

# Microsoft Build 2022 After Party

Azure AI - 한층 더 강력해진 New 기능과 Cool 사례 소개

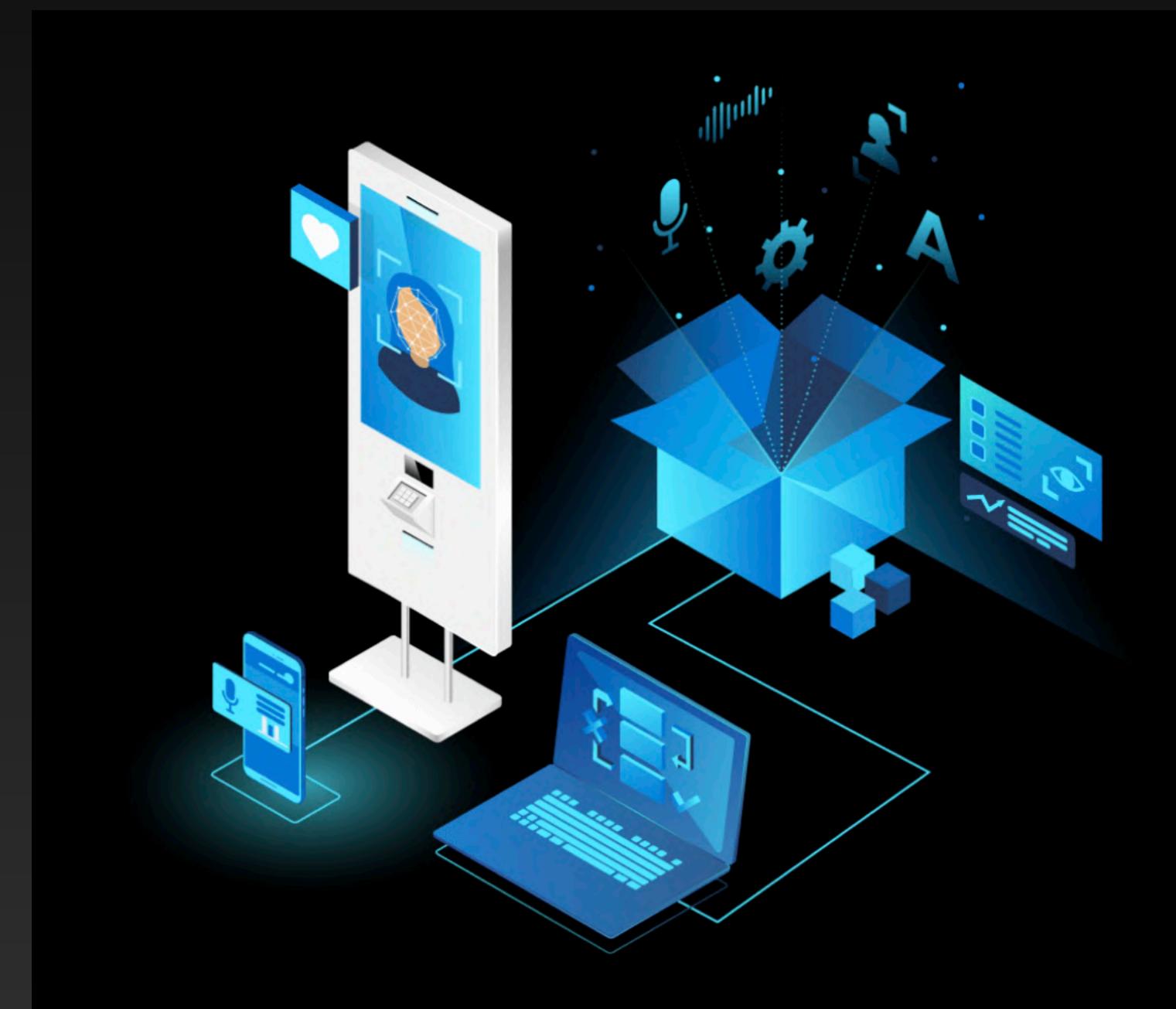
Microsoft AI MVP 전미정  
2022.06.25. 한국 마이크로소프트

# Microsoft Azure AI Platform

## Cognitive Service



## Applied AI



## Machine Learning



보고, 듣고 , 말하고, 읽고  
API 제공

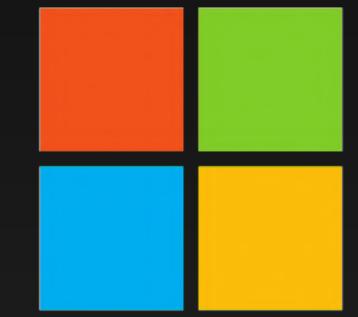
Bot 서비스, 문서 인식, 비디오 인덱서  
비지니스에 바로 적용

Python, R, Java, Julia, C#  
CLI, UI 환경에서 모델 학습/배포

# Azure OpenAI Service



OpenAI



Microsoft

GPT-3

텍스트 분석, 문장 요약, 모델 fine-tuning

Codex

Github Copilot

# GPT-3

## (Generative Pre-trained Transformer )

2020년 06월 베타버전 출시

### 대규모 언어 인공지능

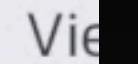
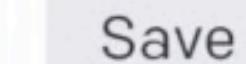
한국어, 중국어, 일본어, 러시아어, 아랍, 등등 multi-language 지원

1750억(175Billion)개 파라미터 가진 딥러닝 모델

45TB 데이터

[Overview](#)[Documentation](#)[Examples](#)[Playground](#) [Upgrade](#)

## Playground

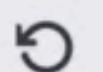
[More examples](#)

행사에 오는 분들께 보내는 환영의 인사:

행사명 : 마이크로소프트 2022 빌드 애프터 파티

행사주최 : 한국 마이크로소프트 MVP

환영의 인사:

[Submit](#)

211





### Q&A

Answer questions based on existing knowle...



### Summarize for a 2nd grader

Translates difficult text into simpler concep...



### Text to command

Translate text into programmatic commands.



### Natural language to Stripe API

Create code to call the Stripe API using nat...



### Parse unstructured data

Create tables from long form text



### Python to natural language

Explain a piece of Python code in human un...



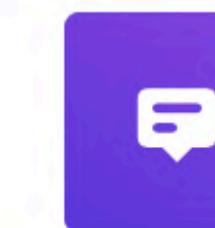
### Calculate Time Complexity

Find the time complexity of a function.



### Grammar correction

Corrects sentences into standard English.



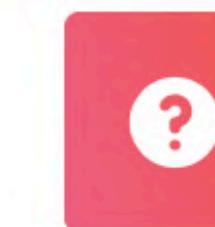
### Natural language to OpenAI API

Create code to call to the OpenAI API usin...



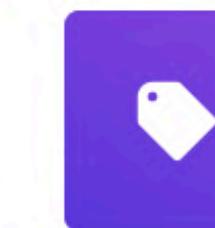
### English to other languages

Translates English text into French, Spanish...



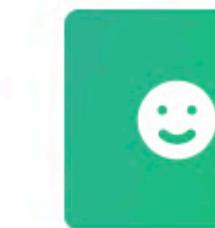
### SQL translate

Translate natural language to SQL queries.



### Classification

Classify items into categories via example.



### Movie to Emoji

Convert movie titles into emoji.



### Translate programming languages

Translate from one programming language ...

# GPT-3

## (Generative Pre-trained Transformer )

2020년 09월 GPT-3, 마이크로소프트 독점 라이센스 계약

## Azure AI Supercomputer

285,000 CPU cores

10,000 GPUs

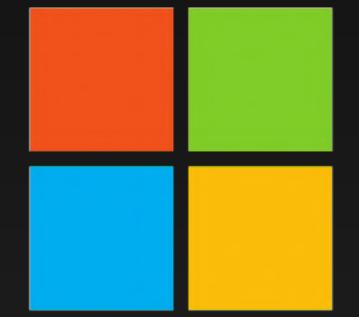
Single system

Jennifer Langston, Microsoft announces new supercomputer, lays out vision for future AI work, 2020.05.19.  
<https://blogs.microsoft.com/ai/openai-azure-supercomputer/>

# Azure OpenAI Service



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Codex

# Azure OpenAI Service



CARMAX

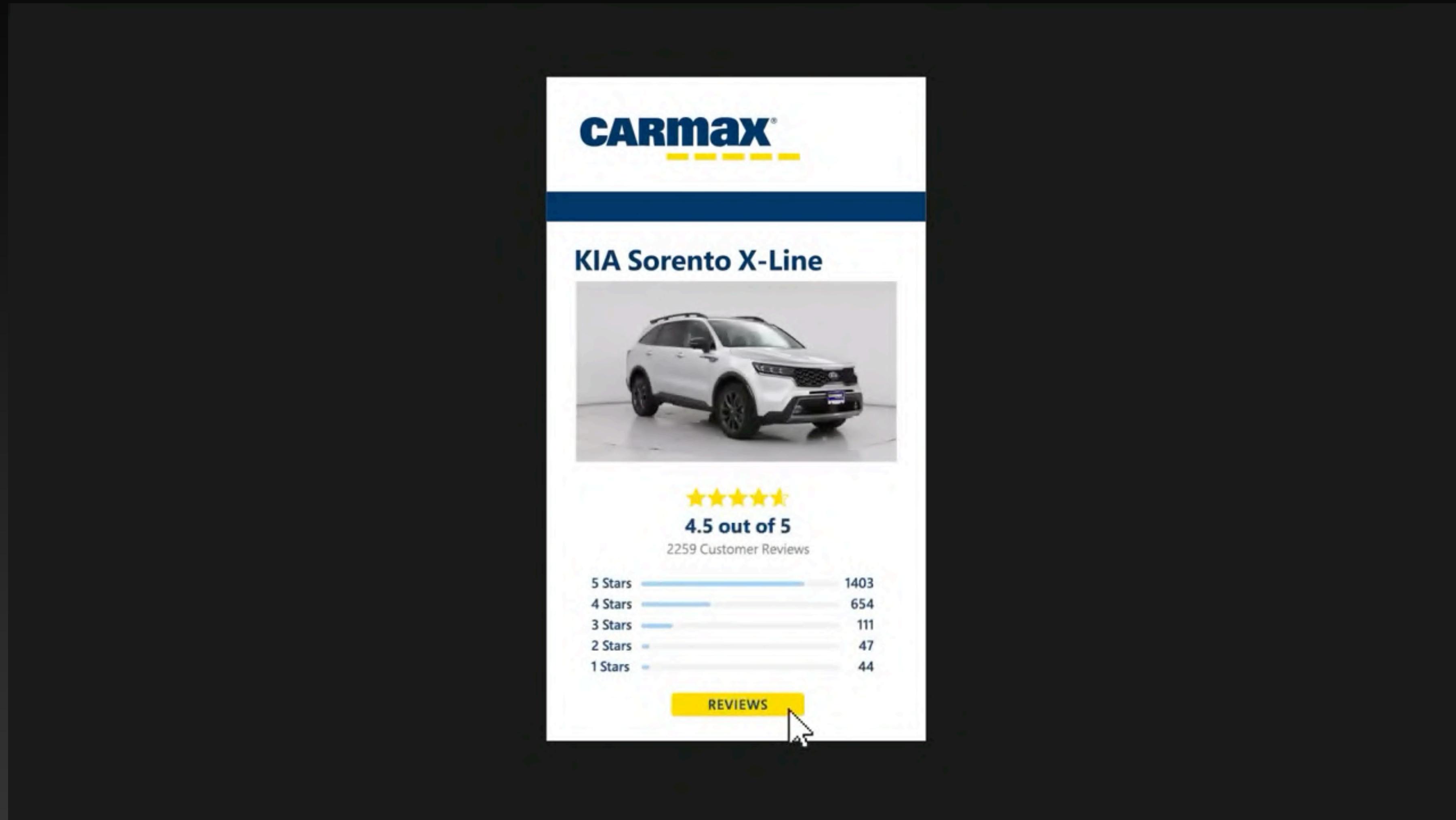
미국 최대 중고차 소매업체

브랜드, 모델, 연식

5,000개 페이지

고객 리뷰

# Azure OpenAI Service



Microsoft, CarMax uses Azure OpenAI Service to summarize customer reviews, 2022.05.22., Youtube  
<https://youtu.be/Yy6hX3HfEMg>

# OpenAI Codex

## Creating a Space Game with OpenAI Codex



[runtime.go](#)[course.rb](#)[time.js](#)[IsPrimeTime.java](#)

```
1 package main
2
3 type Run struct {
4     Time int // in milliseconds
5     Results string
6     Failed bool
7 }
8
9 // Get average runtime of successful |
```

10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23

## Visual Studio Code

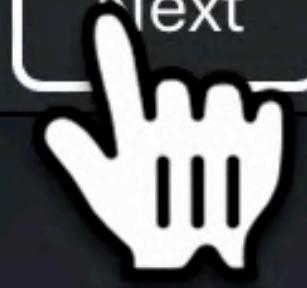
max\_sum\_slice.py

Previous

Next

Accept

```
1 def max_sum_slice(xs):
2     max_sum = 0
3     max_sum_so_far = 0
4     start_index = 0
5     end_index = 0
6     for i in range(len(xs)):
7         max_sum_so_far += xs[i]
8         if max_sum_so_far > max_sum:
9             max_sum = max_sum_so_far
10            start_index = i
11            end_index = i
12        elif max_sum_so_far < 0:
13            max_sum_so_far = 0
14            start_index = i
15        else:
16            end_index = i
17    return (start_index, end_index, max_sum)
```





# GitHub Copilot

Your AI pair programmer

## Start your 60-day free trial

GitHub Copilot uses the Codex AI model to offer coding suggestions.

- ✓ Get code suggestions in more than a dozen coding languages including Python, JavaScript, TypeScript, Go, and Ruby
- ✓ Plugs into IDEs including VS Code, Visual Studio, Neovim, and JetBrains
- ✓ Sign up for an annual subscription and get a free 60-day trial
- ✓ Cancel anytime before the trial ends to avoid getting billed

### Pay frequency after trial

**Monthly plan**  
\$10 /month

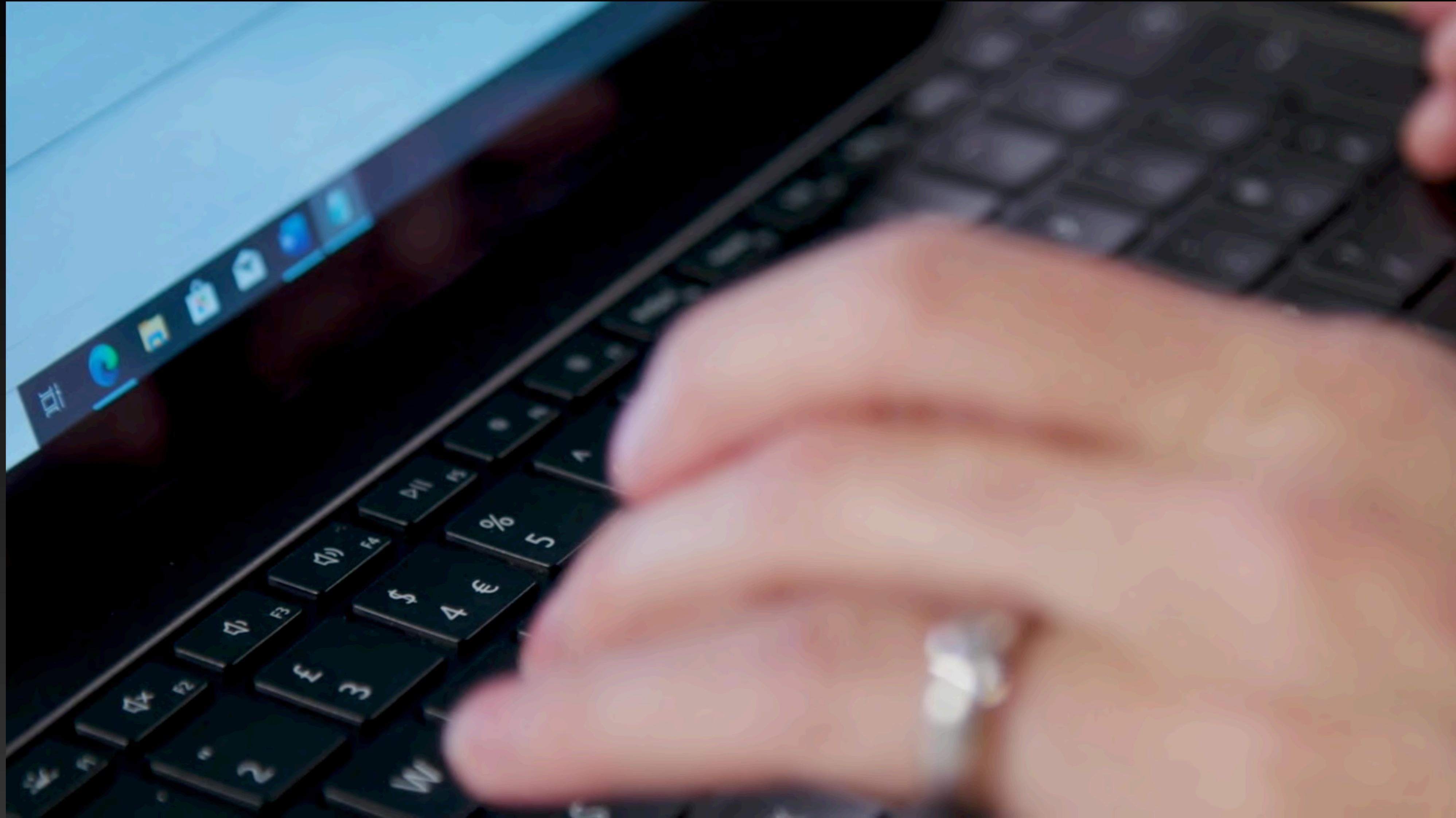
**Yearly plan** 2 months free!  
\$100 /year

<https://github.com/features/copilot/>

2022.06.22. 정식 오픈

- 지원 언어 :  
Python, JavaScript, TypeScript, Go, Ruby,  
Perl, PHP, Swift..
- IDE :  
VS Code, Visual Studio, Neovim, JetBrain

# Codex-CLI for bash/ZShell/PowerShell



The Future of AI Development Tools, with Kevin Scott, May 29, 2022

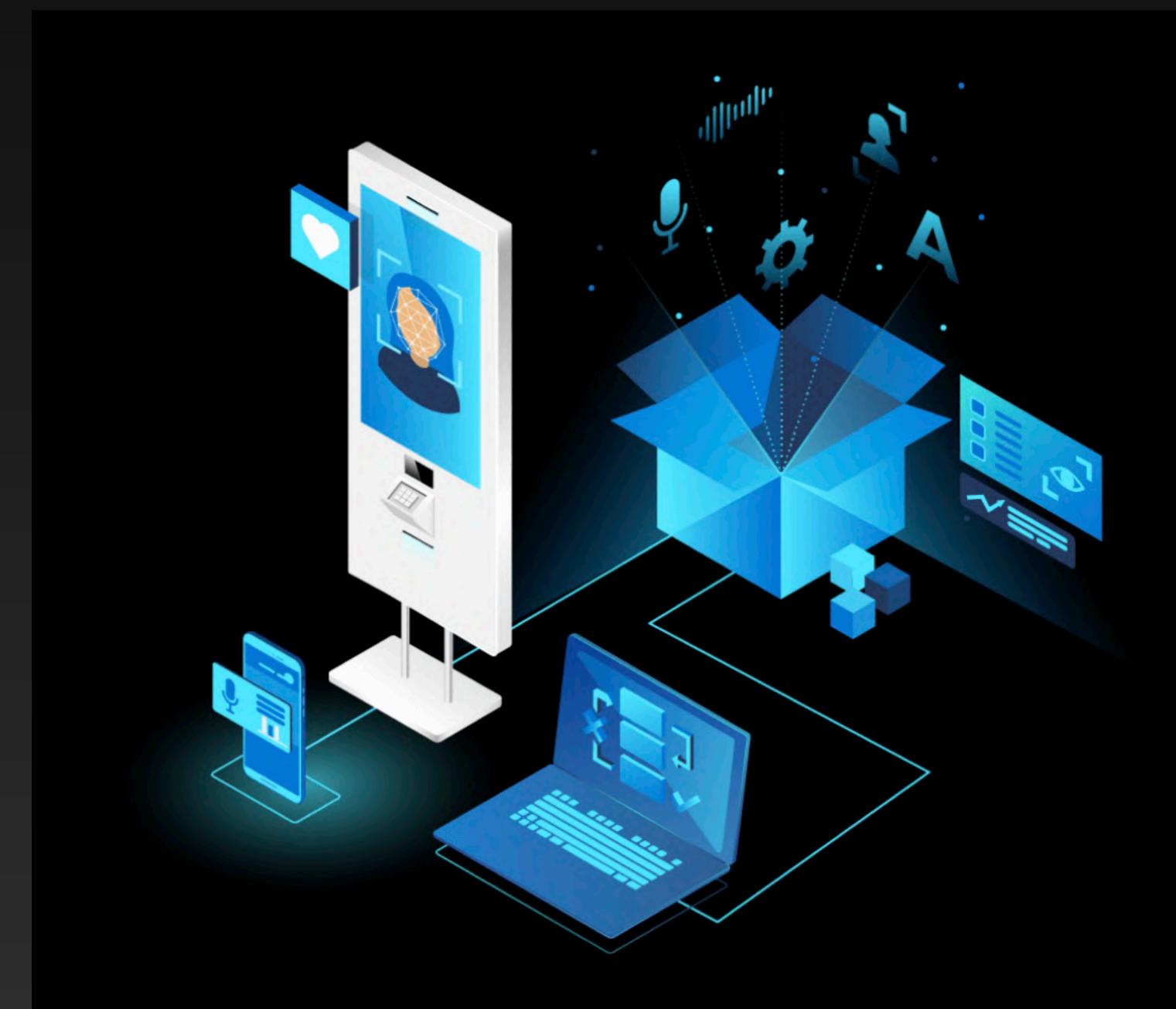
[https://docs.microsoft.com/en-us/events/build-2022/key05-future-of-ai-development-tools/?WT.mc\\_id=AI-MVP-5003262/](https://docs.microsoft.com/en-us/events/build-2022/key05-future-of-ai-development-tools/?WT.mc_id=AI-MVP-5003262/)

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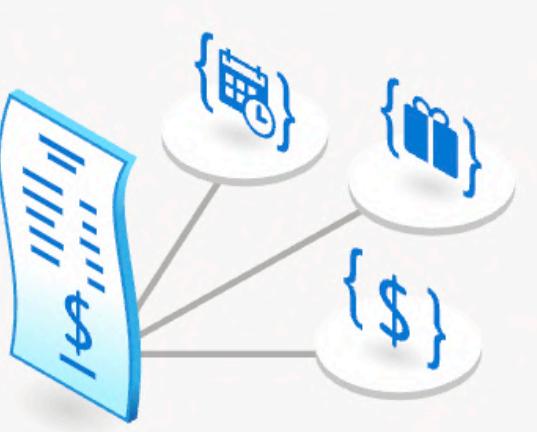
# Azure Form Recognizer



### Invoices

Extract invoice ID, customer details, vendor details, ship to, bill to, total tax, subtotal, line items and more.

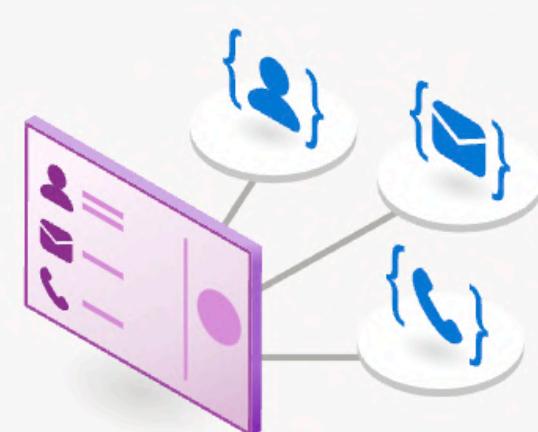
[Try it out](#)



### Receipts

Extract time and date of the transaction, merchant information, amounts of taxes, totals and more.

[Try it out](#)



### Business cards

Extract person name, job title, address, email, company, and phone numbers from business cards.

[Try it out](#)



### Identity documents

Extract name, expiration date, machine readable zone, and more from passports and US driver licenses.

[Try it out](#)



### W-2

Extract employee, employer, wage information, etc. from US W-2 forms.

[Try it out](#)



### Health insurance cards

Extract insurer, member, prescription, group number and more information from US health insurance cards.

[Limited access – sign up.](#)



### Vaccination cards

Extract card holder, health agency and vaccination records from US COVID-19 vaccination cards.

[Limited access – sign up.](#)

2022-06-21 포스번호:0001 거래번호:000197

001 라이제쓰

E 8801117131319 4,500 2 9,000

002 구리금)축축한초코칩

E 8801117149314 7,600 1 7,600

003 롯데)동물카카오케이크

E 8801062632138 3,980 1 3,980

004 롯데)제크

E 8801062009435 2,400 1 2,400

005 실속형더자일리풀

E 8801117650704 5,980 1 5,980

006 롯데우영차

E 8801056076542 1,100 10 10,450

[할인] 550

007 동서)카푸치노바닐라

E 8801037056969 2,680 1 2,144

[할인] 536

008 담터콤부차자동

E 8809257333792 6,300 1 5,040

[할인] 1,260

009 담터콤부차레몬

E 8809257333785 6,300 1 5,040

[할인] 1,260

010 조지아라떼니스타카라멜

E 8801094562120 1,800 2 3,060

[할인] 540

011 조지아라떼니스타크리미

E 8801094552107 1,800 2 3,060

[할인] 540

과세 상품가액

52,504원

부가세

5,250원

소 계 금 액

11품목

23건

57,754원

잔전 할인

4원

할인합계

4,686원

합 계

57,750원

## Items



Price      Quantity      TotalPrice

1 4500 2 9000  
98.80% 98.70% 98.80%

2 7600 7600  
98.80% 98.80%

3 3980 1 3980  
98.80% 98.70% 98.80%

4 2400 1 2400  
98.80% 98.70% 98.80%

5 5980 5980  
98.80% 98.80%

RATI ✓

[ 호흡기클리닉 문 ]

환자명 : 전미경

구분	내용	결정
코로나19 역학적 연관성	14일 이내 확진환자 접촉	<input checked="" type="checkbox"/> 아니오 <input type="checkbox"/>
	14일 이내 해외방문이력	<input type="checkbox"/> 아니오 <input checked="" type="checkbox"/>
	14일 이내 국내집단발생과 역학적 연관성	<input type="checkbox"/> 아니오 <input checked="" type="checkbox"/>
증상 상세내용	현재 나타나는 증상은?	<input type="checkbox"/> 발열(37.5°C 이상) <input type="checkbox"/> 기침 <input type="checkbox"/> 가래 <input type="checkbox"/> 콧물 또는 코막힘 <input checked="" type="checkbox"/> 인후통 <input type="checkbox"/> 호흡곤란 <input type="checkbox"/> 구토 <input type="checkbox"/> 설사 <input type="checkbox"/> 복통 <input checked="" type="checkbox"/> 근육통 <input type="checkbox"/> 기타 ( )
	증상이 언제부터 시작되었는지?	( 하루전 )
	복용한 약이 있는지?	( + )
	중증기저질환인지?	<input type="checkbox"/> 아니오 <input checked="" type="checkbox"/>
	만성호흡기질환인지?	<input type="checkbox"/> 아니오 <input checked="" type="checkbox"/>
	기타 필요한 내용	( )

※ 본인은 개인정보 수집.이용 및 선택 개인정보 수집.이용에 동의합니다.

※ 환자 본인이 만14세 미만의 경우에는 법정대리인이 작성합니다.

2022년 3월 24일

환자본인(또는 법정대리인) 전미경 (차필상장)



Form Recognizer Studio &gt; Layout

## Layout Service resource: FormRecognizier-mj

+ Add



Analyze



API version: 2022-06-30-preview



Content Result Code

Text Tables Selection marks

## Paragraph

1

## Paragraph

RAT[

## Paragraph

진료[

## Paragraph

51

## Title

[ 호흡기클리닉 문진 체크리스트 ]

## Paragraph

환자명: 전미정

## Paragraph

생년월일: 19 년

## Paragraph

[ 호흡기클리닉 문진 체크리스트 ]

환자명 : 전미정

구분	14일 이내 확진환자 접촉	14일 이내 해외방문이력	14일 이내 국내집단발생과 역학적 연관성	결정
코로나19 역학적 연관성	예 <input checked="" type="checkbox"/> 아니오 <input type="checkbox"/>	예 <input type="checkbox"/> 아니오 <input checked="" type="checkbox"/>	예 <input type="checkbox"/> 아니오 <input checked="" type="checkbox"/>	하나라도 '예'인 경우 자체 검체 채취 수행 또는 선별진료소 안내
	<p>현재 나타나는 증상은?</p> <ul style="list-style-type: none"><li><input type="checkbox"/> 발열(37.5°C 이상)</li><li><input type="checkbox"/> 기침 <input type="checkbox"/> 가래</li><li><input type="checkbox"/> 코물 또는 코막힘</li><li><input checked="" type="checkbox"/> 인후통</li><li><input type="checkbox"/> 호흡곤란</li><li><input type="checkbox"/> 구토 <input type="checkbox"/> 설사</li><li><input type="checkbox"/> 복통 <input checked="" type="checkbox"/> 근육통</li><li><input type="checkbox"/> 기타 ( )</li></ul>			
	<p>증상이 언제부터 시작되었는지? ( )</p> <p>복용한 약이 있는지? ( )</p>			
증증기저질환인지?		예 <input type="checkbox"/> 아니오 <input checked="" type="checkbox"/>	증증 또는 만성 호흡기질환인 경우 기존 병원 방문 안내	
만성호흡기질환인지?		예 <input type="checkbox"/> 아니오 <input checked="" type="checkbox"/>	( )	
-- 끝 --				

# Azure Form Recognizer



주어진 시간은 단 2개월!

2021년 9월 캐나다 정부

연방 규제를 받는 회사 전 직원 코로나19 백신 접종 의무화

# Azure Form Recognizer

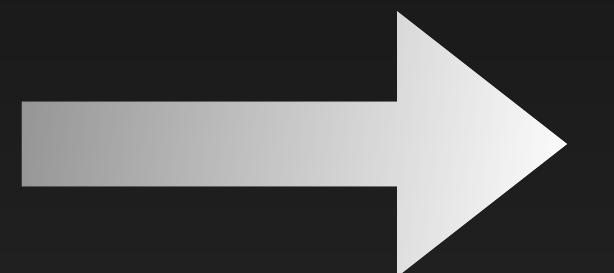
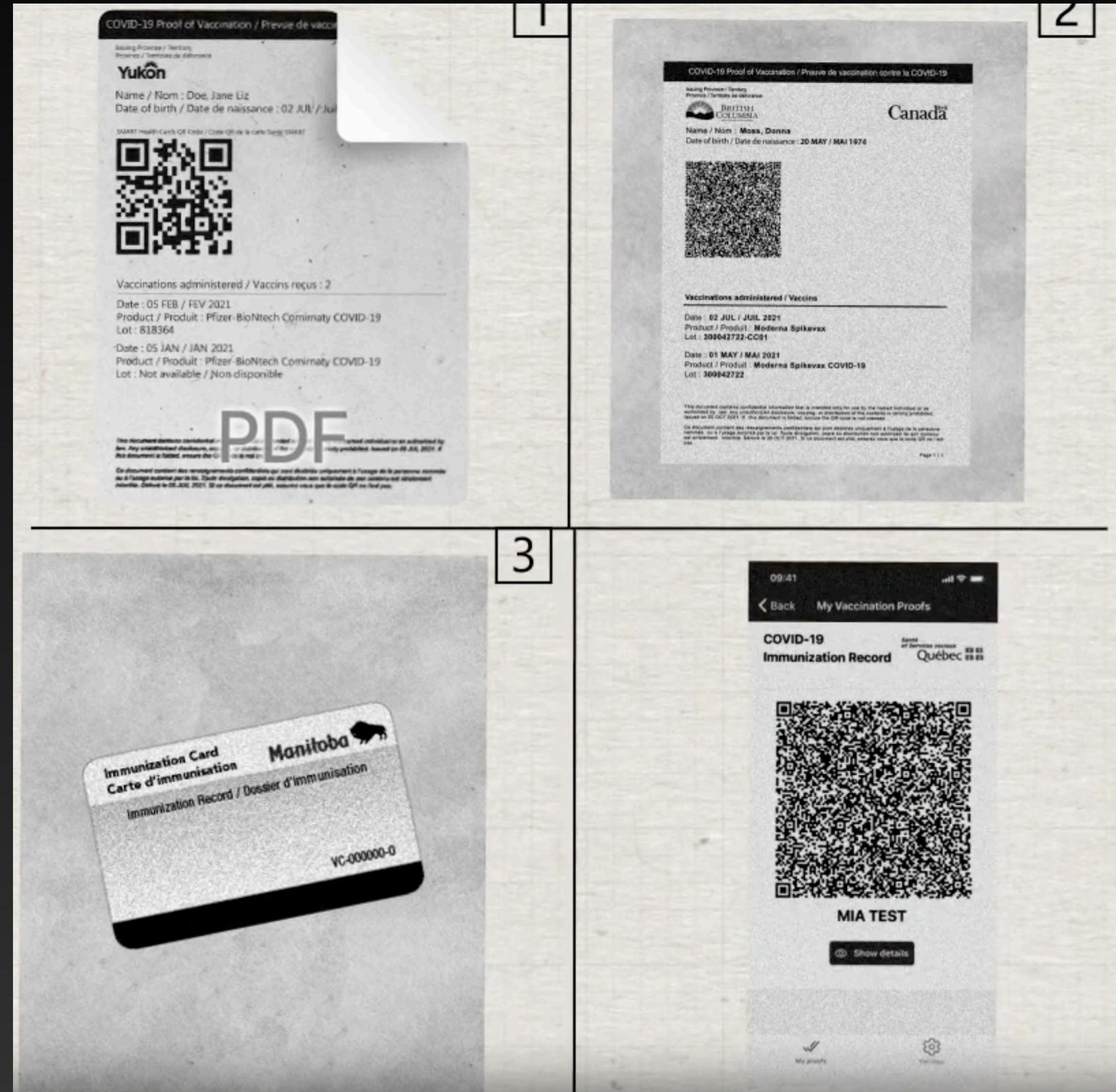
에어캐나다 전 세계 직원 30,000명 이상

영어, 프랑스어, 독일어, 스페인어

화이자, 모더나, 아스트라제네카

나라와 지역, 주마다 서로 다른 백신 포맷

# Azure Form Recognizer



The screenshot shows the Azure Form Recognizer interface with the following components:

- Header:** "COVID-19 Proof of Vaccination / Preuve de vaccination contre la COVID-19".
- Card Holder:** A placeholder for the card holder's information.
- Health Agency:** A placeholder for the health agency's information.
- Vaccination Record:** A placeholder for the vaccination record.
- Extracted Data:** A table showing extracted data from the card, including:
  - Name: Doe, Jane Liz
  - Date of birth: 02 JUL / Juillet 1990
  - Product: Pfizer-BioNTech Comirnaty COVID-19
  - Lot: 818364
  - Date: 05 FEB / FEV 2021
  - Product: Pfizer-BioNTech Comirnaty COVID-19
  - Lot: Not available / Non-disponible
  - Date: 05 JAN / JAN 2021
  - Product: Pfizer-BioNTech Comirnaty COVID-19
  - Lot: Not available / Non-disponible
- Icons:** Icons representing a calendar, a person, and a medical cross.
- Text:** "Vaccination cards" and "Extract card holder, health agency and vaccination records from US COVID-19 vaccination cards."
- Call-to-action:** "Limited access – sign up." with a blue shield icon.

Air Canada flies high with AI from Azure Form Recognizer, 2022.05.24.  
<https://customers.microsoft.com/en-us/story/1505667713938806113-air-canada-travel-transportation-azure-form-recognizer>

# Azure Form Recognizer

데이터 과학자 2명, 데이터 엔지니어 1명, 시스템 통합자 1명

---

1. 유효한 증명서 형식인가?
2. 유효한 백신 접종 정보(종류, 날짜)가 기입되어 있는가?
3. 증명서의 이름과 에어캐나다 직원 DB 이름이 동일한가?

1달만에 50% 이상 문서 처리

# Azure Machine Learning



## Automated ML

Automatically train and tune a model using a target metric.

**Start now**

### Classification

To predict one of several categories in the target column. yes/no, blue, red, green.

분류/회귀/예측

### Regression

To predict continuous numeric values.



### Time series forecasting

To predict values based on time.

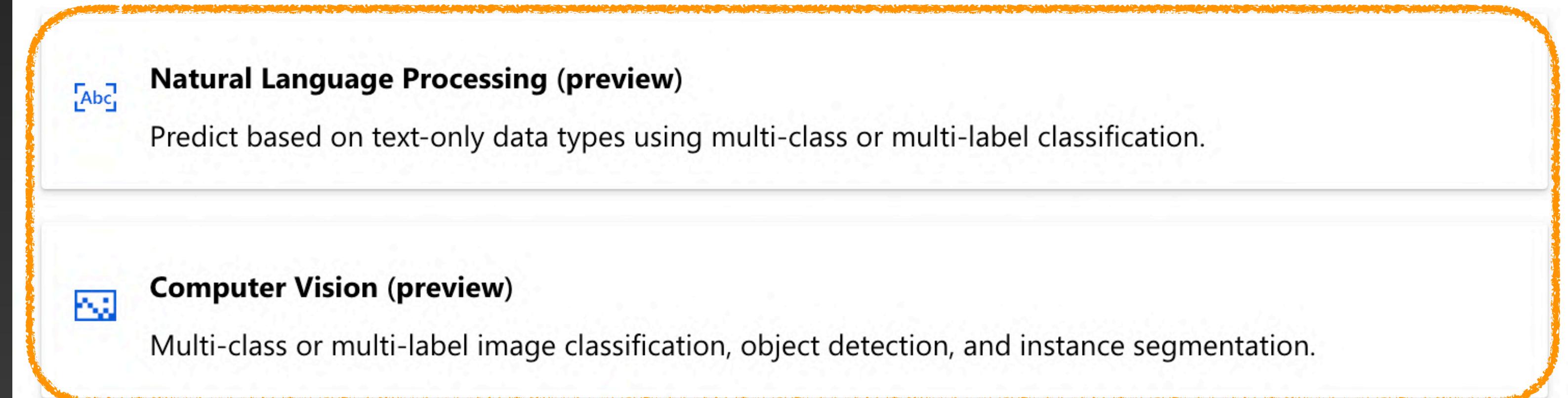
+ 자연어 처리/컴퓨터 비전

### Natural Language Processing (preview)

Predict based on text-only data types using multi-class or multi-label classification.

### Computer Vision (preview)

Multi-class or multi-label image classification, object detection, and instance segmentation.



# Azure Machine Learning



## Automated ML

Automatically train and tune a model using a target metric.

**Start now**

### good\_screw\_d4vkyyymy

Completed

Overview Model Explanations (preview) Metrics Data transformation (preview)

Refresh Deploy Download Explain model View generated code (preview)

Properties

Status  
Completed

Created on  
Jun 24, 2022 5:18 PM

Start time  
Jun 24, 2022 6:26 PM

Duration  
8m 34.13s

Compute duration  
8m 34.13s

AutoML —> 학습 코드 생성(.py)

# Azure Machine Learning

## Model summary

Algorithm name  
MinMaxScaler, ExtremeRandomTrees

## Hyperparameters

[View hyperparameters](#)

Normalized root mean squared error

0.01707 [View all other metrics](#)

## Sampling

100.00 % [\(i\)](#)

## Registered models

No registration yet

## Deploy status

No deployment yet

```
def generate_preproc
    from sklearn.pre

    preproc = MinMax
        copy=True,
        feature_rang
    )

    return preproc
```

```
def generate_algorithm_config():
    from sklearn.ensemble import ExtraTreesRegressor

    algorithm = ExtraTreesRegressor(
        bootstrap=True,
        ccp_alpha=0.0,
        criterion='mse',
        max_depth=None,
        max_features=0.7,
        max_leaf_nodes=None,
        max_samples=None,
        min_impurity_decrease=0.0,
        min_impurity_split=None,
        min_samples_leaf=0.003466237459044996,
        min_samples_split=0.0018261584682702607,
        min_weight_fraction_leaf=0.0,
        n_estimators=25,
        n_jobs=-1,
        oob_score=False,
        random_state=None,
        verbose=0,
        warm_start=False
    )

    return algorithm
```

# Azure Machine Learning

## 책임감 있는 AI, Responsible AI(RAI)



공정성



안정성  
안전성



개인 정보 보호  
보안



포용성



**Transparency** 투명성



**Accountability** 책임성

# Azure Machine Learning

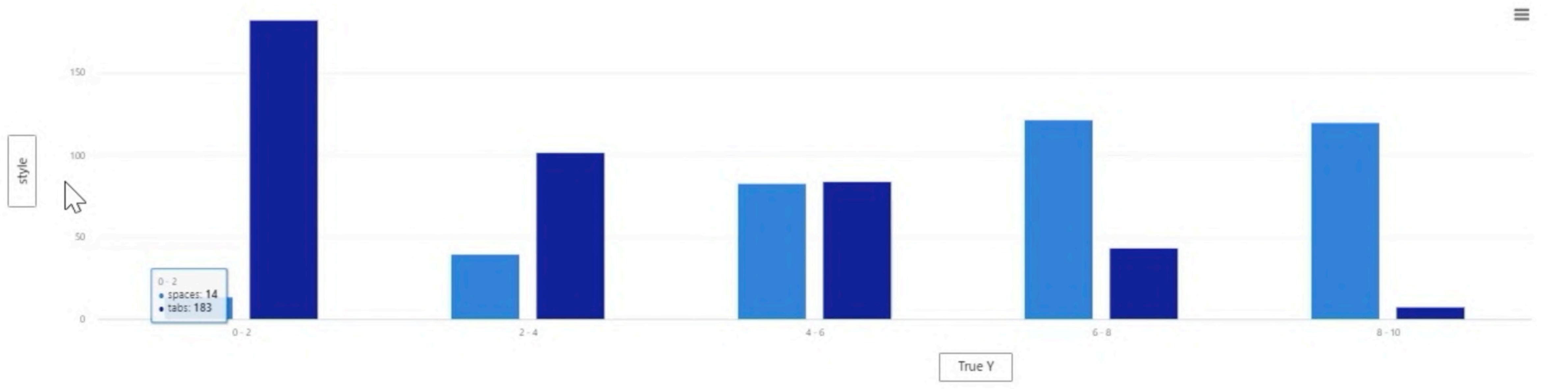
## Responsible AI Dashboard

### Data explorer

Create dataset cohorts to analyze dataset statistics along filters such as predicted outcome, dataset features and error groups. Learn about the over/under presentation in your dataset.

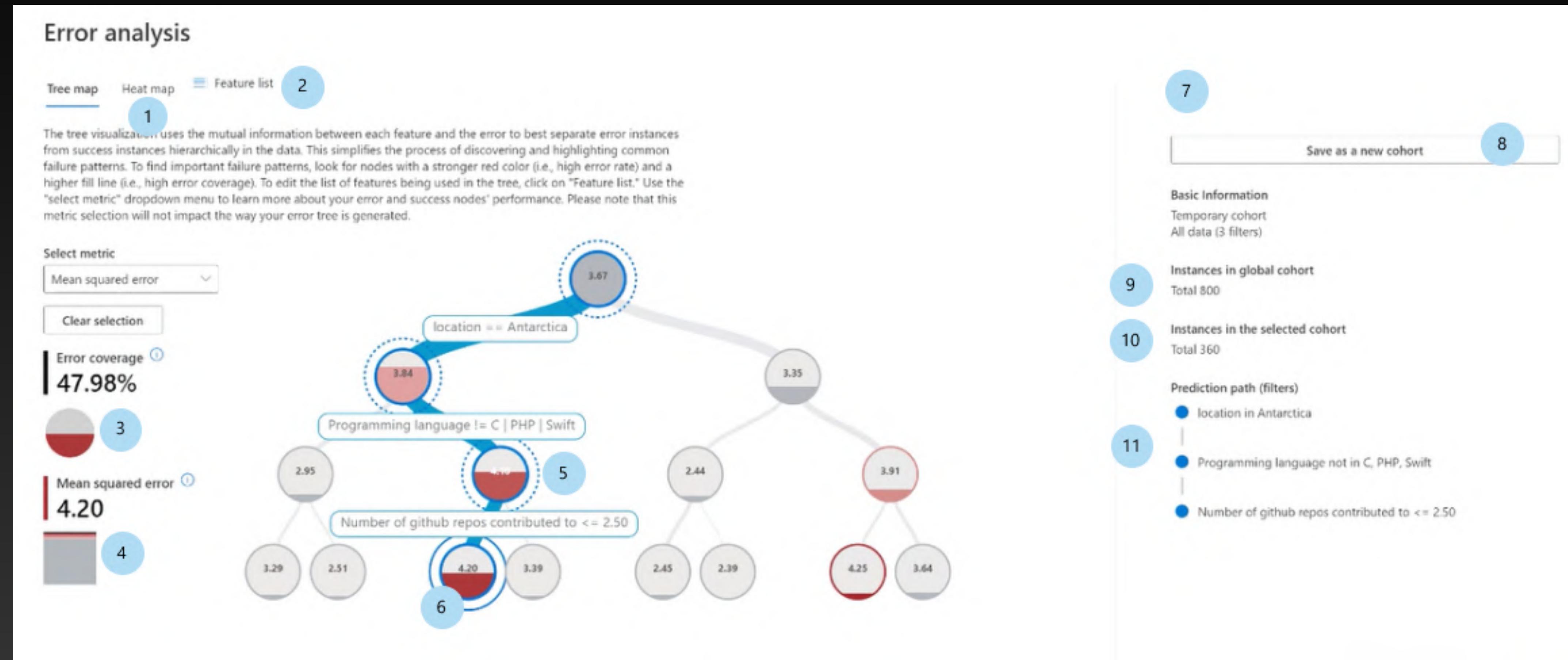
Select a dataset cohort to explore

All data



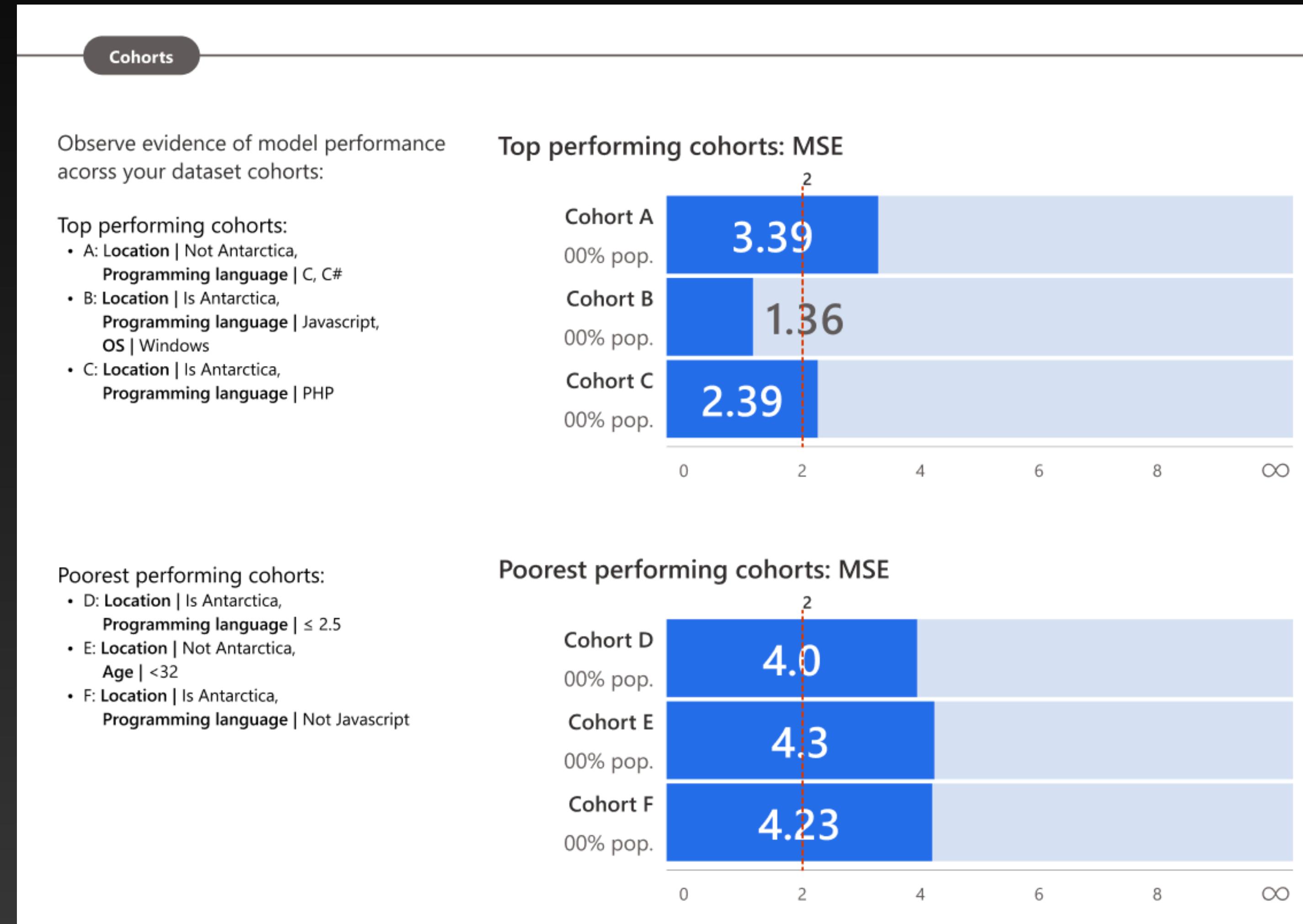
# Azure Machine Learning

## Responsible AI Dashboard



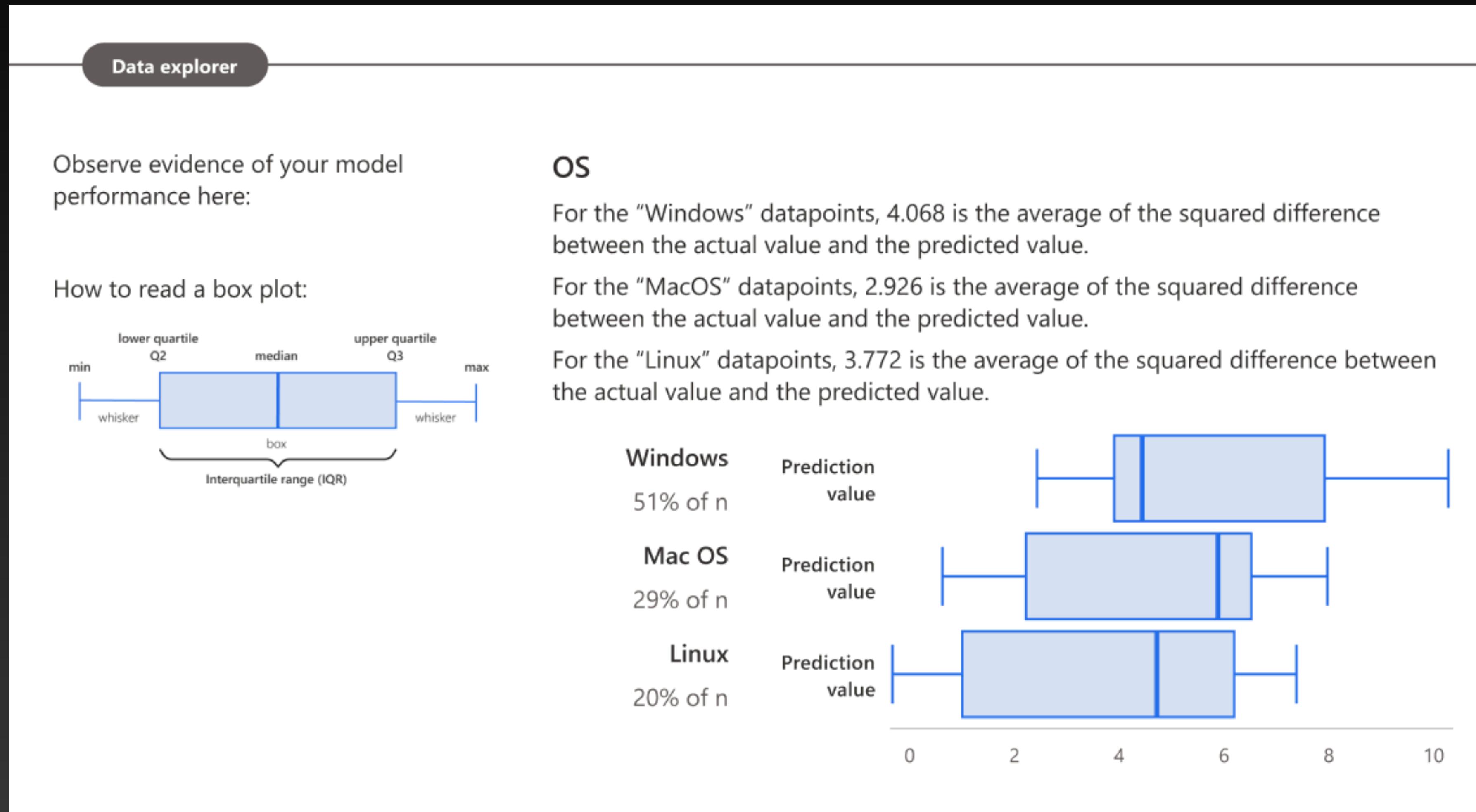
# Azure Machine Learning

## Responsible AI Dashboard



# Azure Machine Learning

## Responsible AI Dashboard



# Microsoft 2022 Build AI

GPT-3

Codex

Form Recognizer

AutoML

RAI

CLI v2, SDK v2

# Microsoft + Partners

Meta

클라우드 공급업체 Azure

AMD

대규모 모델 배포

최초로 M200 GPU 사용

Azure 슈퍼 컴퓨팅 사용 확대

PyTorch 개발 가속

Hugging Face

Azure ML service 연계

빠른 모델 배포/확장

PyTorch 최적화 on AMD

# Microsoft Build 2022



200+ 세션

30+ AI 세션

Into Focus 라이브 세션



Microsoft Build Into Focus: AI, with Eric Boyd, Seth Juarez, 2022.05.26.

[https://docs.microsoft.com/en-us/events/build-2022/key06-microsoft-build-into-focus-ai/?WT.mc\\_id=AI-MVP-5003262](https://docs.microsoft.com/en-us/events/build-2022/key06-microsoft-build-into-focus-ai/?WT.mc_id=AI-MVP-5003262)

MS Build Exclusive Viewing Party - Option 2: AI Into Focus

MS Build | Into Focus: AI | AUDIENCE REHEARSAL

28:19

People Chat Reactions Apps More Camera Mic Share Leave

Meeting chat

Priyanka Shah (Guest) 12:31 AM  
nope

ninevincentg (Guest) 12:31 AM  
Hi, everyone! I can't hear anything too.

Mattias Lögdberg 12:32 AM  
Guess no one is talking  
heard the unmute just now

PJ Berish (MIGHTY MEDIA STUDIOS LLC) 12:32 AM  
Standby, I will touch base soon.

Priyanka Shah (Guest) 12:32 AM

Type a new message

05월 19일 미팅

영상 사전 공유

내용 피드백 & 질문 사항 논의

05월 24일 리허설

MVP 역할

화면/사운드 점검

# Microsoft Build 2022

전 세계 사람들의 노력이 만들어낸 행사

나도 (살짝) 참여할 수 있어서 더욱 즐거웠던 행사

After Party 

지금 이 자리에 계신 모든 분과 함께하는 행사