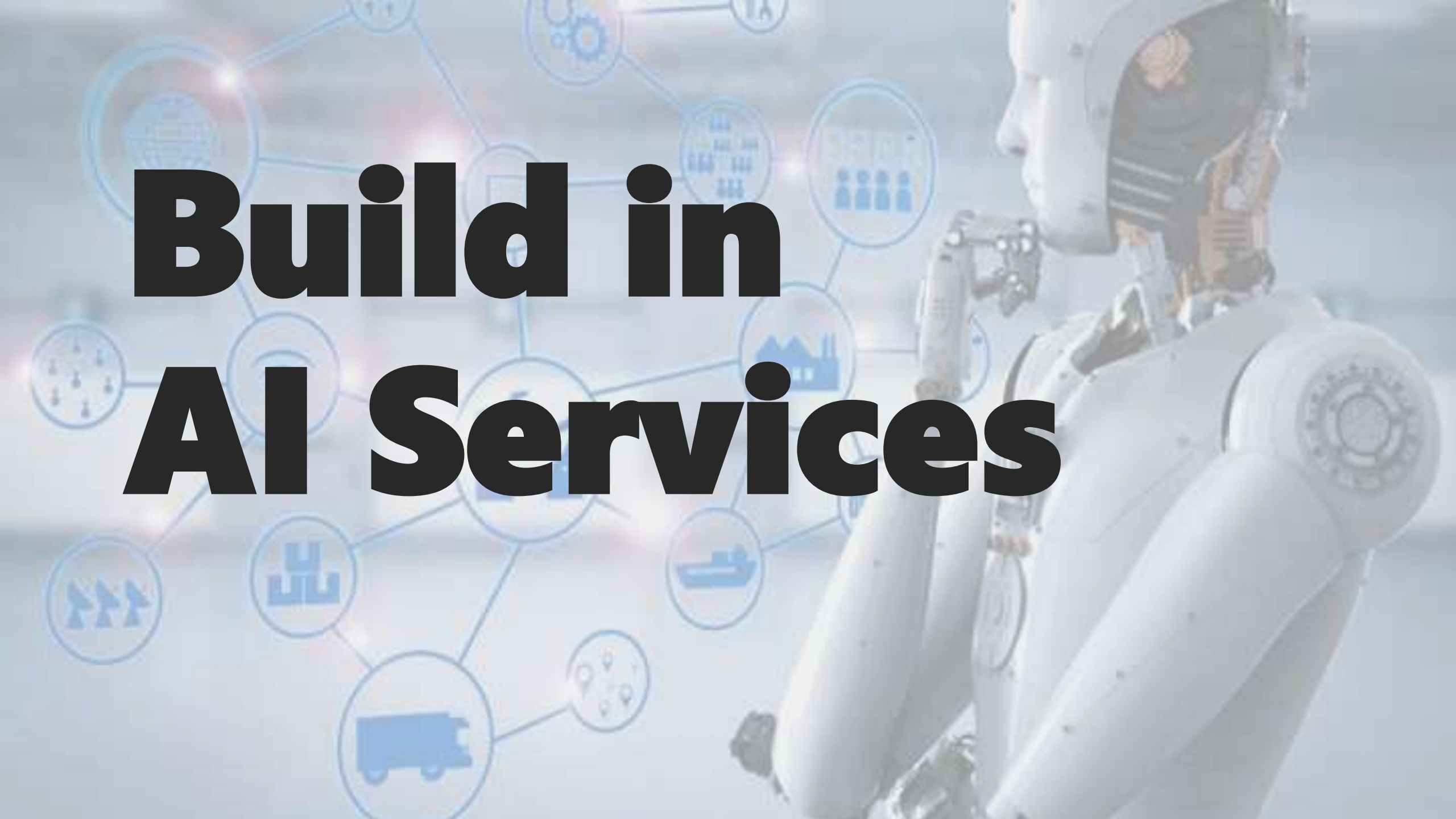
Interactive coding in y browser

Free, in the cloud,
powered by [Jupyter](#)

Demo

Azure Notebook

Build in AI Services





Microsoft

Technologies ▾

Documentation ▾

Resources ▾

Cognitive Toolkit

Features ▾

Install

Tutorials

Docs

Cognitive Toolkit

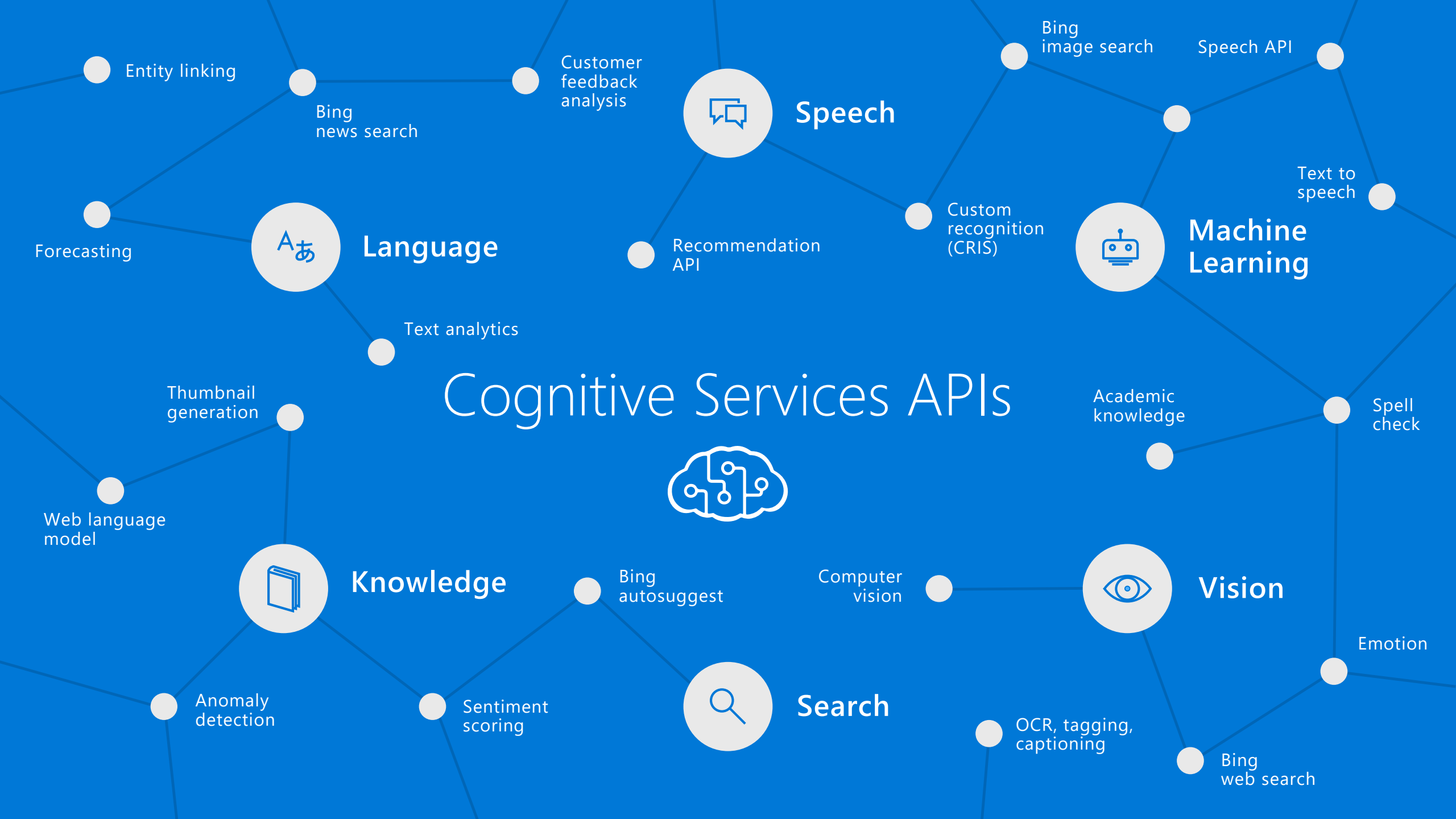
<https://www.microsoft.com/en-us/cognitive-toolkit/>

The Microsoft Cognitive Toolkit

A free, easy-to-use, open-source, commercial-grade toolkit that trains deep learning algorithms to learn like the human brain.

GET STARTED >





Variety of Creative Apps



How-Old.net
HOW OLD DO I LOOK? #HowOldNet



Sorry if we didn't quite get the age and gender right - we are still improving this feature



Try Another Photo!



TwinsOrNot.net
Are you twins? #TwinsOrNotRobot



100%

Perfect match



Help us improve or start over

You can also click a pic to compare to someone new

Powered by Project Oxford



365



185K

Privacy & Cookies | Terms of Use | Trademark | © 2015 Microsoft



Microsoft



MyMoustache.net
15,361 faces analyzed and counting #MyMoustacheRobot



De-stache Me!

Try Again!

Sorry if we didn't quite get the moustache quite right - we are still improving this feature

It doesn't look like you have a moustache! #NOSTACHE



15,361

SETTING UP

ULTIMATE

You

Everyone Else (14996)



Mimicker Alarm

Mimic a **happy** face



CaptionBot

I think it's a young man jumping in the air on a skateboard.



How did I do?



Try another

The Magic behind CaptionBot.ai

Powered by Microsoft Cognitive Services



Demo

Azure Notebook + Cognitive Services

Custom AI

Cognitive Services



Vision

Computer vision

Face

Emotion

Content Moderator

Video

NEW

Video Indexer

NEW

Cognitive Services Labs



Language

Text analytics

Spell check

Web language model

Linguistic analysis

Translator



Speech

Speaker recognition

Speech



Search

Web search

Image search

Video search

News search

Autosuggest



Knowledge

Academic knowledge

Entity linking service

Knowledge exploration

Recommendations

QnA maker

Cognitive Services



Vision



Language



Speech



Search



Knowledge

Computer vision

Face

Emotion

Content Moderator

Video

NEW

Video Indexer

NEW

Cognitive Services Labs

Text analytics

Spell check

Web language model

Linguistic analysis

Translator

Speaker recognition

Speech

Web search

Image search

Video search

News search

Autosuggest

Academic knowledge

Entity linking service

Knowledge exploration

Recommendations

QnA maker

NEW

Custom

Vision Service

Custom

Language
Understanding

Custom

Speech Service

NEW

Custom

Search

NEW

Custom

Decision Service

Custom Vision

Custom Vision: PlantBot

Microsoft Bot Framework

Adaptive Card Visualizer

+

-

demo.customvision.ai/projects/de49ddbe-30e4-4c51-a923-1fc1034a8a39f/manage

Custom Vision

PlantBot v2

TRAINING IMAGES

PERFORMANCE

PREDICTIONS

Train

Quick Test

Sign out

Refine

Add images

Delete

Tag images

Select all

1 2 3 4 5

Workspace

Iteration History

Tags

All (428)

Cypress (34)

False Lily of the Valley (50)

Fern (31)

Hemlock (39)

Japanese Flowering Cherry (31)

Japanese Maple (41)


Japanese Pine (58)

Japanese Snowball (53)

Rhododendron (40)

Tea Camellia (49)

Untagged (570)



Demo

Custom Vision Services

데이터 수집

크롤링?

노가다
#머리나뿔_손고생

혹시 누군가?

<> Code

! Issues 31

🔗 Pull requests 5

📁 Projects 0

📖 Wiki

📊 Insights

Python Script to download hundreds of images from 'Google Images'. It is a ready-to-run code!

python

python-script

image-download

google-images

image-processing

color-filter

image-dataset

image-database

image-scraper

image-gallery

terminal

command-line

command-line-tool

download-images

🔄 122 commits

🔗 2 branches

🏷 0 releases

👤 22 contributors

Branch: master ▾

New pull request

Create new file

Upload files

Find file

 **buddydvd** and **hardikvasa** For --extract_metadata, skip failed downloads and include saved filen... ...

Latest commi

 docs removed unwanted files from docs google_images_download For --extract_metadata, skip failed downloads and include saved filen... images doc update on new command line arguments tests Adding test validating image download to default location (#92) .gitignore Added a sample config file and made metadata export to a json (#132)

```
!pip install google_images_download
```

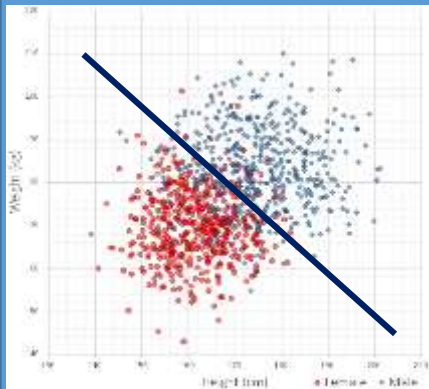
```
!pip install azure-cognitiveservices-vision-customvision
```



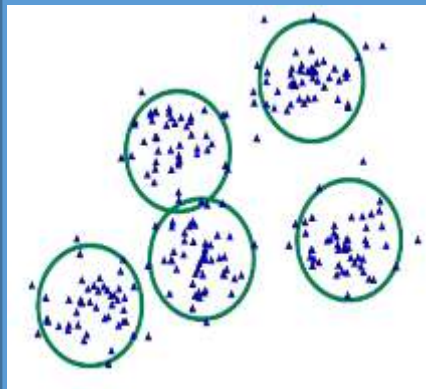
Common Classes of Algorithms

(Supervised | Unsupervised)

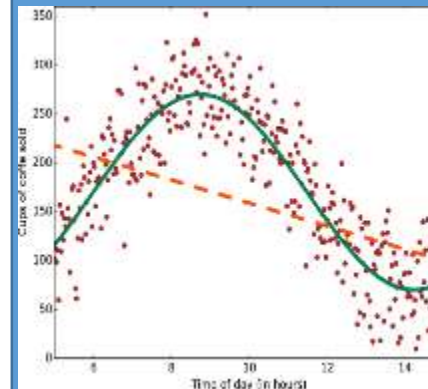
Classification



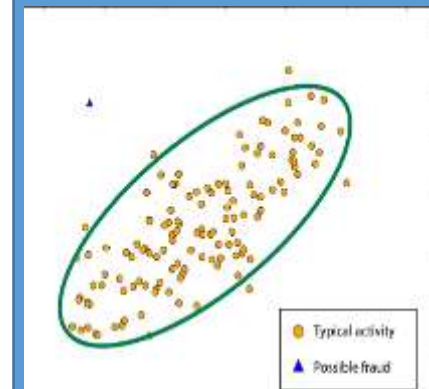
Clustering



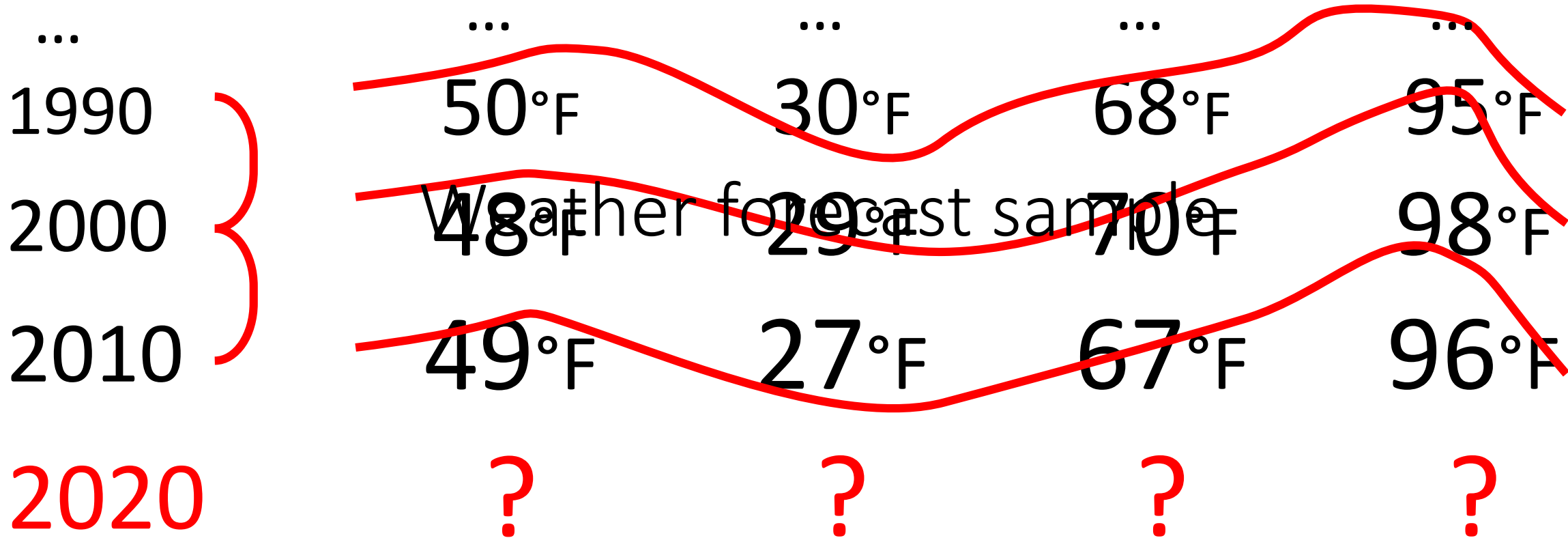
Regression



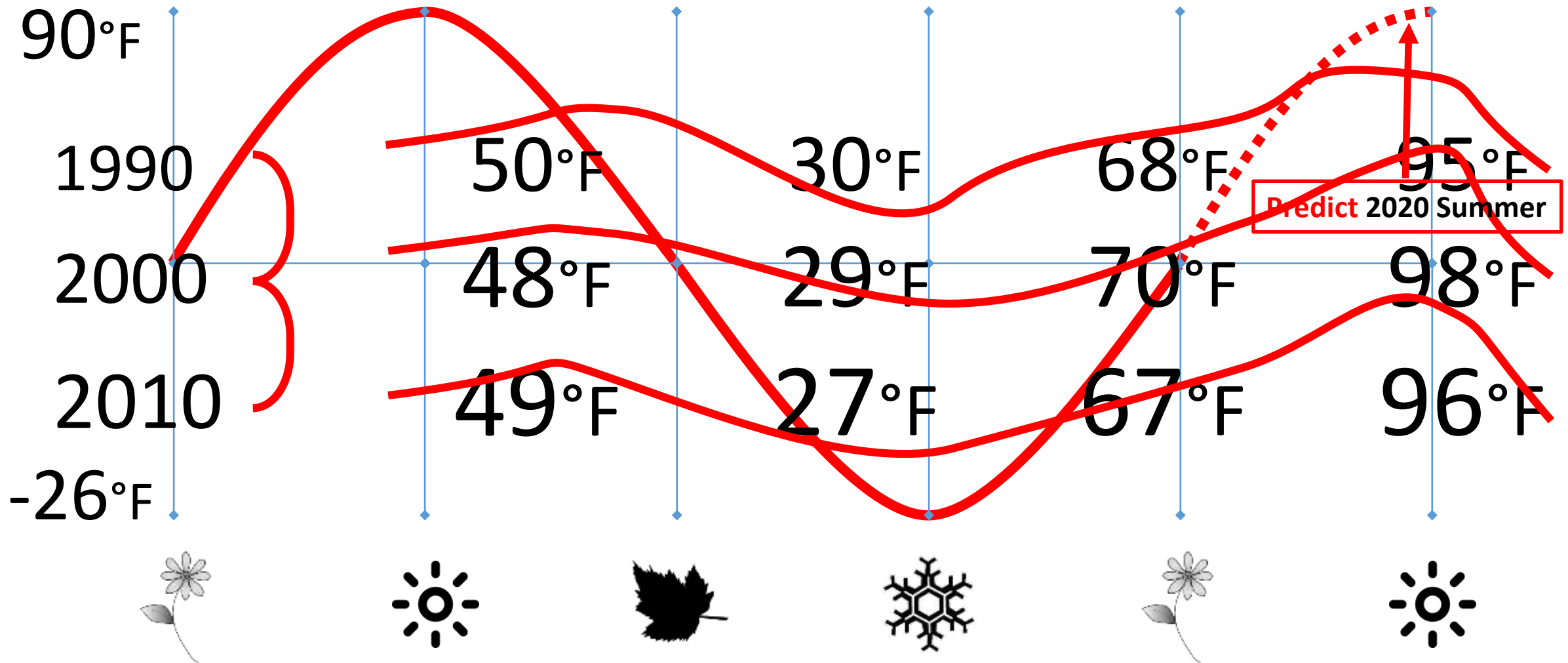
Anomaly Detection



Known data
Model
Unknown data

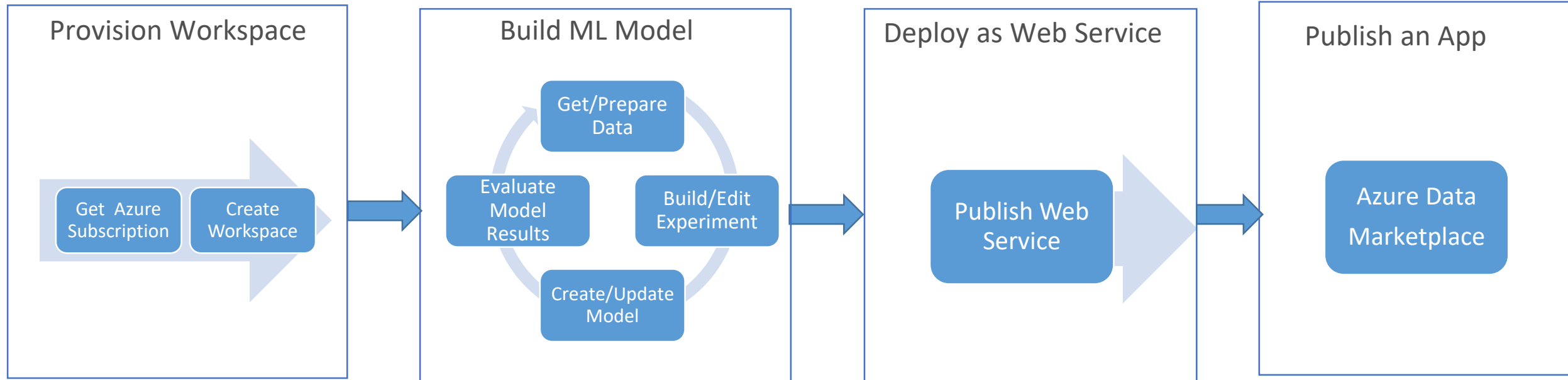


Model (Regression)



Using known data, develop a model to predict unknown data.

Azure Machine Learning Ecosystem



Demo

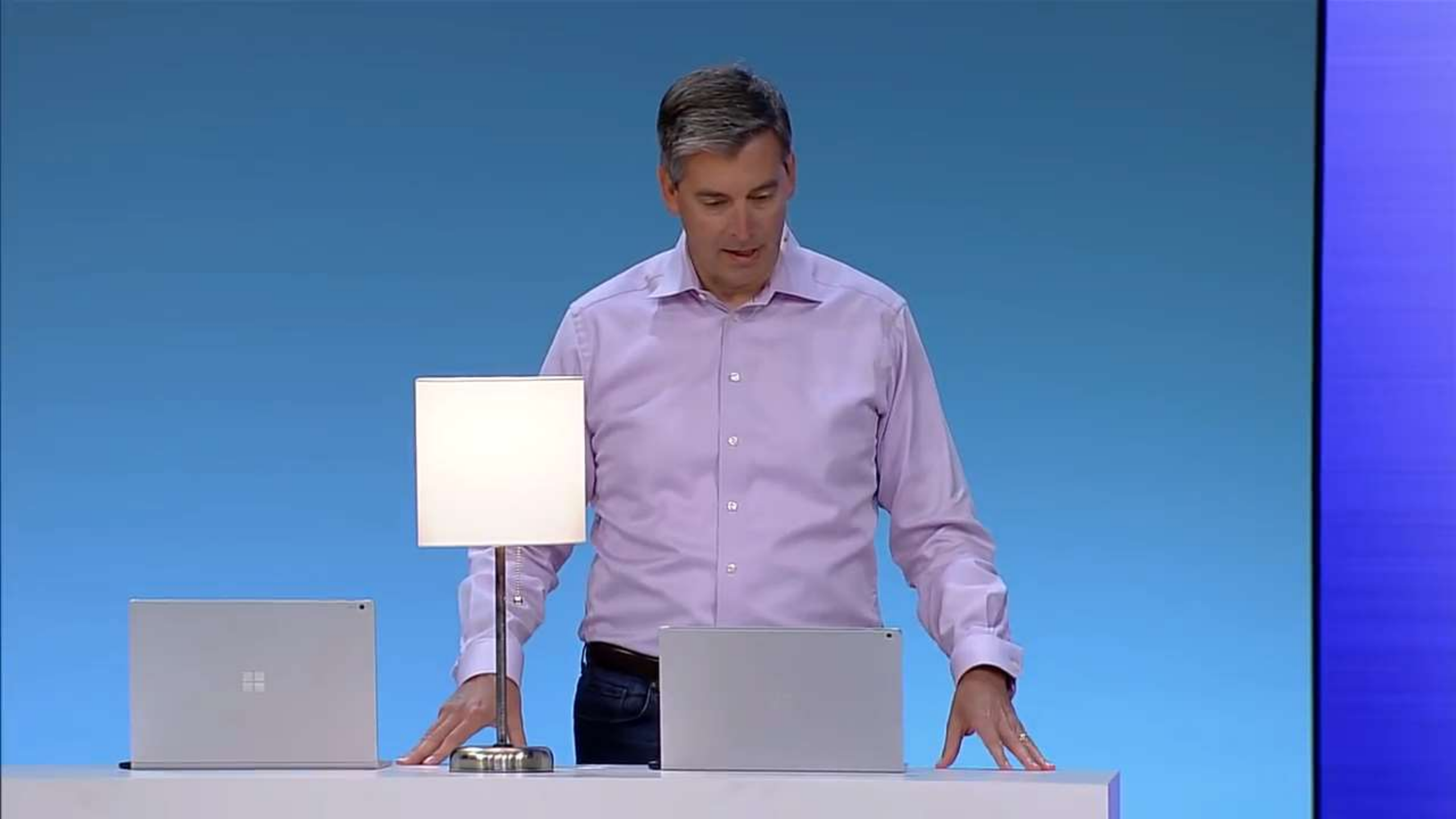
Azure ML Studio

Conversational AI

Cortana & Alexa

https://aka.ms/cortana_alex







Future of Order Taking

drivethru.wav

Start Recognition



CONNECTOR

Bing Speech

STT / TTS

(Speech to Text / Text to Speech)

Bot Framework

Bot Framework
V3, V4

QnA Maker

NLP

(Natural Language Processing)

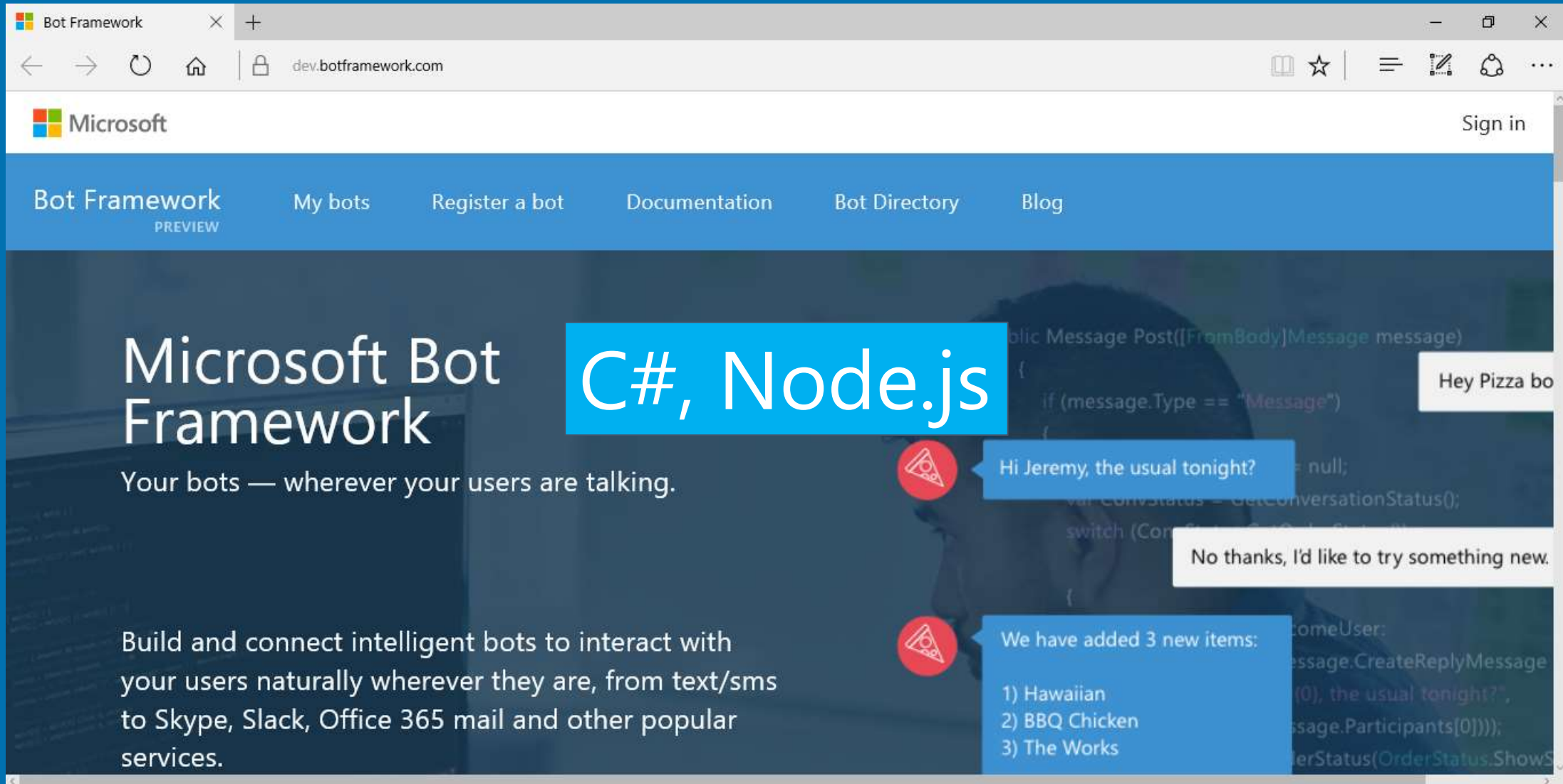
Text Mining

LUIS

Cognitive

Microsoft Bot Framework

<https://dev.botframework.com>



The image is a screenshot of a web browser displaying the Microsoft Bot Framework website. The browser's address bar shows the URL `dev.botframework.com`. The website's header includes the Microsoft logo and a navigation menu with links: Bot Framework, My bots, Register a bot, Documentation, Bot Directory, and Blog. The main content area features the heading "Microsoft Bot Framework" and the tagline "Your bots — wherever your users are talking." Below this, it states: "Build and connect intelligent bots to interact with your users naturally wherever they are, from text/sms to Skype, Slack, Office 365 mail and other popular services." A blue rectangular box is overlaid on the page with the text "C#, Node.js". In the bottom right corner, there is a chatbot conversation interface. It shows a sequence of messages: a user message "Hey Pizza bot", a bot response "Hi Jeremy, the usual tonight?", a user message "No thanks, I'd like to try something new.", and a bot response "We have added 3 new items:" followed by a list: "1) Hawaiian", "2) BBQ Chicken", and "3) The Works". The background of the website features a dark image of a person's face and some faint code snippets.

Bot Framework
PREVIEW

My bots Register a bot Documentation Bot Directory Blog

Microsoft Bot Framework

Your bots — wherever your users are talking.

Build and connect intelligent bots to interact with your users naturally wherever they are, from text/sms to Skype, Slack, Office 365 mail and other popular services.

C#, Node.js

Hey Pizza bot

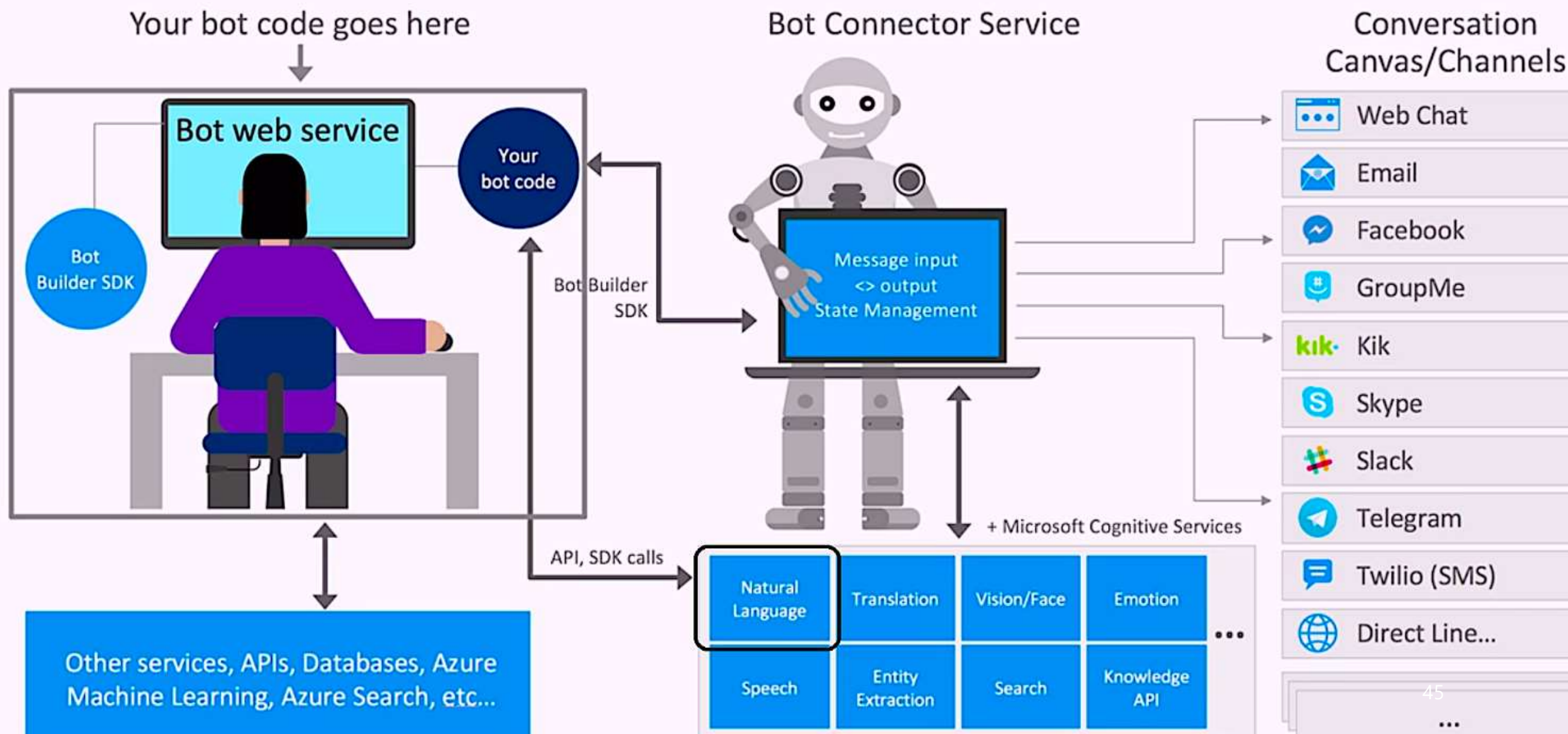
Hi Jeremy, the usual tonight?

No thanks, I'd like to try something new.

We have added 3 new items:

- 1) Hawaiian
- 2) BBQ Chicken
- 3) The Works

Azure Bot Service



From FAQ to Bot in minutes.

Build, train and publish a simple question and answer bot based on FAQ URLs, structured documents or editorial content in minutes.

GET STARTED >



<http://korean.visitseoul.net/faq>

Demo

Chatbot

[개요](#) ▾ [솔루션](#) [제품](#) ▾ [설명서](#) [가격](#) [교육](#) [Marketplace](#) ▾ [파트너](#) ▾ [지원](#) ▾ [블로그](#) [기타](#) ▾

Azure Batch AI ^{미리 보기}

대규모로 간단하게 실험, 심화 학습 및 AI 모델 동시 교육

- ✓ Azure에서 GPU를 사용하여 AI(인공 지능) 모델 학습
- ✓ 동시에 여러 실험을 실행하여 시간 절약
- ✓ 작업 제출 및 필요에 맞게 인프라 관리
- ✓ 자동 크기 조정 및 낮은 우선 순위 가상 컴퓨터를 사용하여 비용 절감
- ✓ 프레임워크 또는 라이브러리 사용
- ✓ 데이터 과학 가상 컴퓨터 시작
- ✓ Docker Hub 또는 Azure Container R

체험하기 >

인기 AI 프레임워크에 대한 레시피 탐색 >

Azure + AI

Cognitive Toolkit

TensorFlow

Caffe

Data platform

Data Lake

NEW

Cosmos DB

SQL Server

Tools

Visual Studio | Azure Machine Learning | Bot Framework

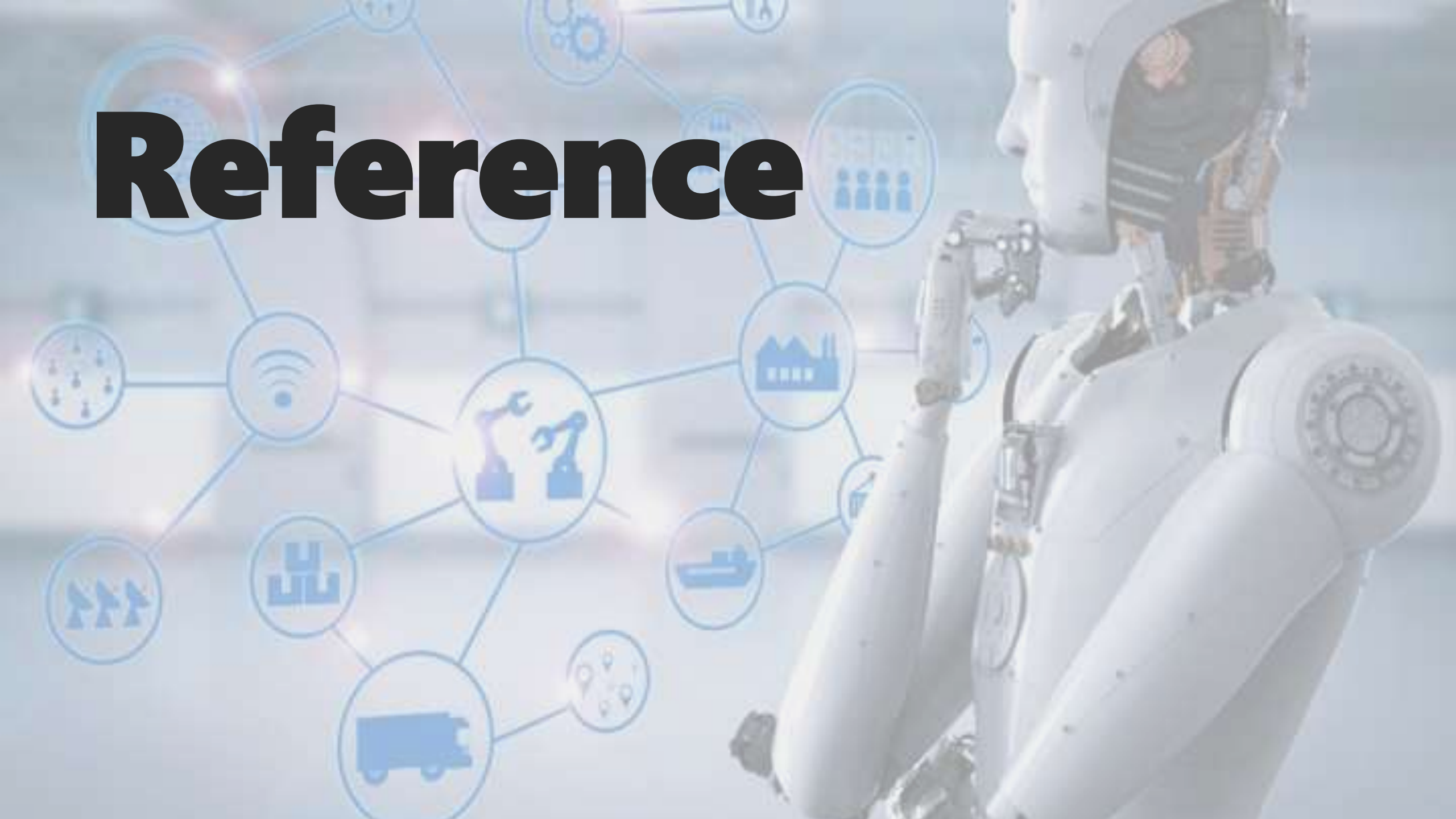
Cognitive Toolkit | TensorFlow | Caffe

as

ve Services

vice

Reference



시작 -

Microsoft Learn

학습에 대한 새로운 접근 방식 소개

경력을 발전시키고 최고의 위치에서 입지를 다지는 데 필요한 기술은 쉽게 얻을 수 있는 것이 아닙니다. 이제 목표를 더 빠르게 달성하는 데 도움이 되는 실습 교육에 대한 더 수익성 높은 방법이 있습니다. **포인트, 수준을 획득하고 더 많은 것을 이루세요!**



추가 출시 예정!



Azure 소개

모듈 - 6 단위

클라우드에서 첫 번째
작하세요.[무료로 학습 시작](#)[학습 경로](#)[실습 교육](#)[무료로 학습](#)[학습 경로 시작](#)

MPP



Data Science

8-12 hours per course

Opportunities for data scientists—one of today's hottest jobs—are rapidly growing in response to the exponential amounts of data being captured and analyzed. Companies hire data scientists to find insights and to solve meaningful business problems.

[View details >](#)



Artificial Intelligence

8-16 hours per course

Artificial Intelligence (AI) will define the next generation of software solutions. Human-like capabilities such as understanding natural language, speech, vision, and making inferences from knowledge will extend software beyond the app.

[View details >](#)



Entry Level Software Development

8-16 hours per course

Nearly all tech that you engage with relies on software. The job outlook for software developers is growing year after year. Simply put, Software Developers are the people bringing the modern world to life.

[View details >](#)

[View all >](#)

도와주십시오

감사합니다

Thank you~!