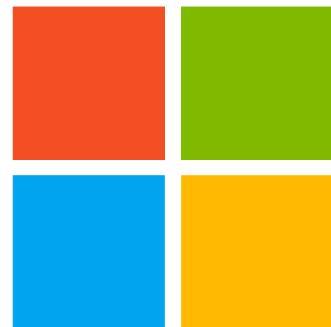






CLOUDMATE
Azure Expert Group



Microsoft

Node.js & React로 만들어보는 AI 웹앱 (feat. Cognitive Services)

최영락

Developer Product Marketing Manager, Microsoft



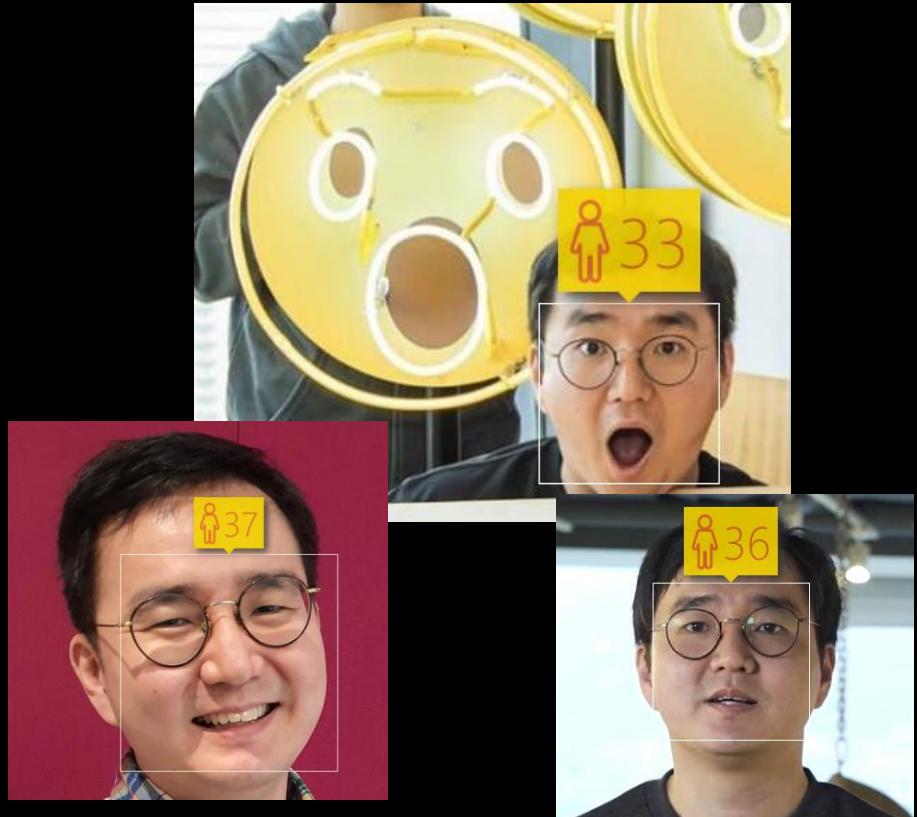
#GlobalAzure

최영락

Developer Product Marketing
Manager (a.k.a. Field Developer
Relations) at Microsoft APAC
(based in Korea)



@ianychoi

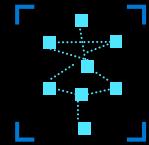


Agenda

- Azure AI & Cognitive Services (인지 서비스)
- Computer Vision 소개
- 아이디어 실현을 위한 MVP 구현하기
- 데모: Node.js & React로 AI 웹앱 구현하기
- 맷음말

Azure Cognitive Services

미리 트레이닝이 이루어진 AI를 가장 포괄적으로 제공



시각

Computer Vision

Custom Vision

Face

Form Recognizer

Video Indexer



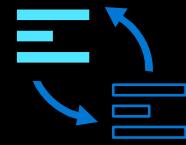
Speech

Speech to Text

Text to Speech

Speech Translation

Speaker Recognition



언어

Immersive Reader (몰입형 리더)

Language Understanding (언어 이해)

QnA Maker

Text Analytics (텍스트 분석)

Translator (변환기)



의사 결정

Anomaly Detector

Personalizer

Content Moderator

사용자 데이터로 모델을 커스터마이징 지원

사람과 같은 기능을 사용한 앱 향상



대화형 인터페이스 (텍스트 또는 음성)



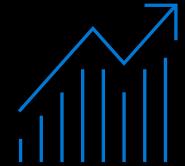
사진 캡션 (제목) / 콘텐츠별 사진 검색



사용자별 행동/선후에 따른 UI 커스터마이징

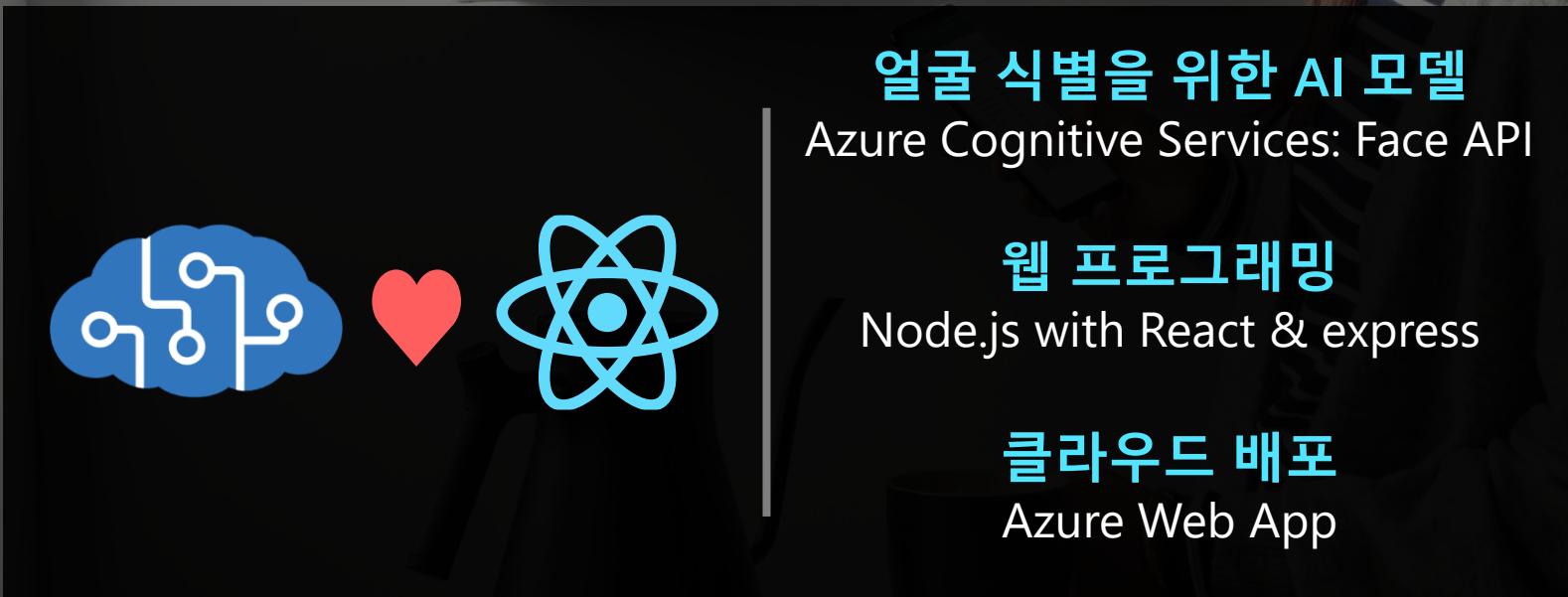


텍스트 또는 음성을 사용자 언어로 번역



센서 로그에서 급증 또는 기타 비정상적인 동작 식별

[데모 셋업] Cognitive Services 웹앱: Face API & React



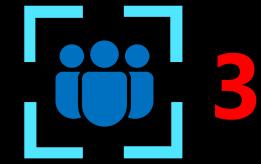
데모 소스 코드 위치: <https://aka.ms/ga2021kr/ianychoi>

Computer Vision 소개

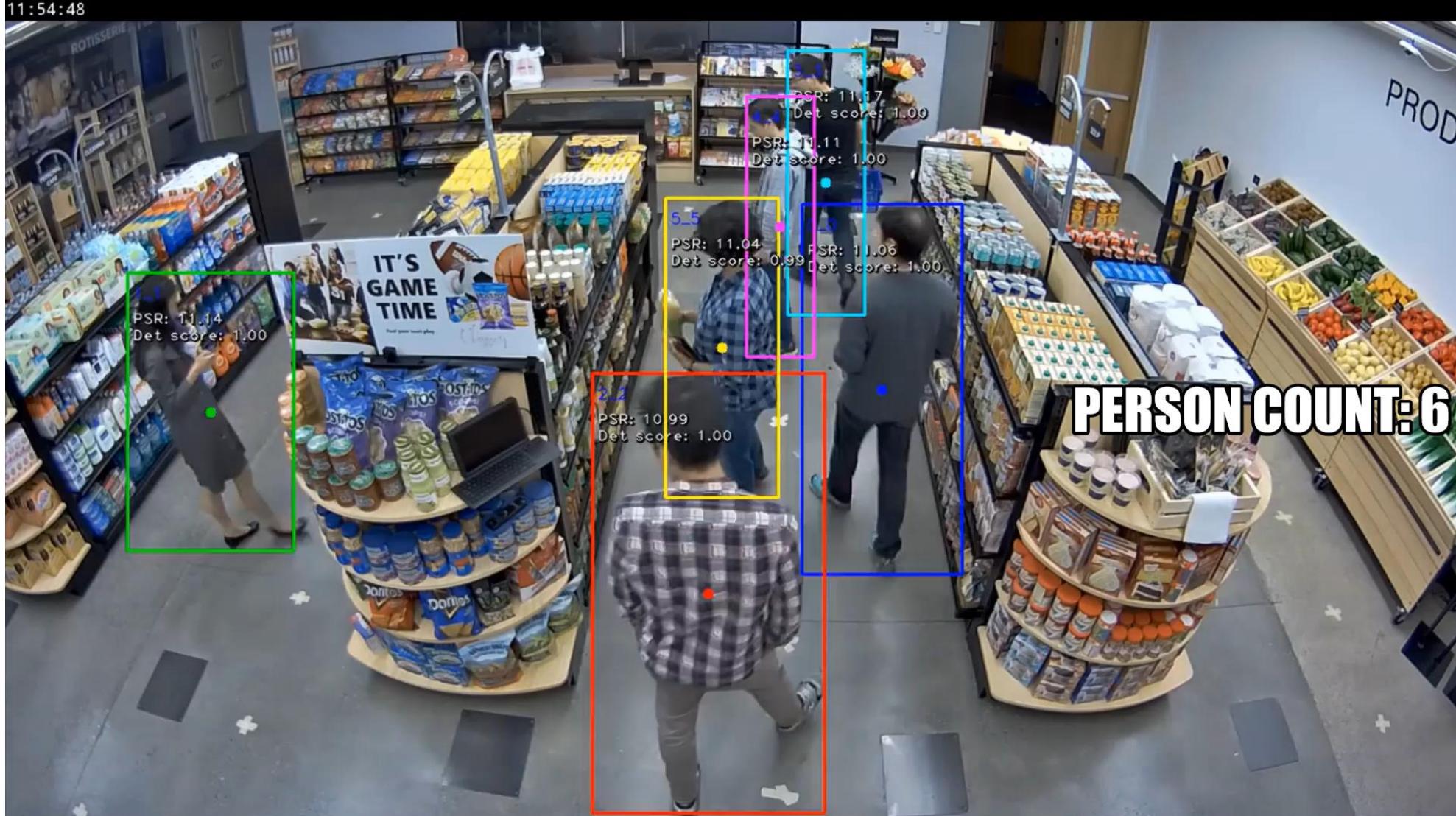
Computer Vision for
Spatial Analysis (미리보기)



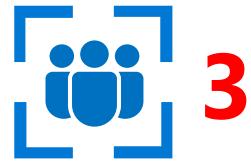
People Counting



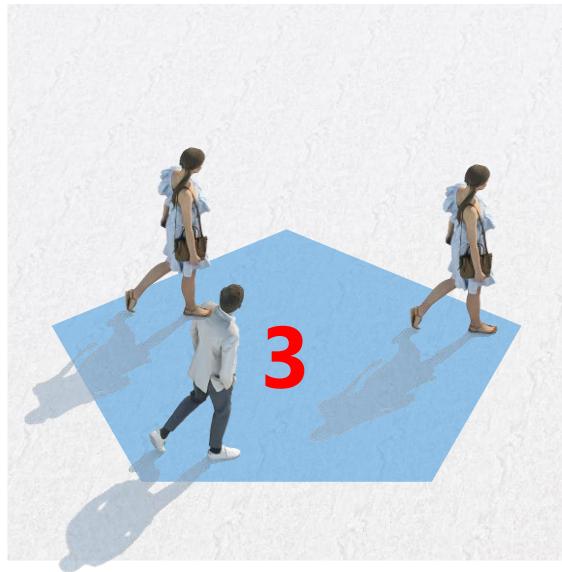
3



People Counting



3



폴리곤(Polygon)에서
인원 확인하기

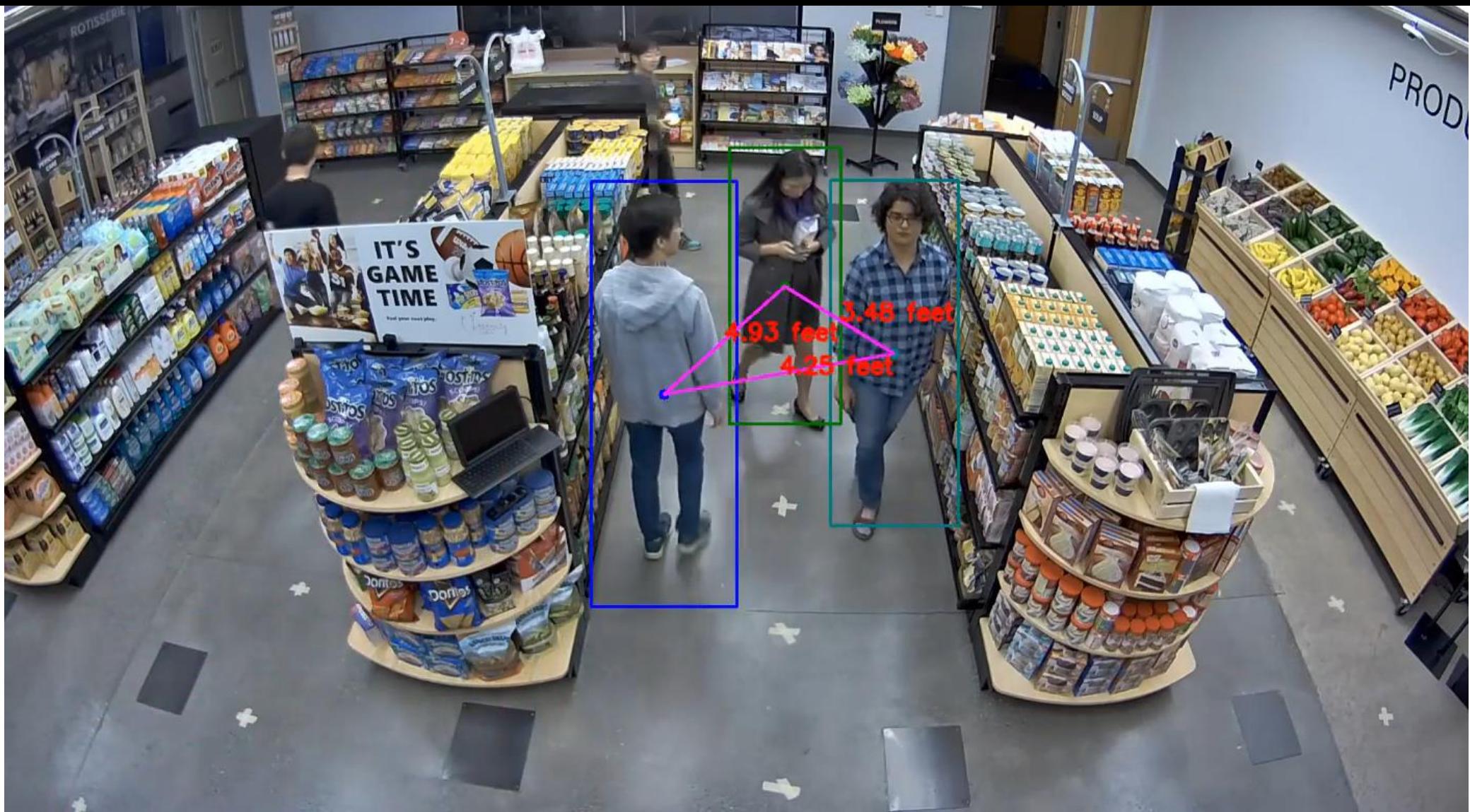
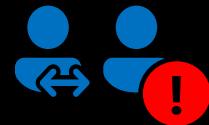
구성

```
"zones":  
[ { "name": "storeFrontCamera"  
  "polygon": [[0.3,0.3], [0.3,0.9],  
  [0.6,0.9], [0.6,0.3], [0.3,0.3]],  
  "threshold": 50.00,  
  "events": [ {  
      "type": "count",  
      "config": {  
          "trigger": "event",  
          "output_frequency": "1" } } ]  
} ] }
```

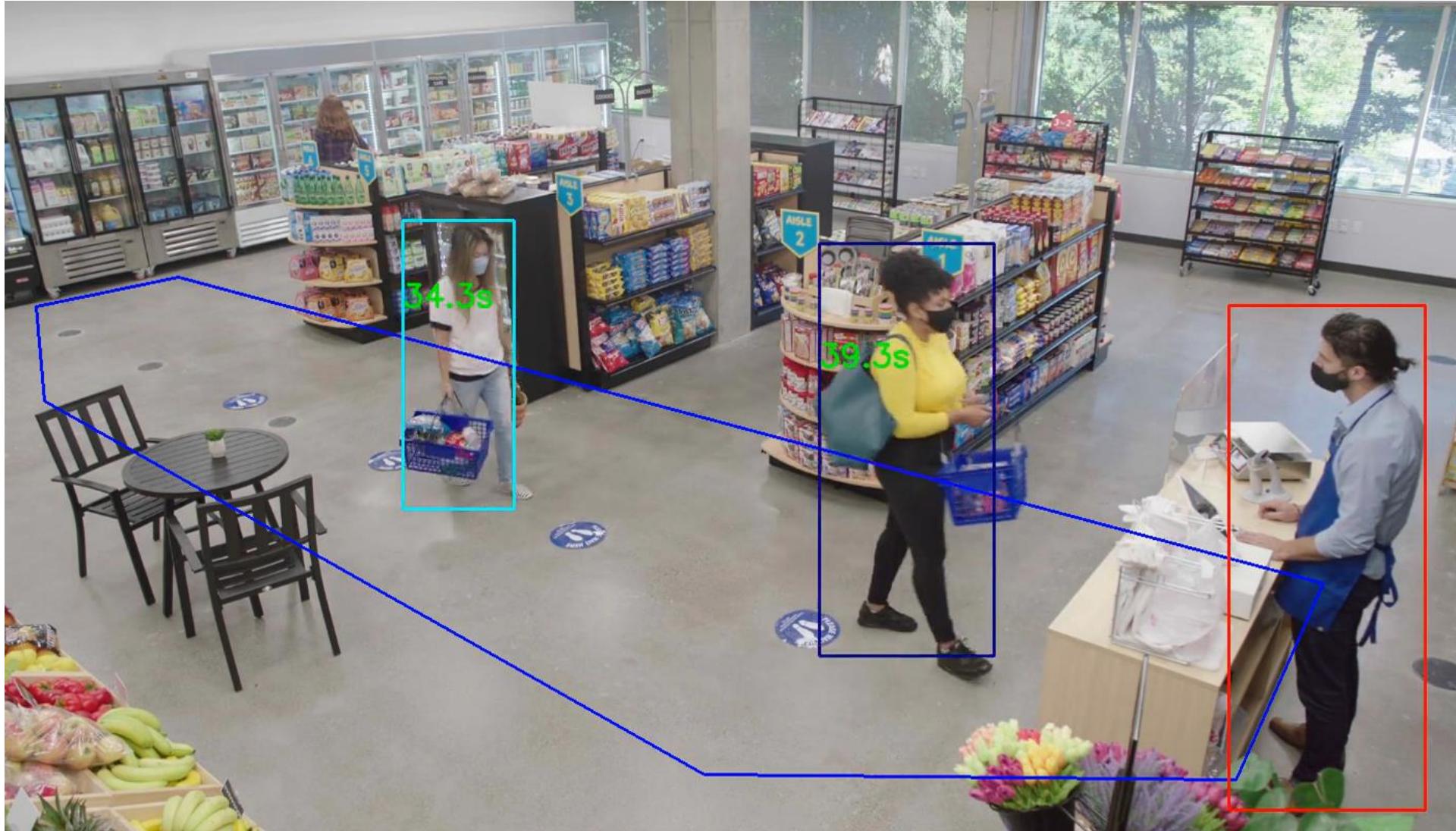
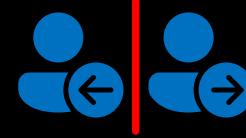
이벤트에 따른 AI 인사이트

```
"events": [ {  
  "id":  
  "b013c2059577418caa826844223bb50b",  
  "type": "personCountEvent",  
  "detectionIds": [  
    "bc796b0fc2534bc59f13138af3dd7027",  
    "60add228e5274158897c135905b5a019",  
    "714fe21a35673167d90a235807c5b017"  
  ],  
  "properties": { personCount": 3 },  
  "zone": "storeFrontCamera",  
  "trigger": "event"  
},  
  "detections": [ {  
    "type": "person",  
    "id":  
    "bc796b0fc2534bc59f13138af3dd7027",  
    "region": {  
        "type": "RECTANGLE",  
        "points": [ { "x":..., "y":...},  
                   { "x":..., "y":...} ] },  
        ... ] }
```

Social Distancing



Entry/Exit



Computer Vision 소개

Custom Vision을 활용해
원하는 사물(object)를
인식하는 방법

직접 해보실 수 있습니다:
<https://customvision.ai>



Custom Vision: tailwind-tools - https://www.customvision.ai/projects/6fc0ae06-b13d-478b-9e68-0cf34def7b8f#/manage

tailwind-tools

Training Images Performance Predictions Train Quick Test ?

Add images Delete Tag images Select all

Filter Iteration Workspace

Tags Tagged Untagged

Showing: all tagged images

Search For Tags:

- drill 16
- hammer 30
- pliers 50
- screwdriver 51







Get started

A large purple cursor arrow points towards the bottom-left corner of the screen.

Cognitive Services와 함께 아이디어를 MVP로 구현할 때 고려 사항

아이디어 & 통찰력



인류를 위한 AI
실제 비즈니스에
도움을 주는 AI
책임있는 AI

프로덕션 환경을 (미리) 고려한 MVP 프로토타이핑 & 개발



Cognitive
Services에서
API 활용
OR
직접 모델 정의 &
API 배포

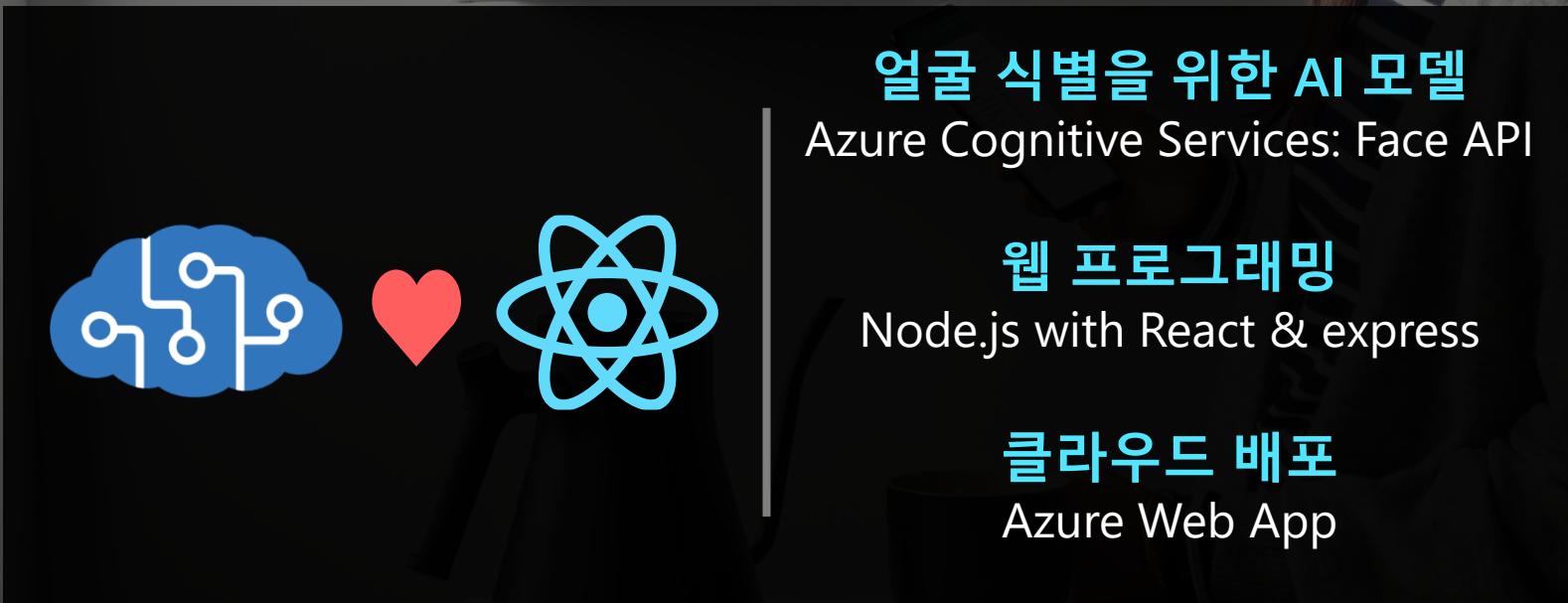
오픈 소스
도구를 활용한
개발
Inner-source
접근 방식

협업



DevOps &
MLOps

[데모] Cognitive Services 웹 앱: Face API & React



데모 소스 코드 위치: <https://aka.ms/ga2021kr/ianychoi>

Cognitive Services를 통해 더 많은 것을 성취할 수 있습니다

미리 트레이닝이 이루어진 AI를 가장 포괄적으로 제공

사용자 데이터로 모델을 커스터마이징 지원



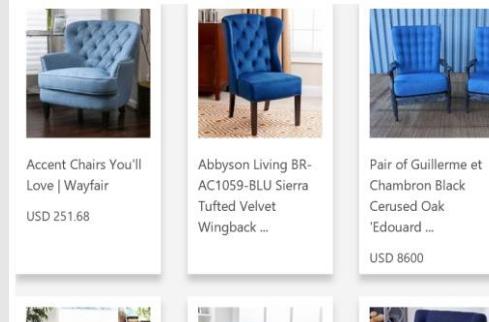
Vision



Computer Vision | Video Indexer | Face | Content Moderator



Bing
Search



Accent Chairs You'll Love | Wayfair
USD 251.68

Abbyson Living BR-AC1059-BLU Sierra Tufted Velvet Wingback ...
USD 8600

Big Web Search | Video Search | Image Search | Visual Search | Entity Search | News Search | Autosuggest



Language

Analyzed text tab is selected. Results include:

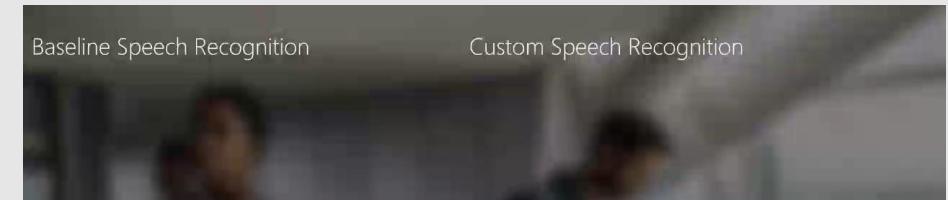
- LANGUAGES: English (confidence: 100 %)
- KEY PHRASES: (empty)
- SENTIMENT: Positive (confidence: 100 %)
- LINKED ENTITIES (PREVIEW): a

Analyze button at the bottom.

Text Analytics | Spell Check | Language Understanding | Text Translation | QnA Maker



Speech



Baseline Speech Recognition

Custom Speech Recognition

Speech to Text | Text to Speech | Speech Translation | Speaker Recognition

모든 개발자를 위한 REST API & SDK

Azure Cognitive Services documentation

Learn how to build intelligent and supported algorithms into apps, websites, and bots to see, hear, speak, understand, and interpret your user needs.

The screenshot shows the Azure Cognitive Services documentation homepage. It features a grid of cards for different services:

- OVERVIEW**: What are Cognitive Services?
- WHAT'S NEW**: What's new in docs?
- CONCEPT**: Development options
- CONCEPT**: Cognitive Services and machine learning
- CONCEPT**: Cognitive Services on-prem containers
- CONCEPT**: Cognitive Services with databases
- REFERENCE**: Language support
- REFERENCE**: Support and help options

Below this grid, there are four larger sections with more detailed descriptions:

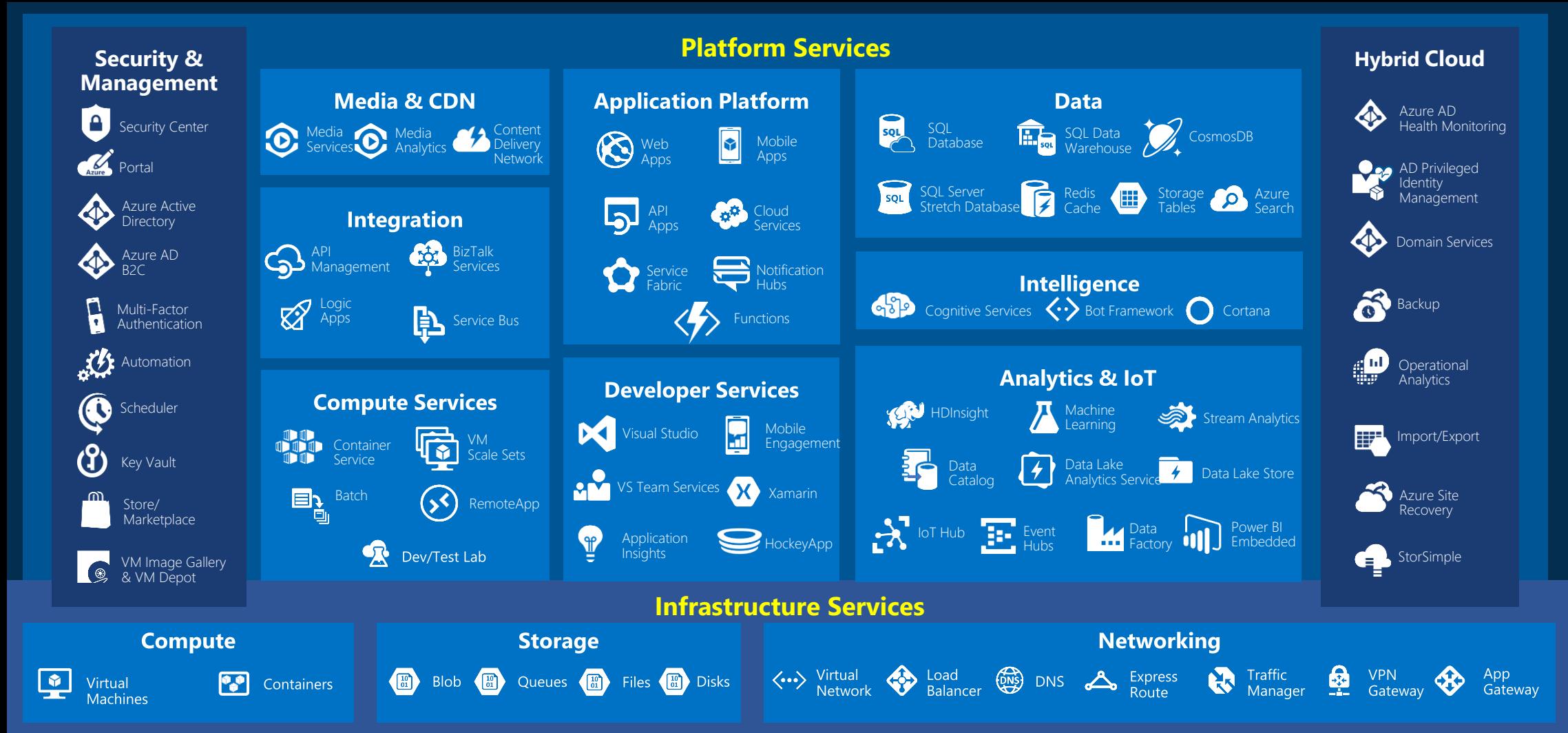
- Vision**: Recognize, identify, caption, index, and moderate your pictures, videos, and digital ink content.
 - Computer Vision
 - Custom Vision
 - Face
 - Form Recognizer
 - Video Indexer
- Language**: Allow your apps to process natural language with pre-built scripts, evaluate sentiment and learn how to recognize what users want.
 - Immersive Reader
 - Language Understanding (LUIS)
 - QnA Maker
 - Text Analytics
 - Translator
- Speech**: Convert speech into text and text into natural-sounding speech. Translate from one language to another and enable speaker verification and recognition.
 - Speech service
 - Customize with Speech Studio
- Decision**: Build apps that surface recommendations for informed and efficient decision-making.
 - Anomaly Detector
 - Content Moderator
 - Metrics Advisor (preview)
 - Personalizer

여기에서 링크를 확인하세요: <https://aka.ms/data-ai-day/cognitive-services>

- ✓ Using the REST API
 - ✓ Analyze a remote image
 - cURL
 - Go
 - Java
 - JavaScript
 - Node.js
 - PHP
 - Python
 - Ruby
 - > Analyze a local image
 - ✓ Generate a thumbnail
 - C#
 - cURL
 - Go
 - Java
 - JavaScript
 - Node.js
 - PHP
 - Python
 - Ruby

프로덕션을 고려한 AI 앱 확장

<https://azure.microsoft.com/en-us/services/>



Datacenter Infrastructure (66 Regions Announced)

Microsoft Azure Regions

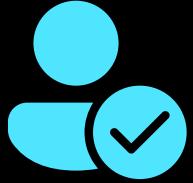
66

Azure regions

More than AWS &
Google combined



책임있는 AI & 혁신



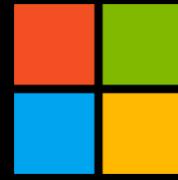
프라이버시 보호



투명성 제공



신뢰 조성

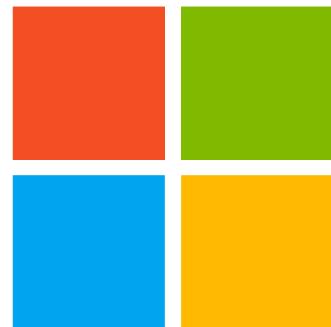


Microsoft Azure

Invent with purpose.



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