



# Azure AI

SeokJin Han  
Global Black Belt – AI  
Microsoft



# Azure Data + AI

Data

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Data Modernization on premises



Data modernization to cloud



Globally distributed apps



Cloud Scale Analytics

+

AI

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AI apps & agents



Knowledge mining



Machine learning

# AI

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Vision

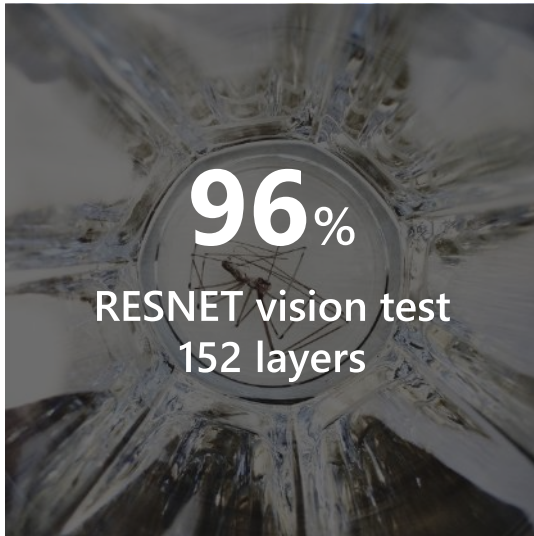
Speech

Language

Customized language understanding **Text-to-speech**  
Content moderation **Spell**  
**Speech translation** check  
Custom image classification  
Speaker recognition Entity linking  
Sentiment analysis, & augmentation  
key phrase extraction **Image tagging**  
**Custom** Object detection Text translation Intend  
**voice** **OCR handwriting** analysis  
Emotion detection **recognition** Custom translation  
Video insights **Face** Custom speech Assisted text moderation  
**identification** Speech transcription

# Microsoft AI breakthroughs

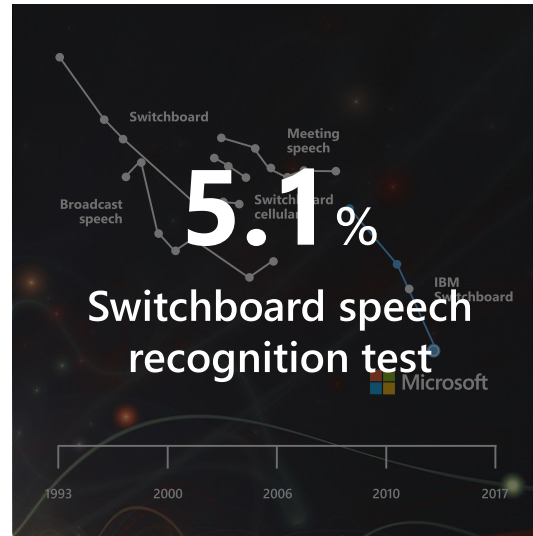
## Vision



2016

Object recognition  
Human parity

## Speech



2017

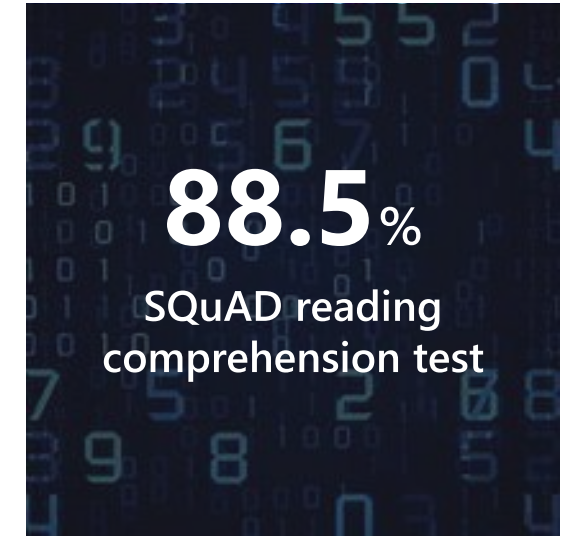
Speech recognition  
Human parity

## Language



March 2018

Machine translation  
Human parity



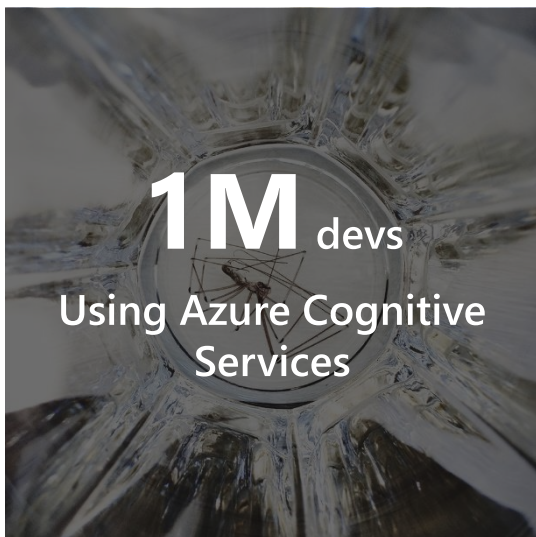
January 2018

Machine reading comprehension  
Human parity



# AI Momentum

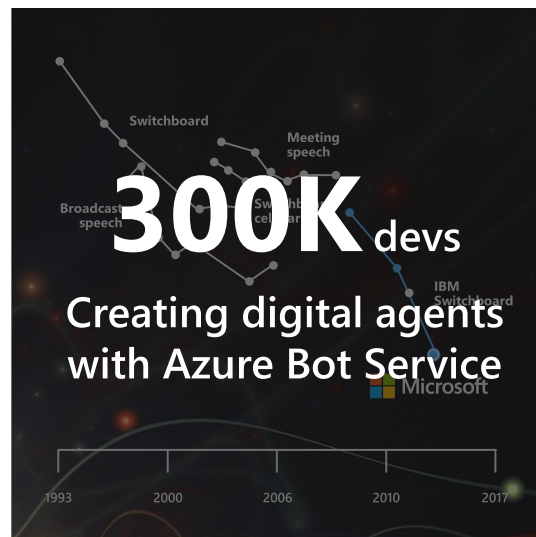
## Vision



2016

Object recognition  
Human parity

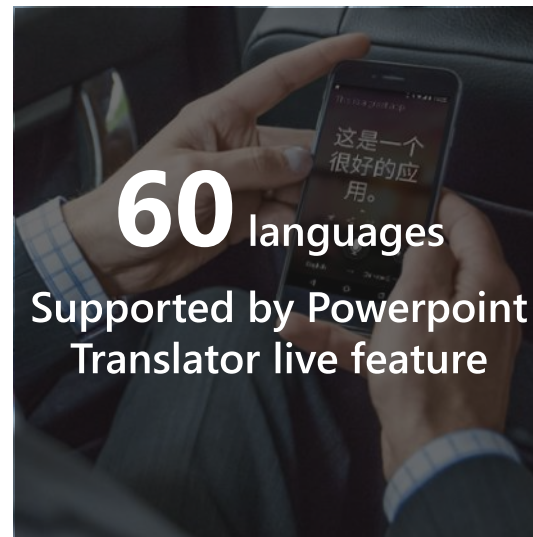
## Speech



2017

Speech recognition  
Human parity

## Language



March 2018

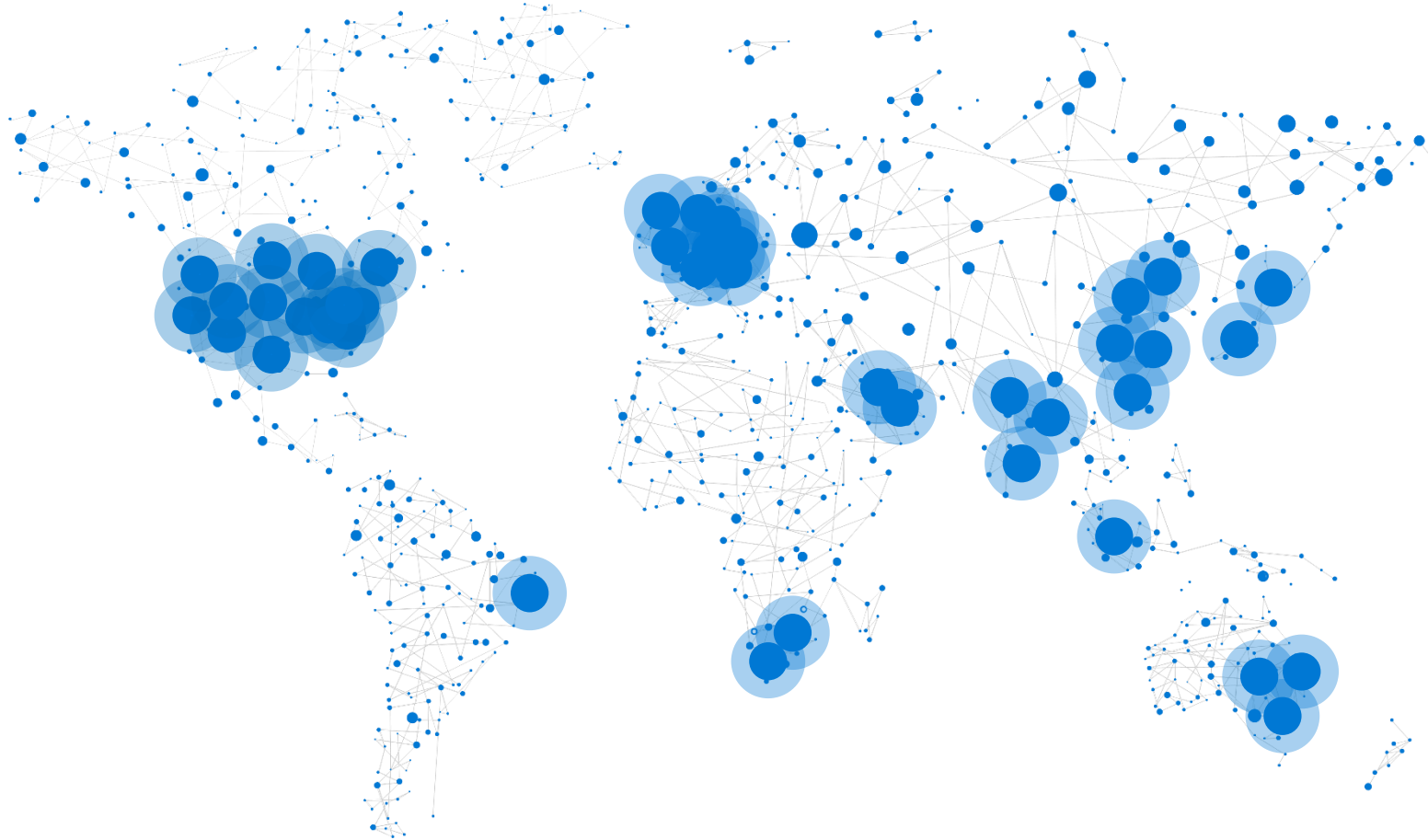
Machine translation  
Human parity



January 2018

Machine reading comprehension  
Human parity

# Azure



Productive | Hybrid | Intelligent | Trusted

# Azure is the best place for AI

Accelerate time to value  
with agile tools and services

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Pretrained AI  
services



Powerful  
tools



Comprehensive  
platform

Innovate with AI everywhere –  
in the cloud, at edge and on-premises

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Cloud



Edge



On-premises

Use any language, any development  
tool and any framework

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Benefit from industry-leading security, privacy,  
compliance, transparency, and AI ethics standards

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>90% of Fortune 500 companies  
use Microsoft Cloud

# Azure AI

## AI apps & agents



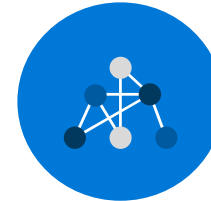
Azure Bot Service  
Azure Cognitive Services

## Knowledge mining



Azure Cognitive Search

## Machine learning



Azure Databricks  
Azure Machine Learning  
Azure AI infrastructure



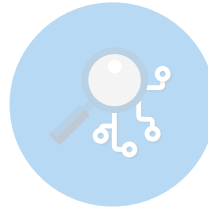
# Azure AI

## AI apps & agents



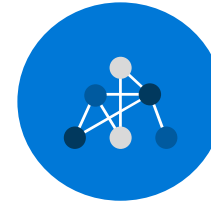
Azure Bot Service  
Azure Cognitive Services

## Knowledge mining



Azure Cognitive Search

## Machine learning



Azure Databricks  
Azure Machine Learning  
Azure AI infrastructure



**13M** personalized experiences with  
**33 orders/second**

**asos**



**\$300k/day** cost savings with  
predictive maintenance

**Rockwell  
Automation**



**85%** savings in risk calculation &  
under-writing costs

**50%** lower loan defaults

**quarterspot**

# Machine Learning

## Sophisticated pretrained models

To simplify solution development



Vision



Speech



Language



Search

## Popular frameworks

To build advanced deep learning solutions



Pytorch



TensorFlow



Keras



Onnx

## Productive Options

To empower data science and development teams



Azure  
Databricks



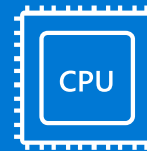
Azure  
Machine Learning



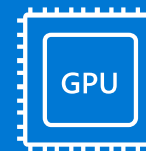
Machine Learning  
VMs

## Powerful Infrastructure

To accelerate deep learning



CPU



GPU



FPGA

## Flexible Deployment

To deploy, manage models on intelligent cloud & edge



On-premises



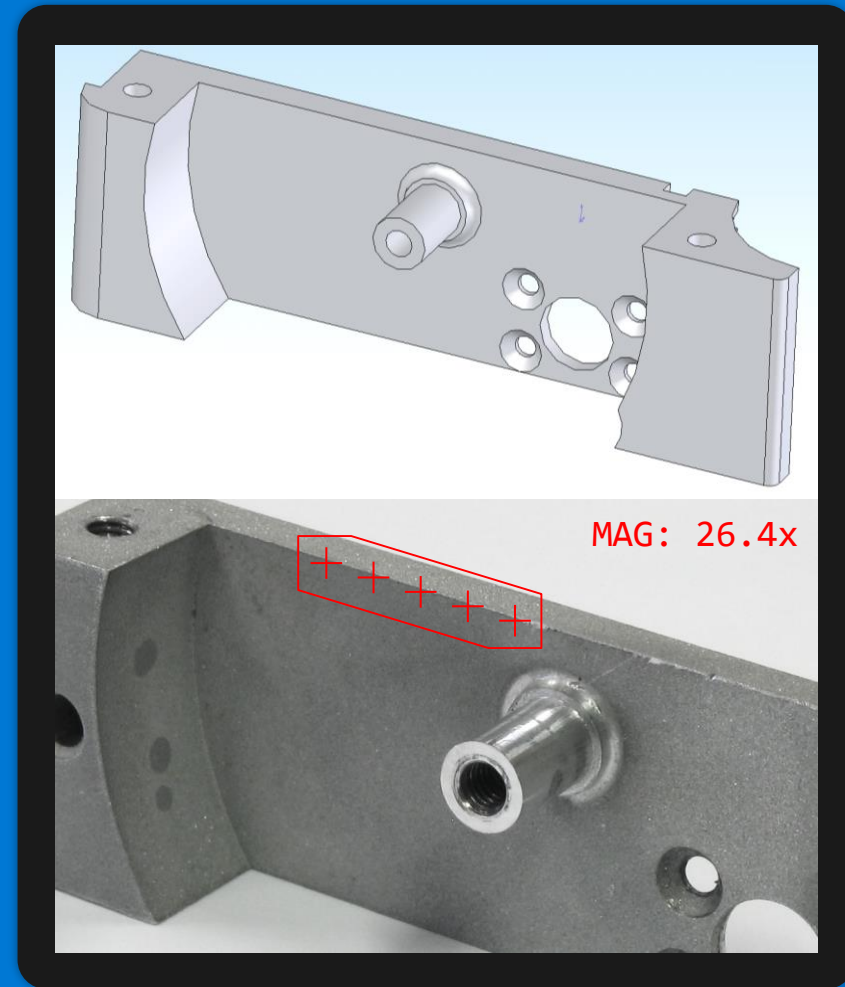
Cloud



Edge

# Pretrained models Demo

Custom vision



# Popular frameworks

Build advanced deep learning solutions

Use your favorite deep learning frameworks



TensorFlow



PyTorch



Scikit-Learn



MXNet



Chainer



Keras



without getting locked into one framework



ONNX

Community project created by Facebook and Microsoft

Use the best tool for the job. Train in one framework  
and transfer to another for inference



# Productive services

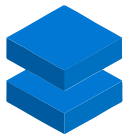
Empower data science and development teams



## Integrated data science & data engineering teams

Desktop solutions not adequate

Need a unified big data & ML solution



Azure Databricks

+



Azure Machine Learning



## Individual data scientists

Desktop solutions adequate

Need cloud for sporadic compute needs



Machine Learning VMs



# Azure Databricks

Enable collaboration between data scientists and data engineers with an interactive productive workspace

Prepare and clean data at massive scale with the language of your choice

Build and train models with pre-configured machine learning and deep learning optimized clusters



# Azure Machine Learning

Track experiments for reproducibility and auditing needs. Identify and promote your best models

Deploy and manage your models using containers to run them anywhere

# Powerful infrastructure

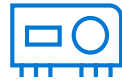
Accelerate deep learning



## CPUs

General purpose machine learning

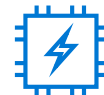
D, F, L, M, H Series



## GPUs

Deep learning

N Series



## FPGAs

Specialized hardware accelerated deep learning

Project Brainwave

Optimized for flexibility

Optimized for performance

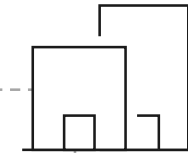
# Flexible deployment

Deploy and manage models on intelligent cloud and edge

Train & deploy



Train & deploy



Track models in production  
Capture model telemetry  
Retrain models automatically



Deploy

# Azure is the best place for machine learning

## Sophisticated pretrained models

Most comprehensive set of pretrained services



Vision



Speech



Language



Search

## Popular frameworks

Open & interoperable



Pytorch



TensorFlow



Keras



Onnx

## Productive services

Machine learning at scale



Azure  
Databricks



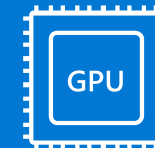
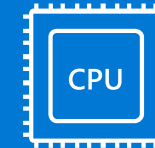
Azure  
Machine Learning



Machine Learning  
VMs

## Powerful Infrastructure

Most comprehensive  
Lowest cost inferencing using FPGAs



## Flexible deployment

From cloud to edge



On-premises



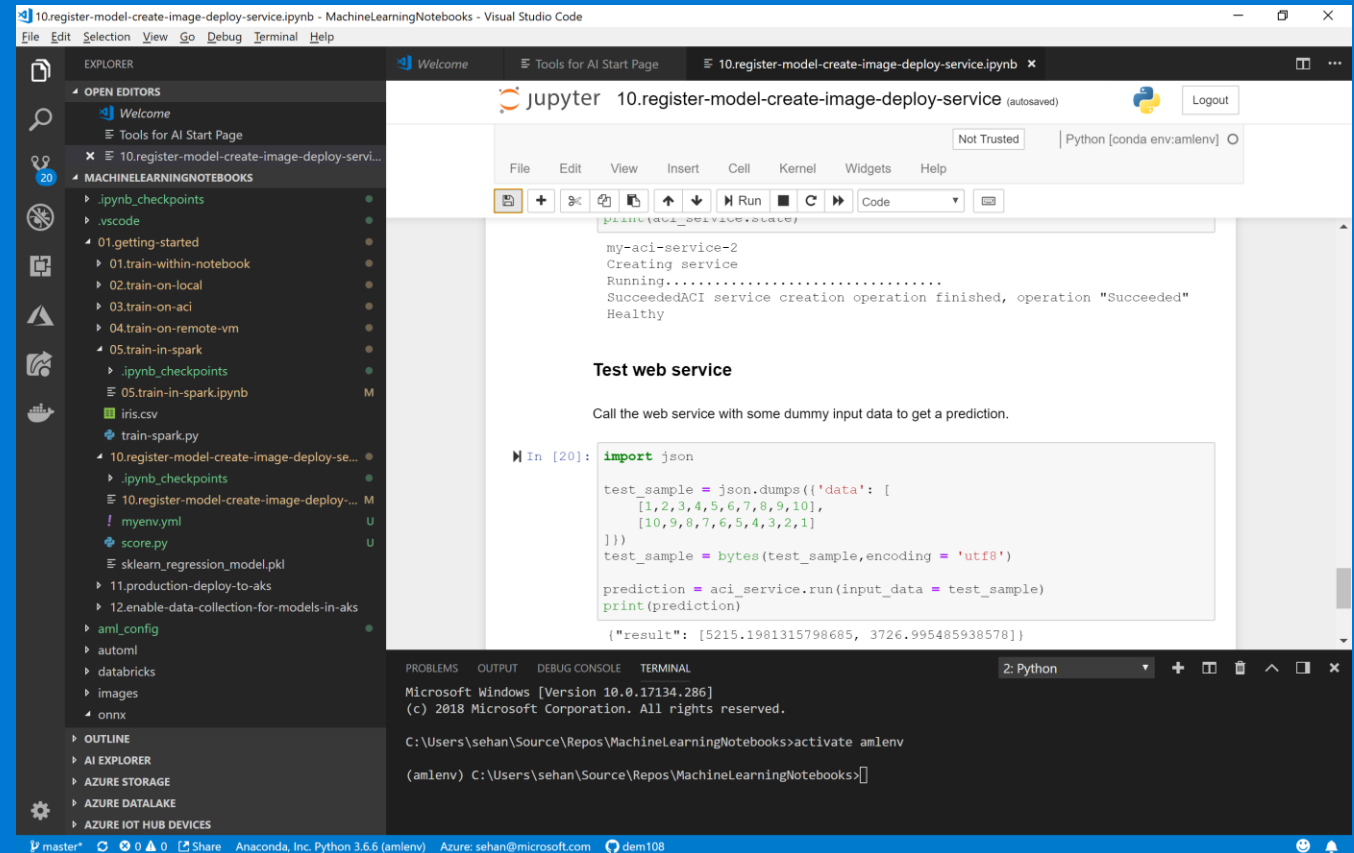
Cloud



Edge

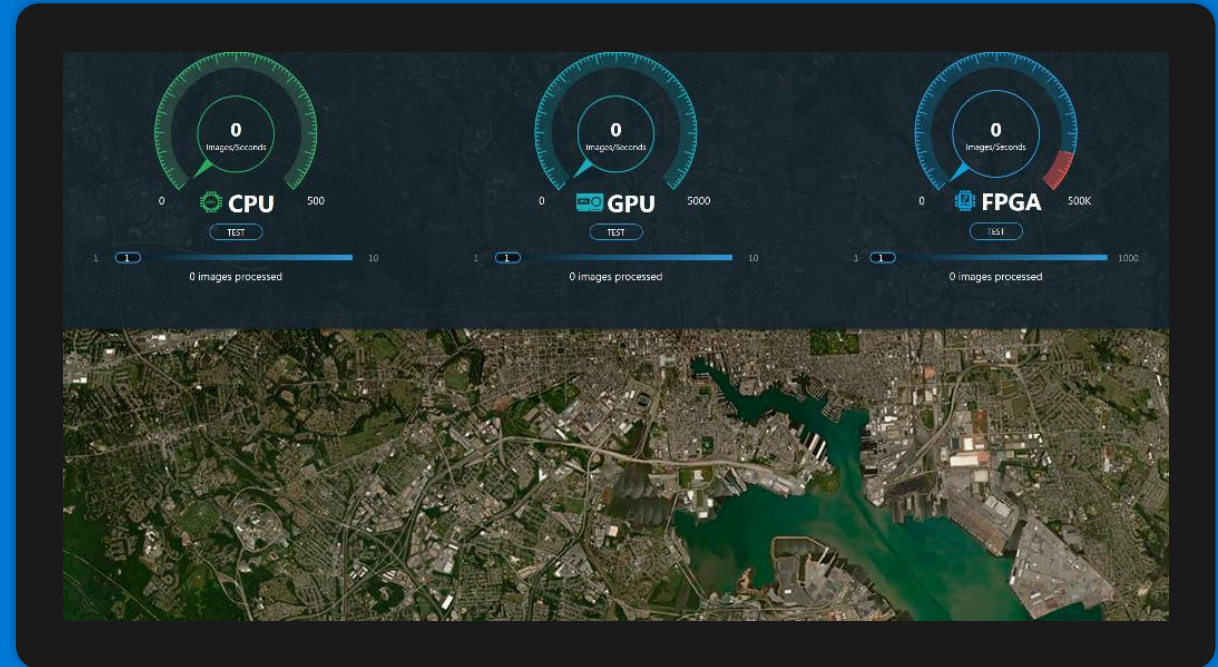
# Azure ML SDK Demo

Azure Notebooks  
Visual Studio Code Tools for AI  
Azure ML SDK  
AutoML



# AI Infrastructure Demo

Azure ML: Deploy to FPGA  
AI for Earth





# Azure is the best place for AI

Accelerate time to value  
with agile tools and services

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Pretrained AI  
services



Powerful  
tools



Comprehensive  
platform

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Cloud



Edge



On-premises

Use any language, any development  
tool and any framework

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Benefit from industry-leading security, privacy,  
compliance, transparency, and AI ethics standards

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>90% of Fortune 500 companies  
use Microsoft Cloud

# Azure—cloud for all



**Productive**



**Hybrid**



**Intelligent**



**Trusted**

# Azure AI

## AI apps & agents



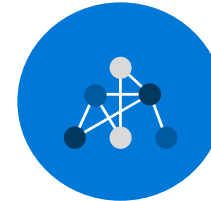
Azure Bot Service  
Azure Cognitive Services

## Knowledge mining



Azure Cognitive Search

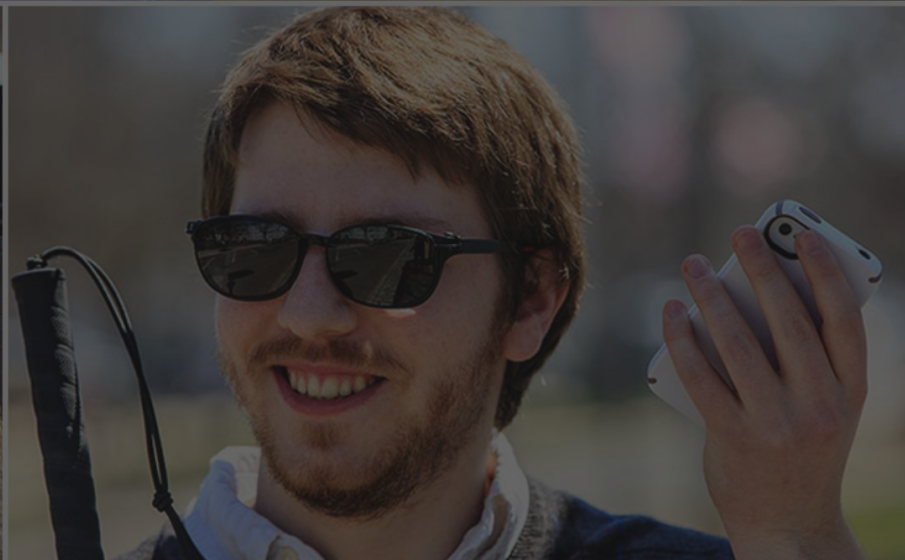
## Machine learning



Azure Databricks  
Azure Machine Learning  
Azure AI infrastructure



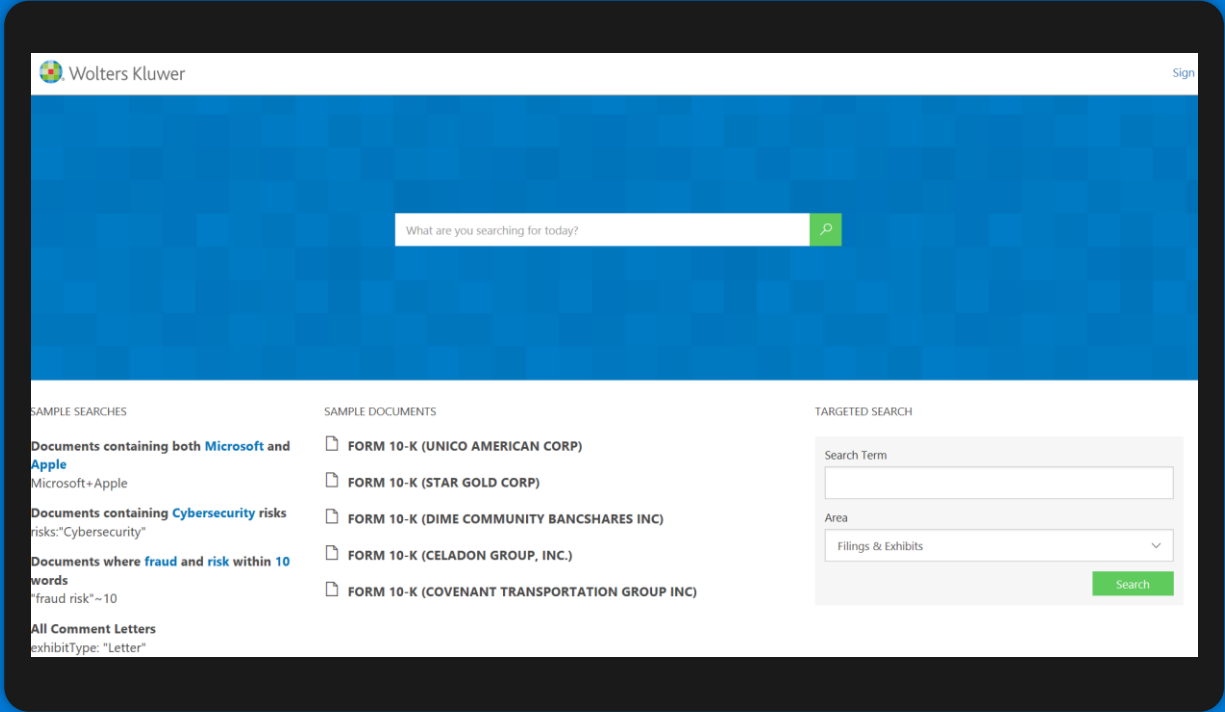
# Our opportunity



Thank you

# Knowledge mining Demo

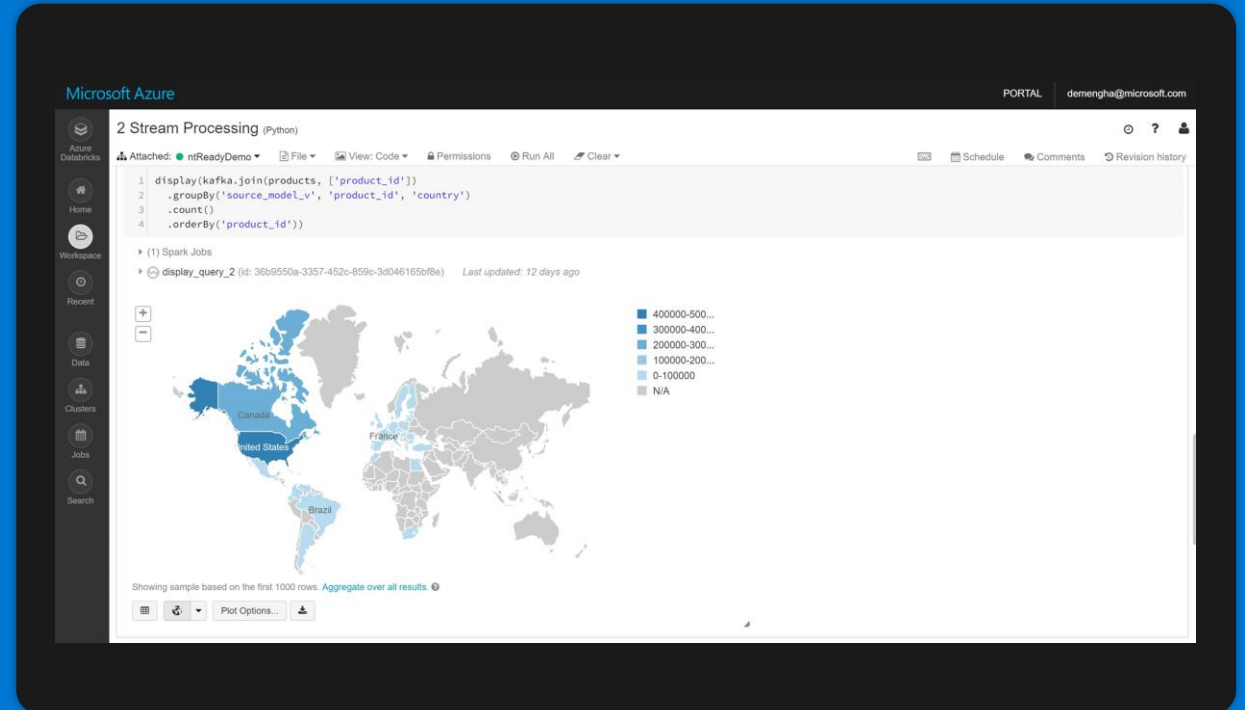
Wolters Kluwer



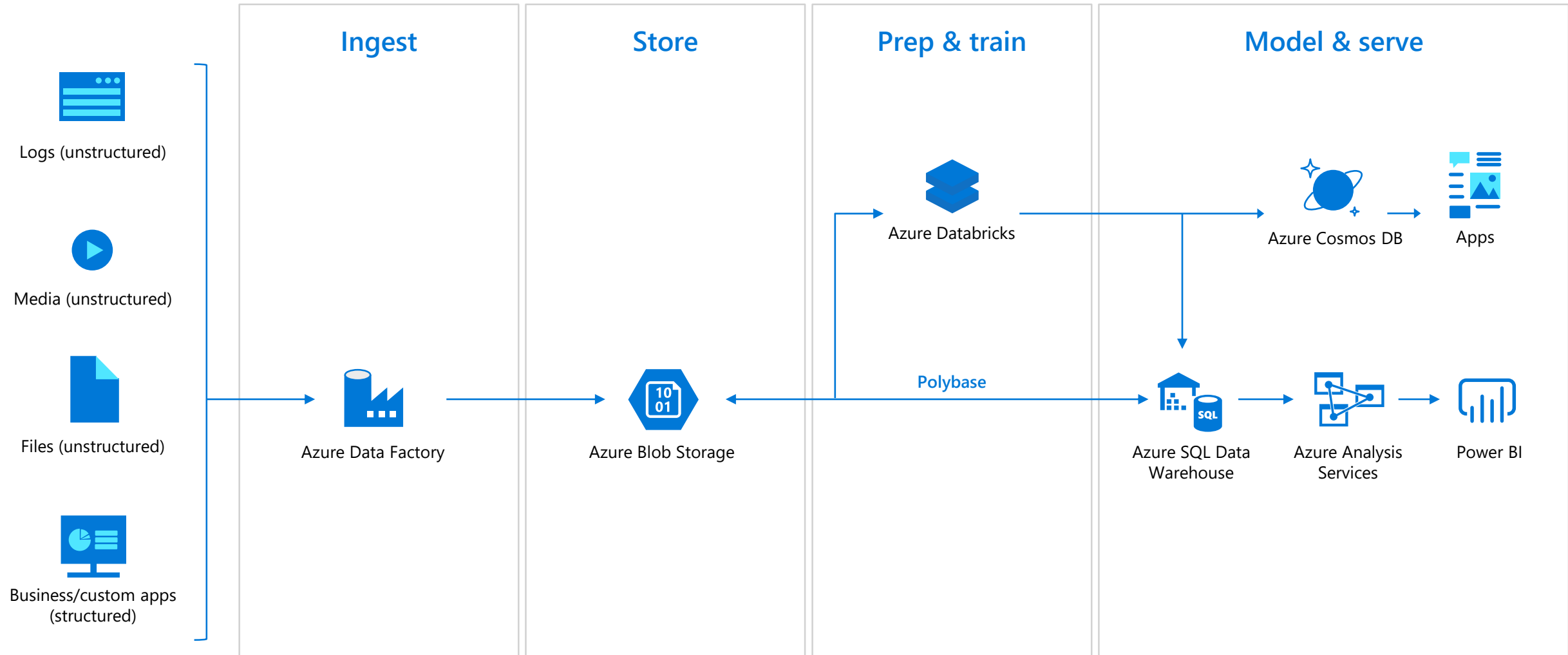


# Azure Databricks

Demo

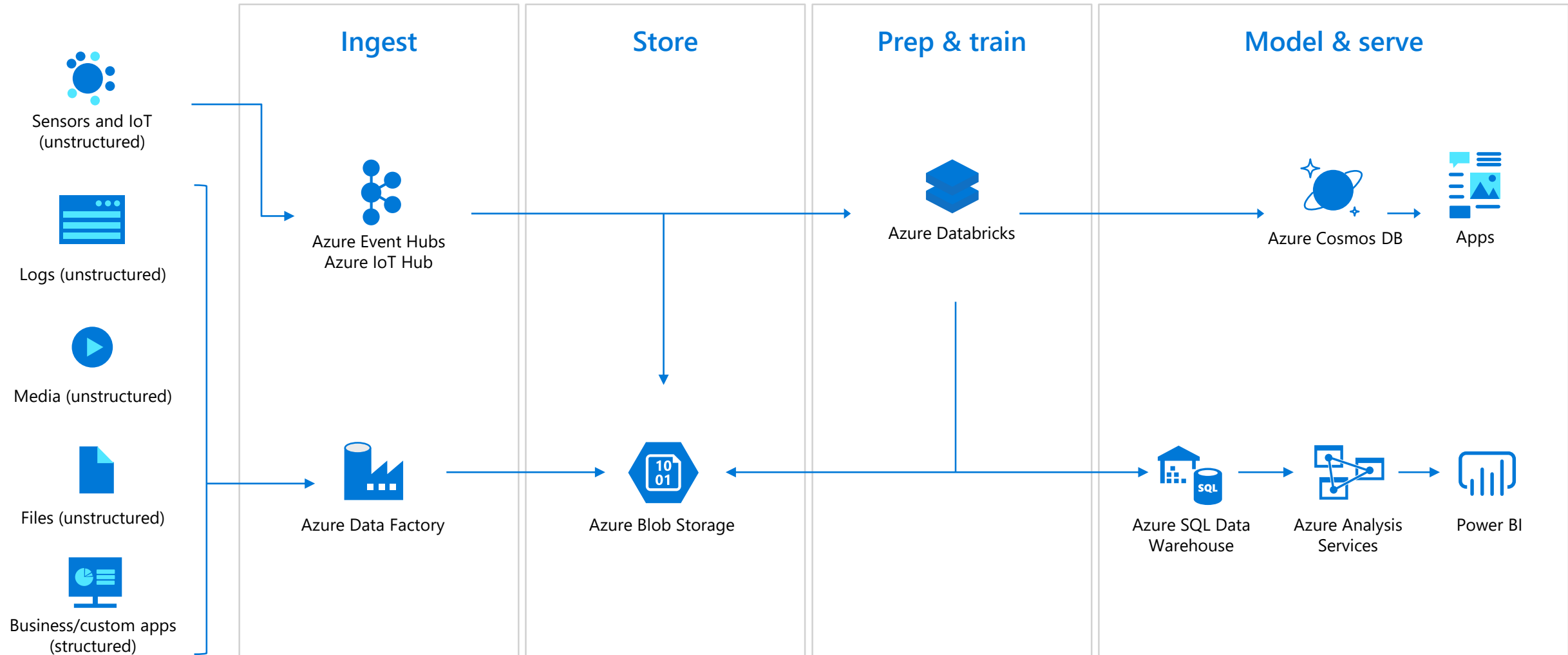


# Advanced analytics on big data



Microsoft Azure also supports other Big Data services like Azure HDInsight and Azure Data Lake to allow customers to tailor the above architecture to meet their unique needs.

# Real-time analytics



Microsoft Azure also supports other Big Data services like Azure HDInsight and Azure Data Lake to allow customers to tailor the above architecture to meet their unique needs.