



Microsoft

Global Azure Bootcamp

Indianapolis IN, 2019-04-27

Azure ML & AI

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Microsoft Cloud Solution Architect



Azure Data + AI

Data



Data Modernization on-premises



Data modernization to Azure



Globally distributed data



Cloud Scale Analytics

+

AI



AI apps & agents



Knowledge mining



Machine learning

AI

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 voice Object detection Text translation Intend
OCR handwriting analysis

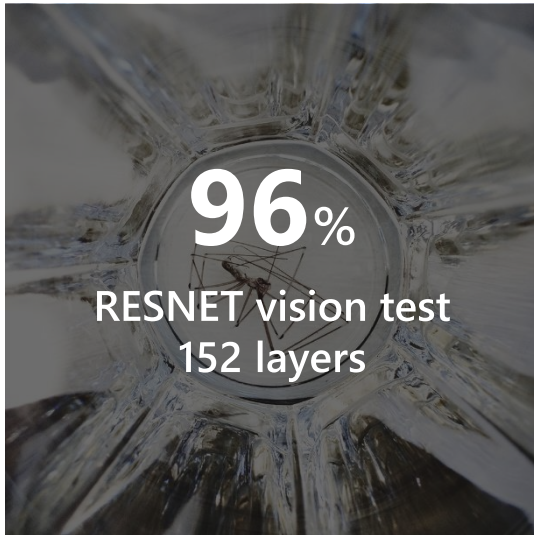
Emotion detection **recognition** Custom translation
Video insights

Face Custom speech Assisted text moderation

identification Speech transcription

Microsoft AI breakthroughs

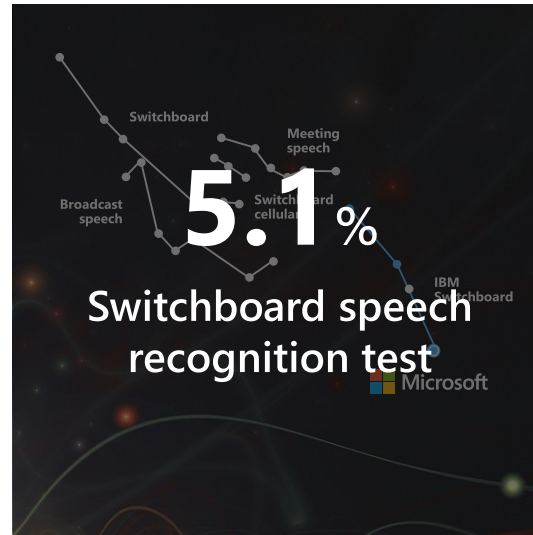
Vision



2016

Object recognition
Human parity

Speech



2017

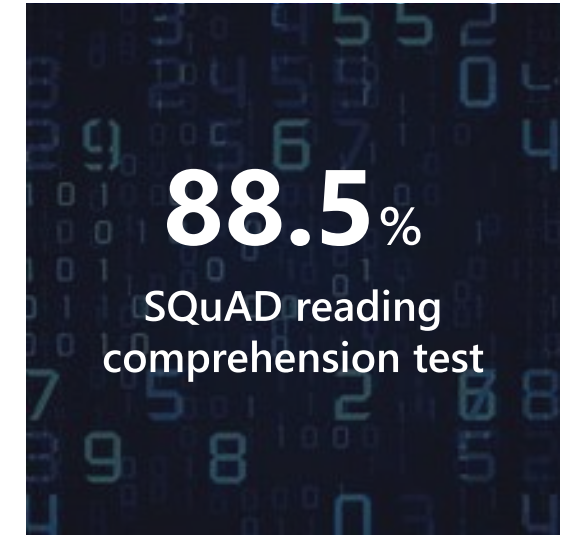
Speech recognition
Human parity

Language



March 2018

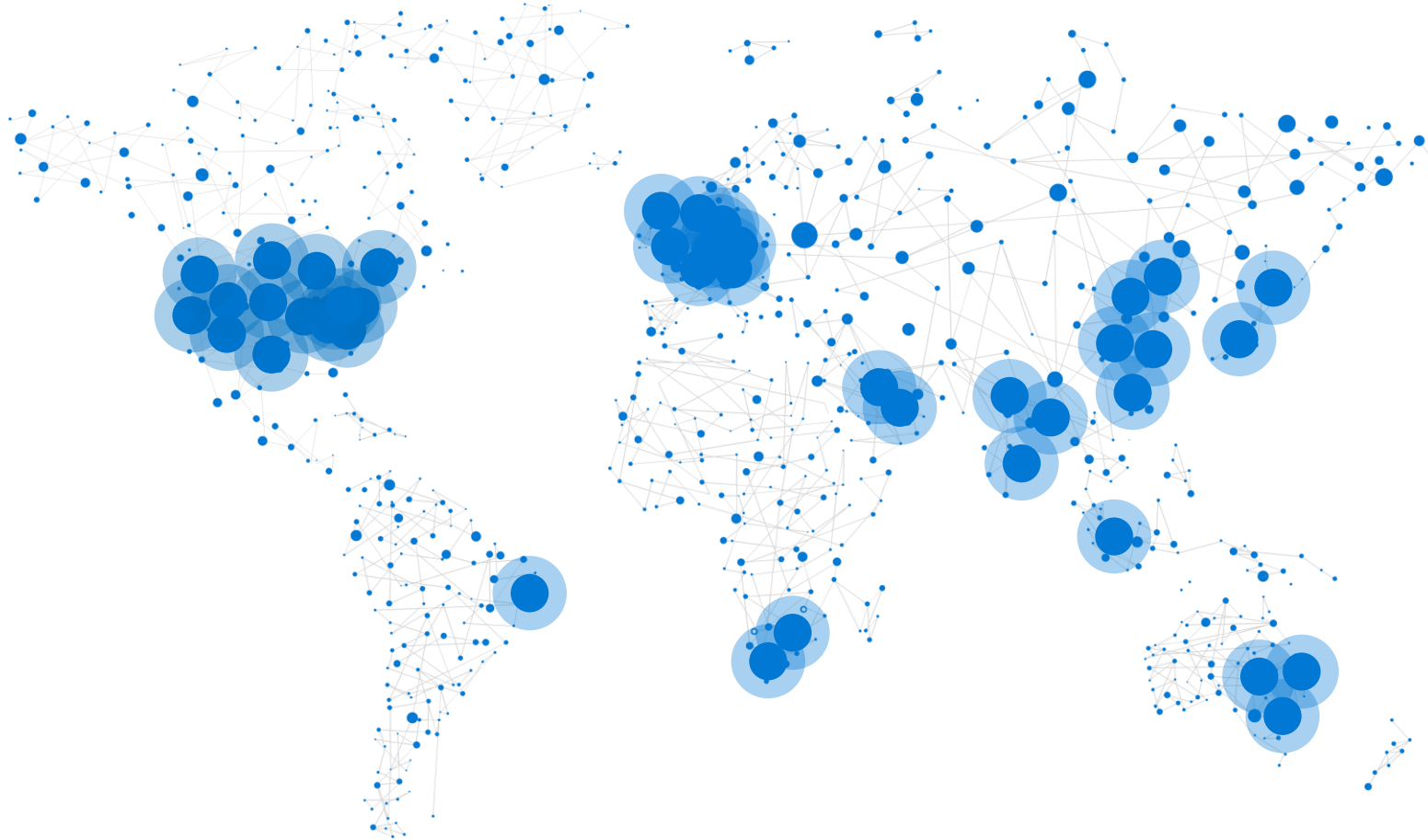
Machine translation
Human parity



January 2018

Machine reading comprehension
Human parity

Azure



Productive | Hybrid | Intelligent | Trusted

Azure is the best place for AI

Accelerate time to value
with agile tools and
services



Pretrained AI
services



Powerful
tools



Comprehensive
platform

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



Cloud



Edge



On-premises

Use any language, any
development tool and any
framework



python™

PYTORCH



ONNX



TensorFlow™



Spark

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

>90% of Fortune 500 companies
use Microsoft Cloud

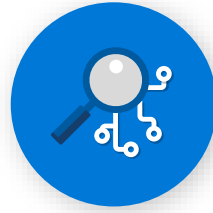
Azure AI

AI apps & agents



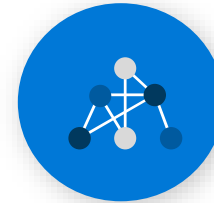
Azure Bot Service
Azure Cognitive Services

Knowledge mining



Azure Cognitive Search

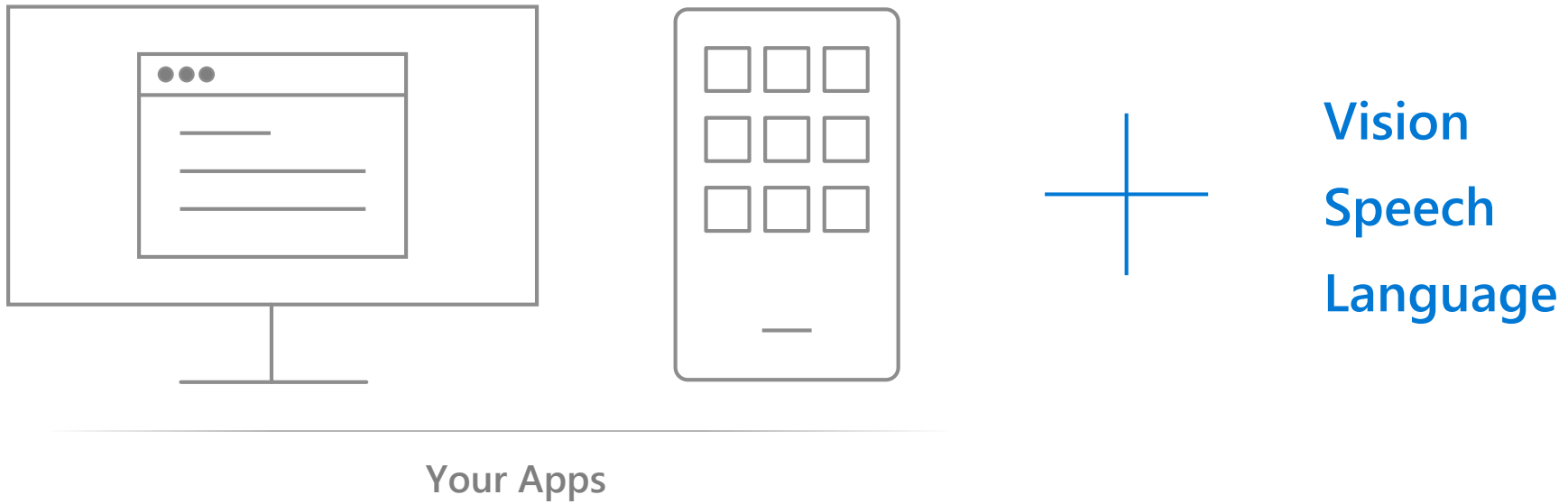
Machine learning



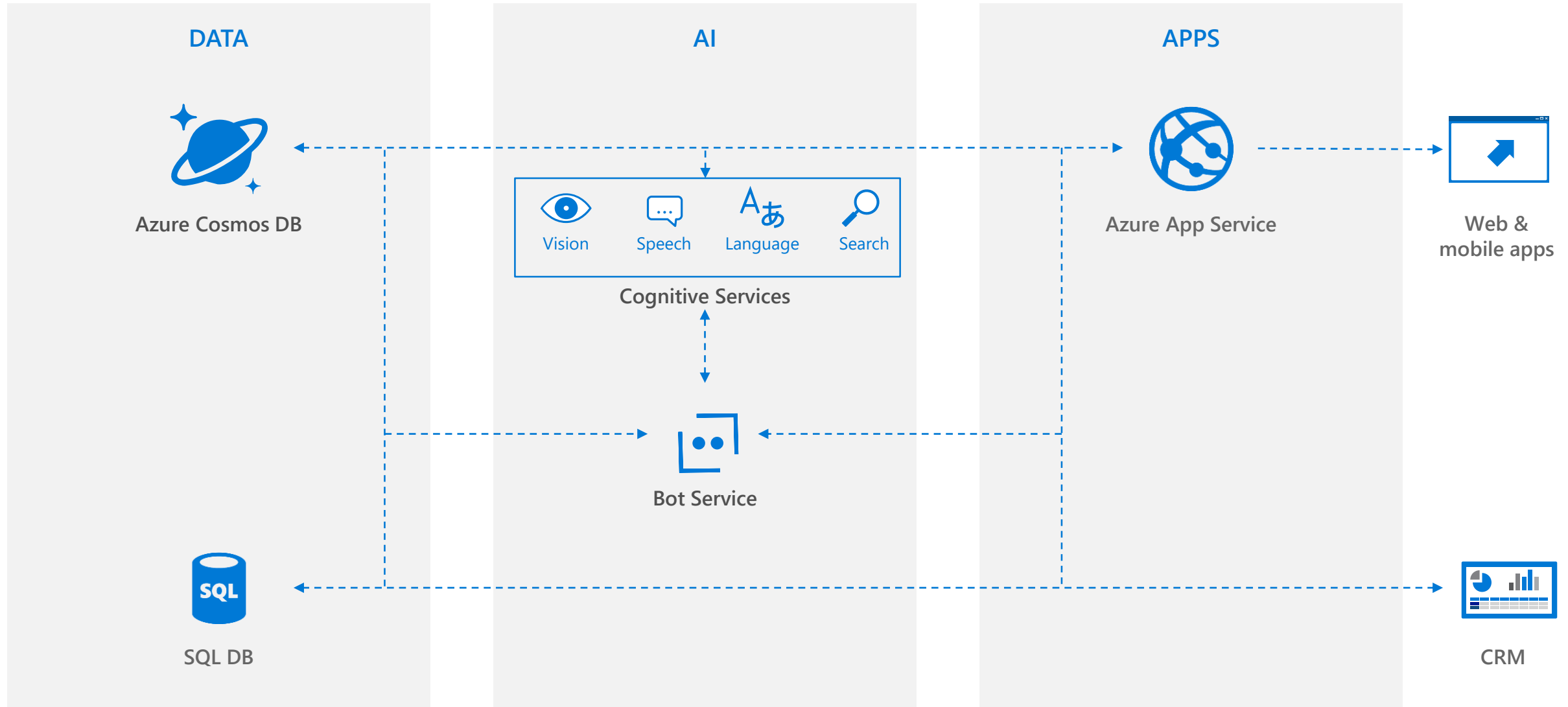
Azure Databricks
Azure Machine Learning
Azure AI infrastructure

AI Apps & Agents

Building AI apps & agents



AI apps & agents: Reference Architecture



Cognitive Services

Infuse your apps with powerful, pre-trained AI models

Customize easily and tailor to your needs

Train in the cloud and deploy anywhere



Vision



Speech



Language



Search

Bot Service

Accelerate bot development with an integrated environment and pre-built templates

Engage your audience easily across multiple channels



Customer examples



accenture

Built corpus at speed, to quickly launch an HR chatbot for **100,000+ people**



600 million technical support contacts per year

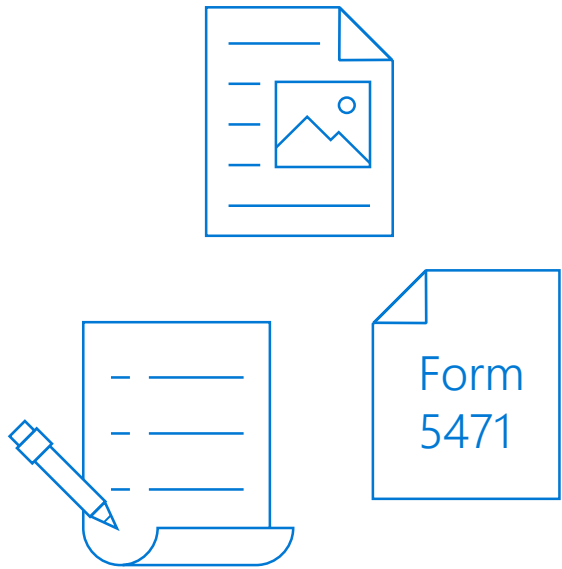
70% of support cases handled by AI



Automatic video recommendation based on article content **increased views by 4%** and **completion rate to 80%**

Knowledge Mining

What is knowledge mining?



**Unlock valuable
information lying latent
in all your content**

Knowledge mining with Azure Search

Documents



Key Phrase extraction



Organization entity extraction



Face detection



Custom skills



Location entity extraction



Persons entity extraction



Celebrity recognition



Landmark detection



Sentiment analysis



Language detection



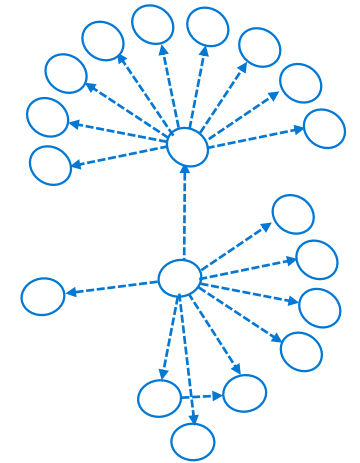
Tag extraction



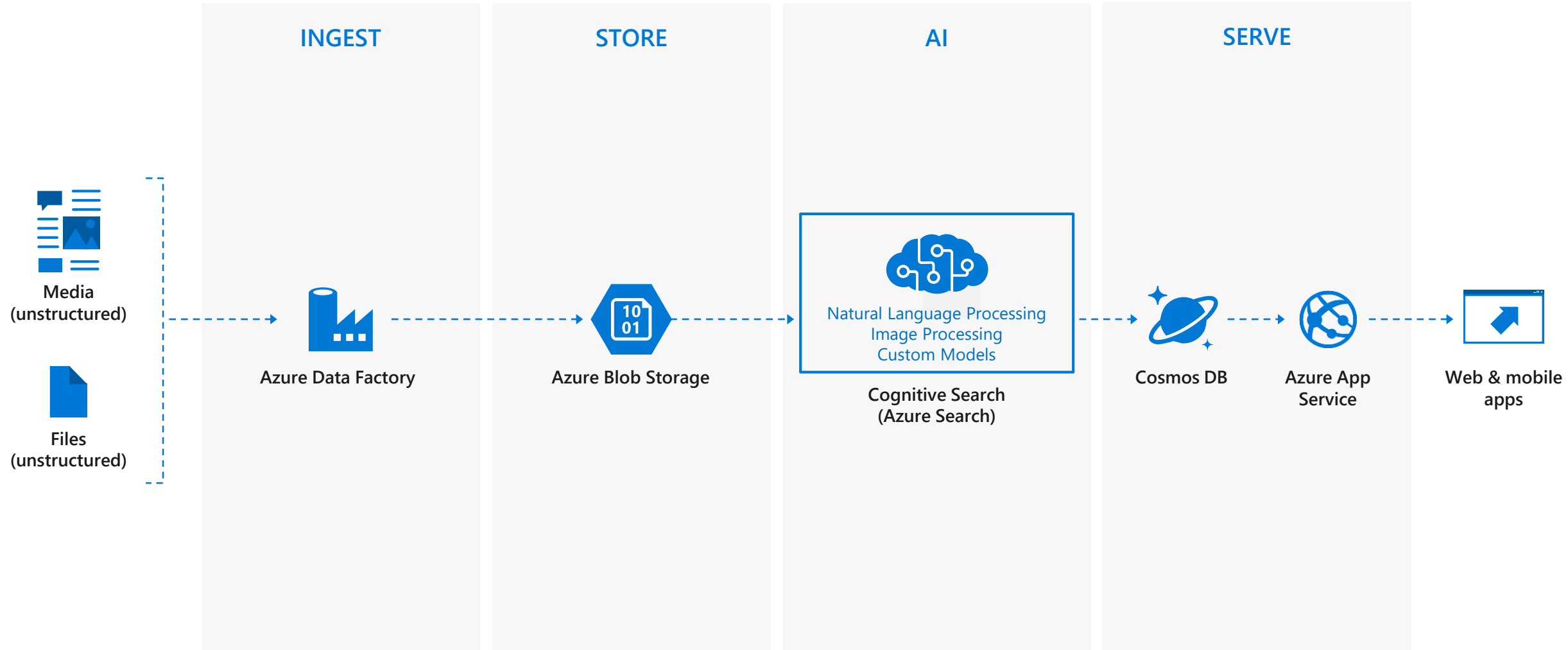
Printed text recognition



Fully text-searchable rich index



Knowledge mining: Reference Architecture



Customer examples



auto
TRADER.ca

Canada's largest automobile search
site drives seamless search experience



audioburst

Audio AI experts use cloud-based
search platform to connect listeners
to audio content



 **JLL**

Prime property listings site powered
by cloud-based search and analytics

Machine Learning

Machine learning on Azure

Sophisticated pretrained models

To accelerate solution development with easy to use pretrained models



Vision



Speech



Language



Search

Cognitive Services

Popular frameworks

Build sophisticated deep learning solutions



Pytorch



TensorFlow



Keras



Onnx

Productive services

Empower your development teams



Azure
Databricks



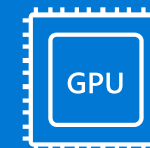
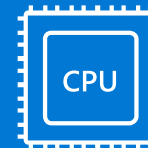
Azure
Machine Learning



Machine Learning
VMs

Powerful infrastructure

Accelerate time to value





Popular frameworks

Build sophisticated 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

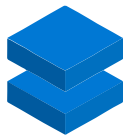
Empower your development teams



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

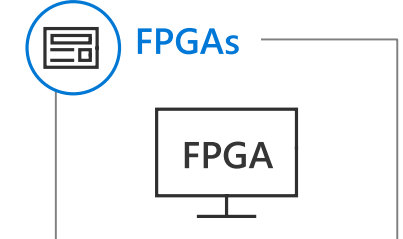
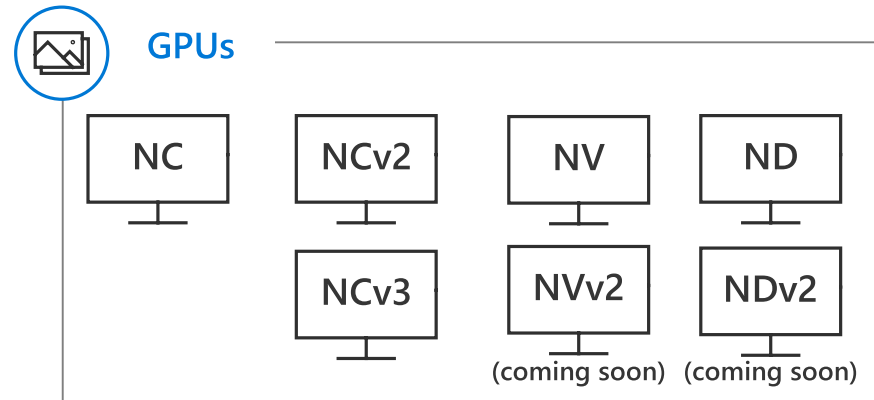
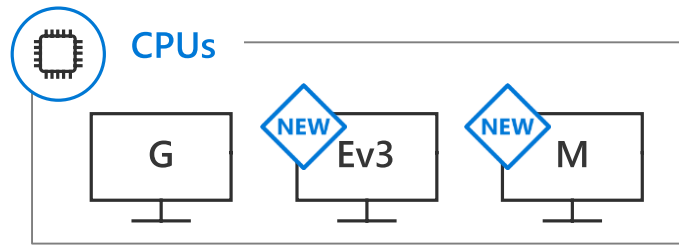
Track experiments for reproducibility and auditing needs. Identify and promote your best models

Deploy and manage your models using containers to run them anywhere



Powerful infrastructure

Accelerate time to value



Customer examples



asos

13M personalized experiences with
33 orders/second



**Rockwell
Automation**

\$300k/day cost savings with
predictive maintenance



quarterspot

85% savings in risk calculation &
under-writing costs

50% lower loan defaults

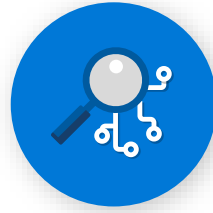
Azure AI

AI apps & agents



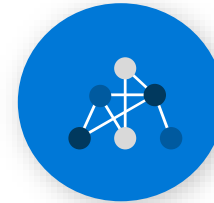
Azure Bot Service
Azure Cognitive Services

Knowledge mining



Azure Cognitive Search

Machine learning



Azure Databricks
Azure Machine Learning
Azure AI infrastructure

Hands-on Lab

Task 1: Sign in at <https://studio.azureml.net>

Task 2: Download a data file from
<https://github.com/JackXueIndiana/Presentation/blob/master/Lemonade.csv>

Task 3: Build a regression model to predict
lemonade sales

Thank you