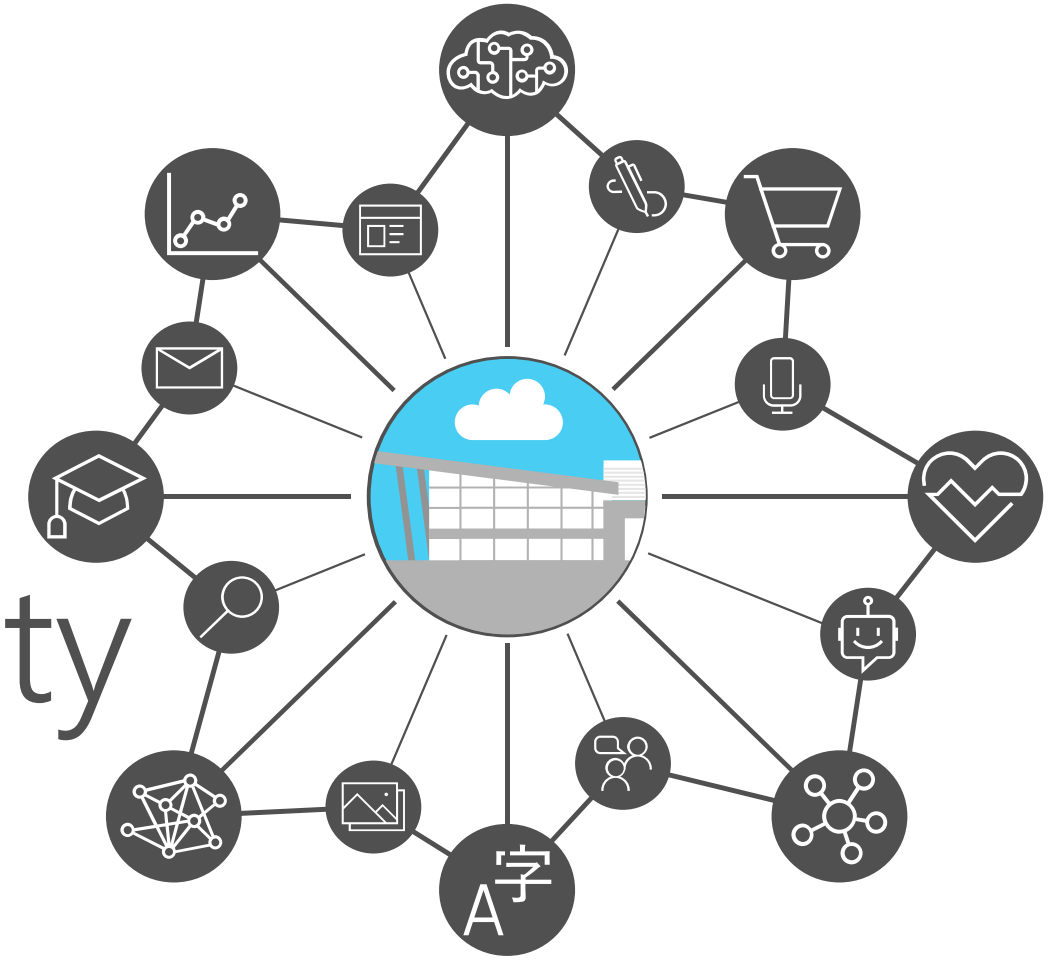
Microsoft

Redmond Interoperability Plugfest 2018



Artificial Intelligence: Changing the Game for Everyone

Darwin Schweitzer

Pele changed the game of Soccer

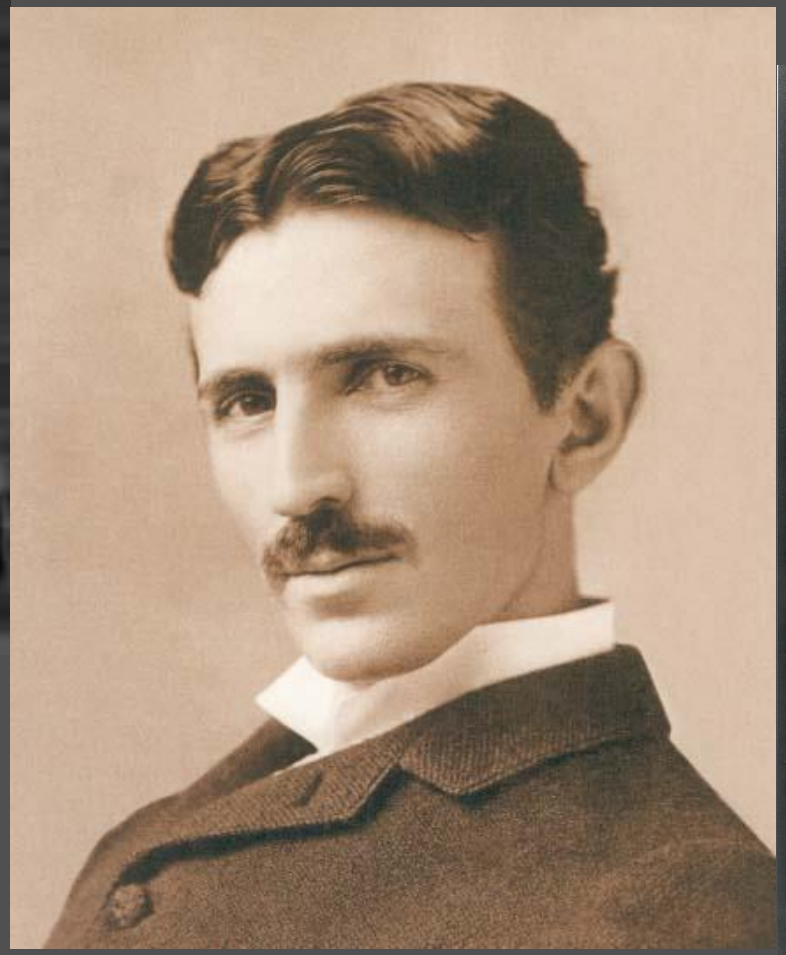

Flatiron Building
New York City
1905

20 years later

Artifacts of the Industrial Revolution

Massachusetts Bay Transportation Authority
Boston Subway 1897
NY Subway 1904

Thomas Edison



Nikola Tesla

Frank J Sprague

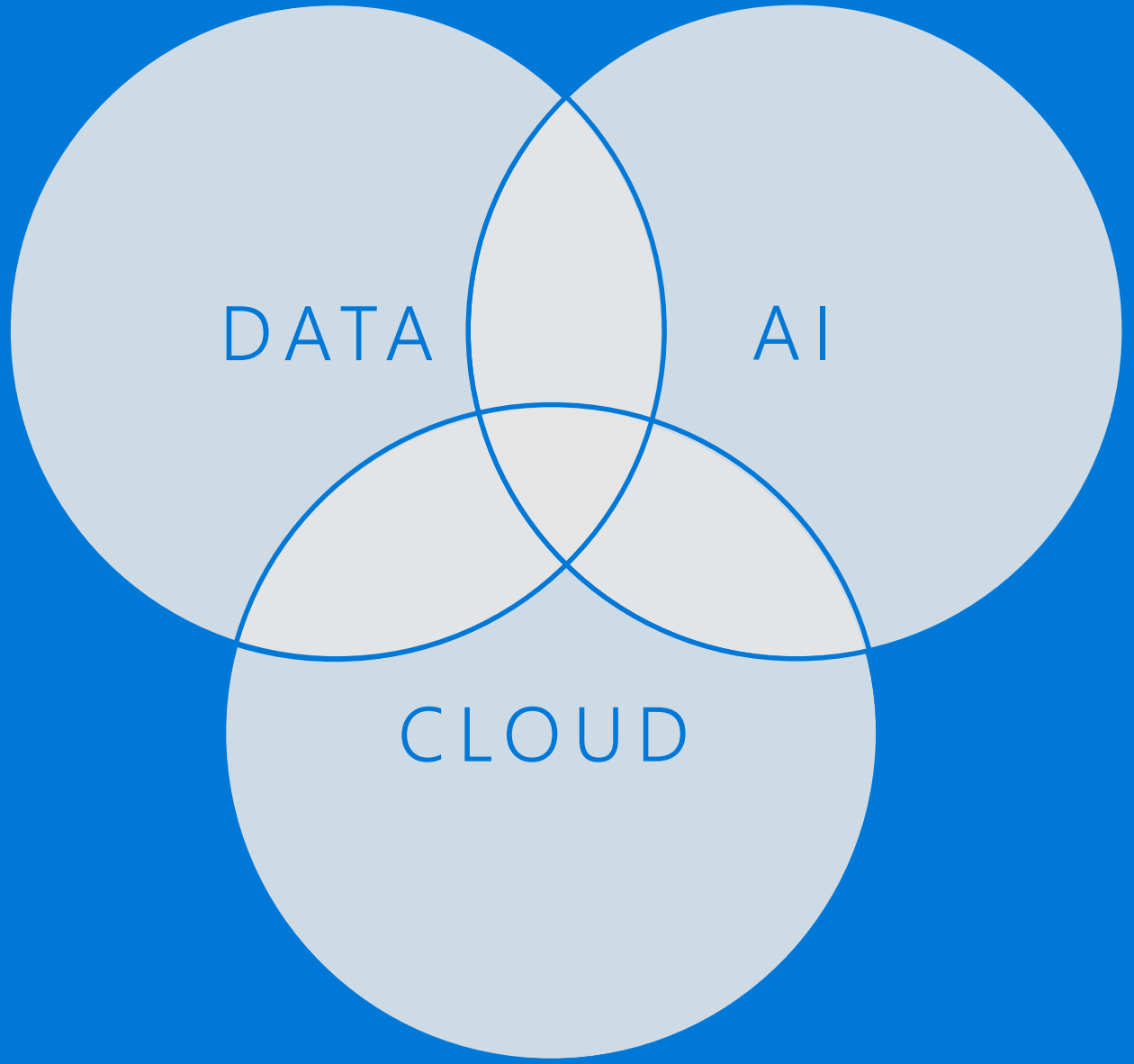
The New Electricity Andrew Ng - The State of Artificial Intelligence

Just as electricity transformed almost everything 100 years ago, today I actually have a hard time thinking of an industry that I don’t think AI will transform in the next several years.

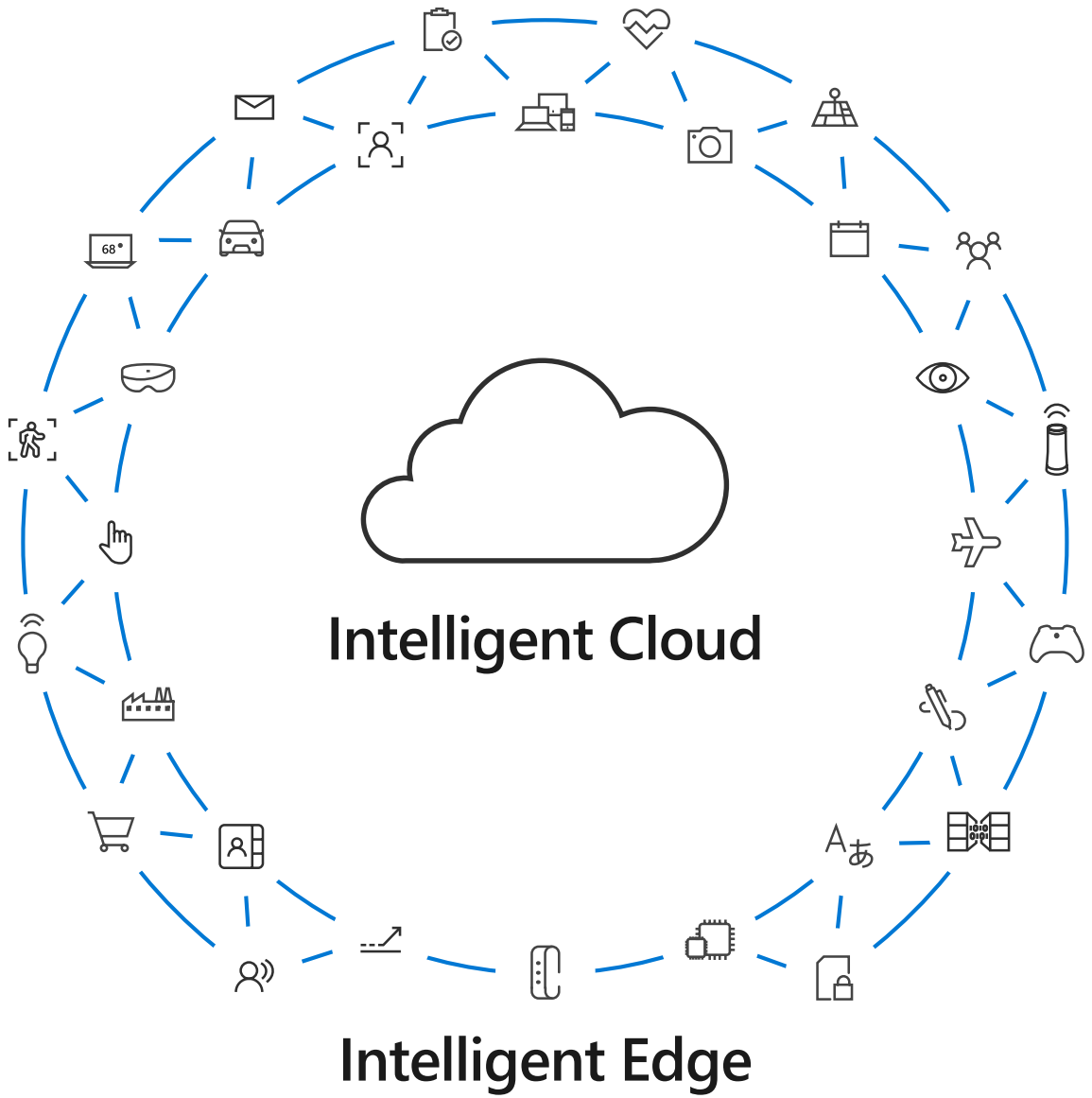
- **Andrew Ng**

https://www.gsb.stanford.edu/insights/andrew-ng-why-ai-new-electricity

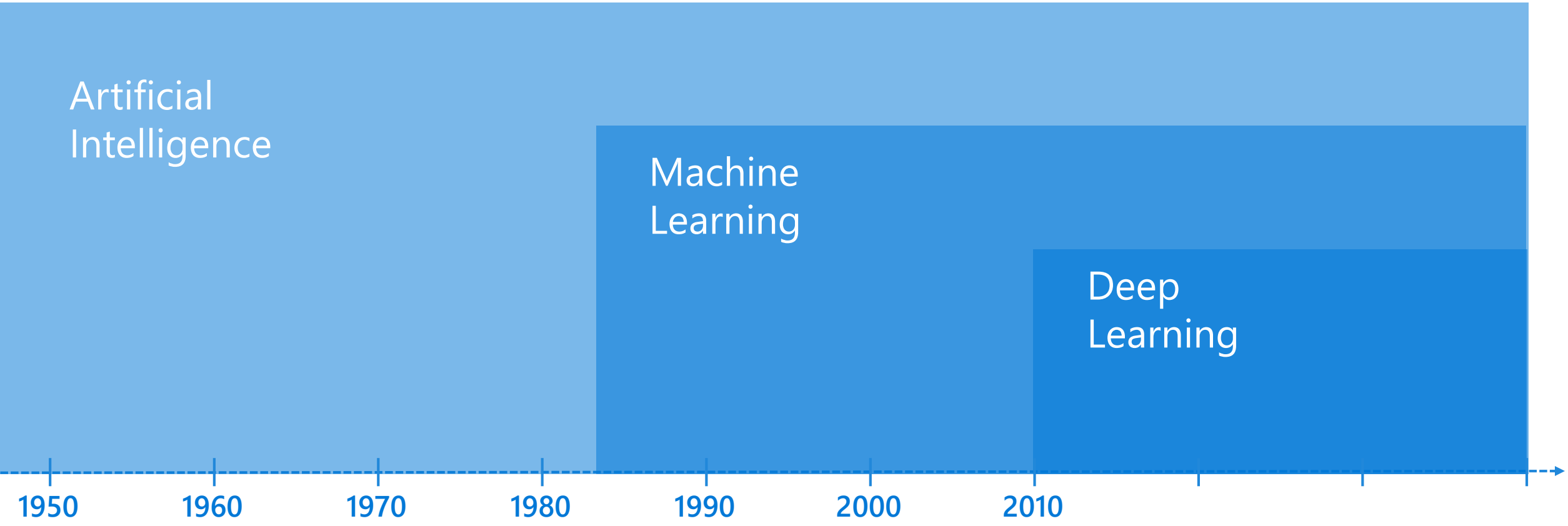
Organizations that harness data, cloud, and AI outperform



Artificial Intelligence



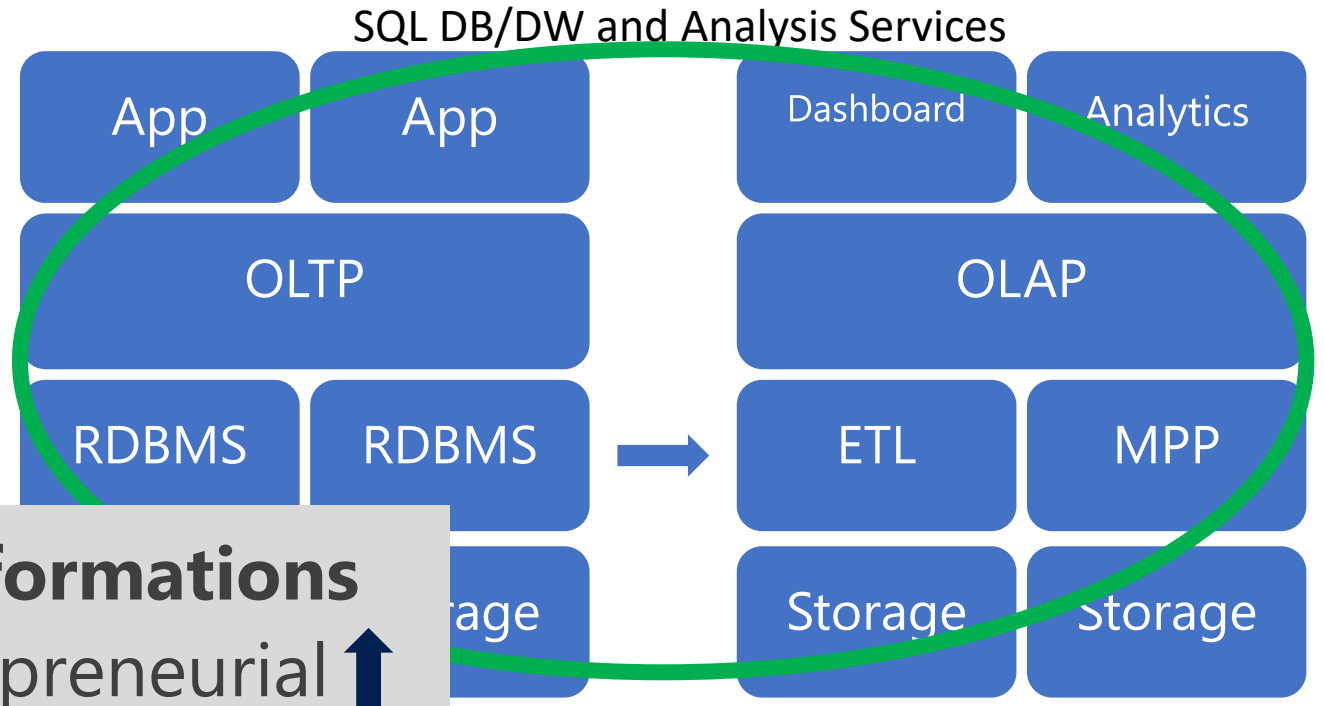
AI, Machine Learning and Deep Learning



AI is changing the game for everyone

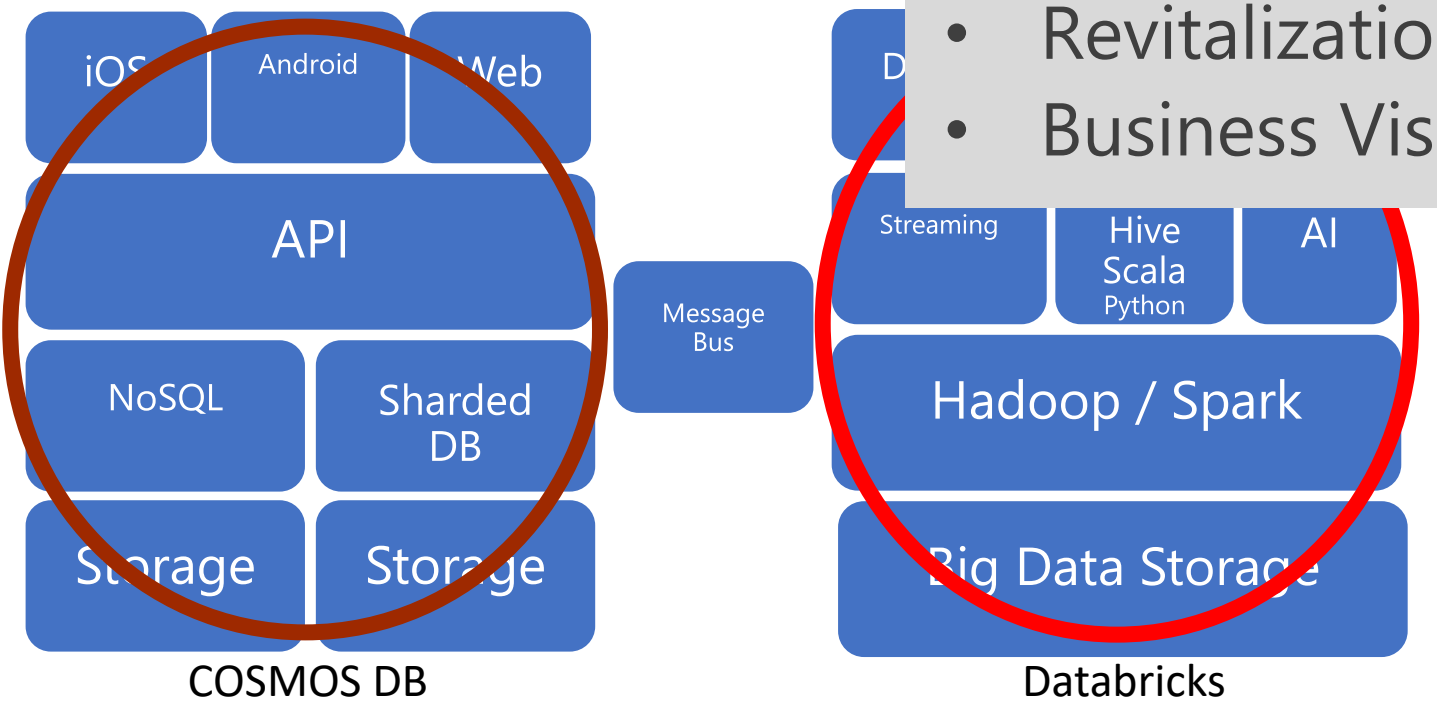
- **Classic and Cloud-born organizations**
- **Customers**
- **Partners**
- **Employees**
  - Managers
  - Customer-facing staff
  - Developers
  - Data Engineers
  - Data Scientists

Classic Analytics
Transaction-driven



Transformations

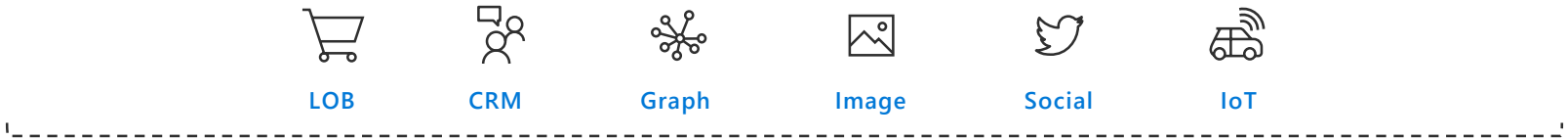
- Entrepreneurial
- Revitalization
- Business Vision

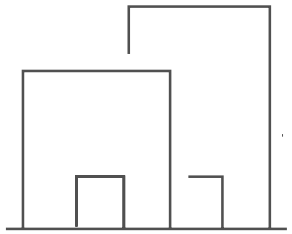


Cloud-born Analytics
Event-driven

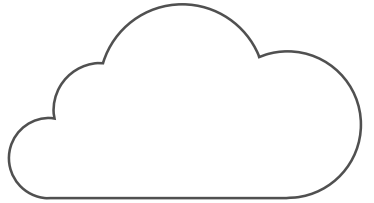
David Chaiken – Chief Architect at Pinterest

The modern data estate





Hybrid



Operational databases

Data warehouses

Data Lakes

Operational databases

Data warehouses

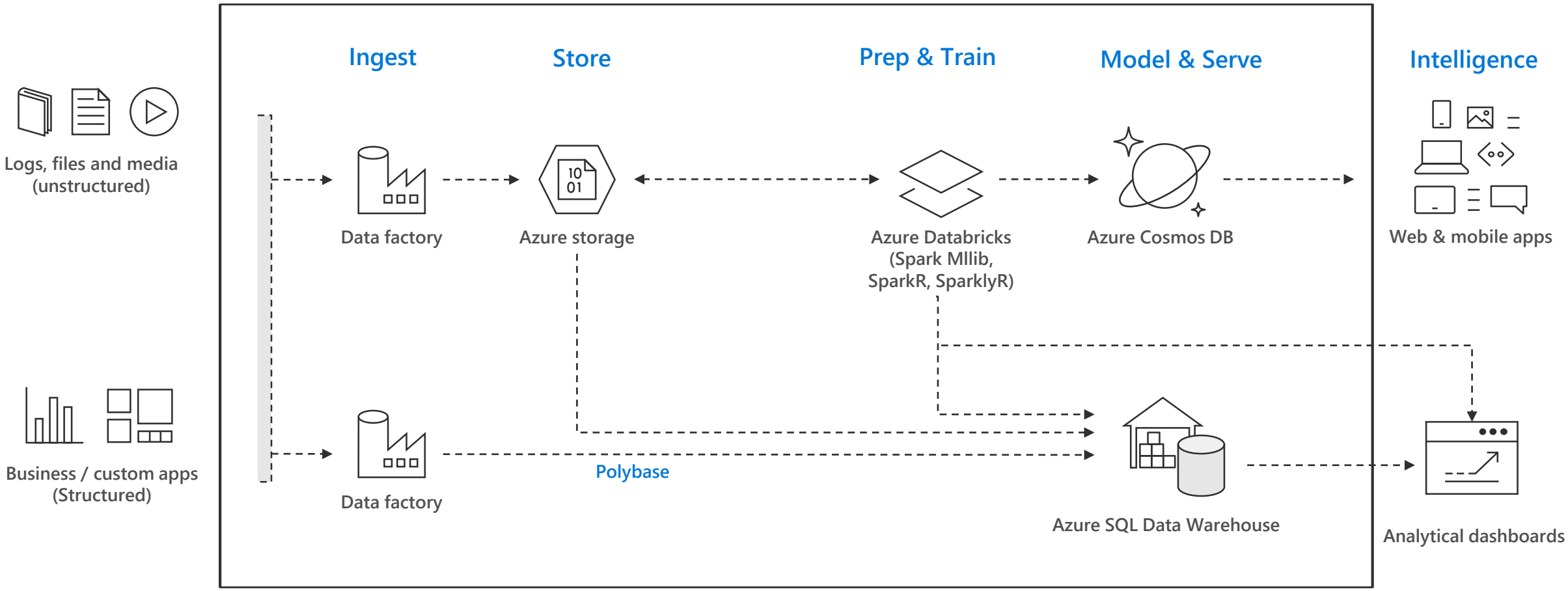
Data Lakes

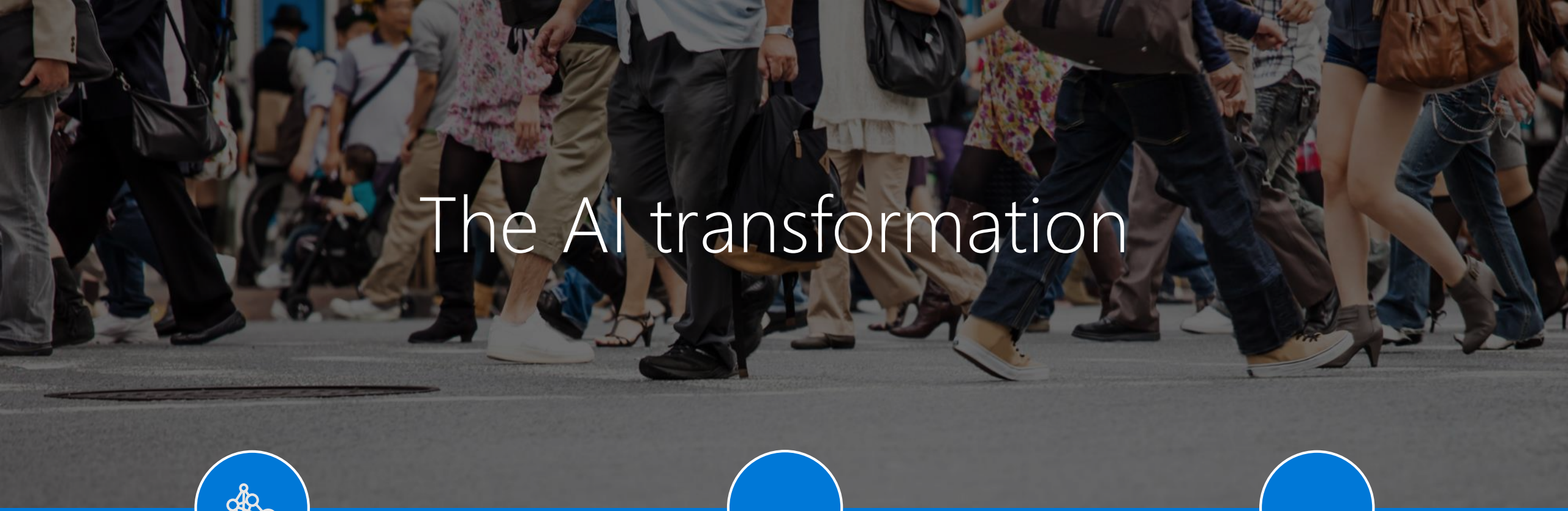
Reason over any data, anywhere

Flexibility of choice

Security and performance

Advanced Analytics on Big Data





The AI transformation

Digital Agents

Transform your engagement with customers and employees

Intelligent Apps

Leverage AI to create the future business applications

Business processes

Transform critical business processes with AI

Source: Forrester, IDC

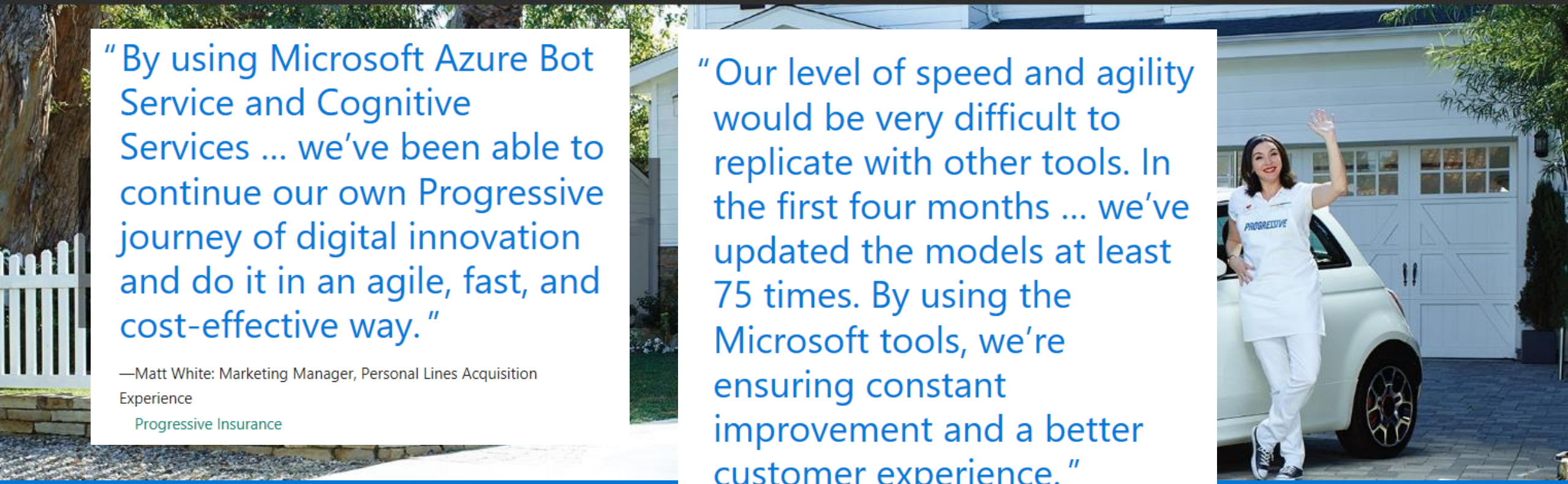
Digital Agents

95% **Customer interactions**
powered by AI bots including telephone and online by 2025

Engage customers
Build a loyal customer base with a 24/7 customer-centric approach to your business

Empower employees
Increase employee productivity and allow for focus on innovation by freeing up time through automation


Litware Insurance
Search
Contact Us
Auto
Commercial
Collector
RV
Motorcycle
Claim
Login
Register
Litware Insurance
Car Insurance
We offer different levels of coverage to respect your wallet, suit your lifestyle, and protect your vehicle.
Get Started
Choose the right insurance
Full Coverage
Coverage for accidents, natural disasters, fire, theft, damage to someone else's property, and
Comprehensive Coverage
Coverage for accidents, natural disasters, fire, theft, damage to someone else's proper
Liability Coverage
Coverage for damage to someone else's
Live Chat



"By using Microsoft Azure Bot Service and Cognitive Services … we've been able to continue our own Progressive journey of digital innovation and do it in an agile, fast, and cost-effective way."

—Matt White: Marketing Manager, Personal Lines Acquisition Experience

Progressive Insurance

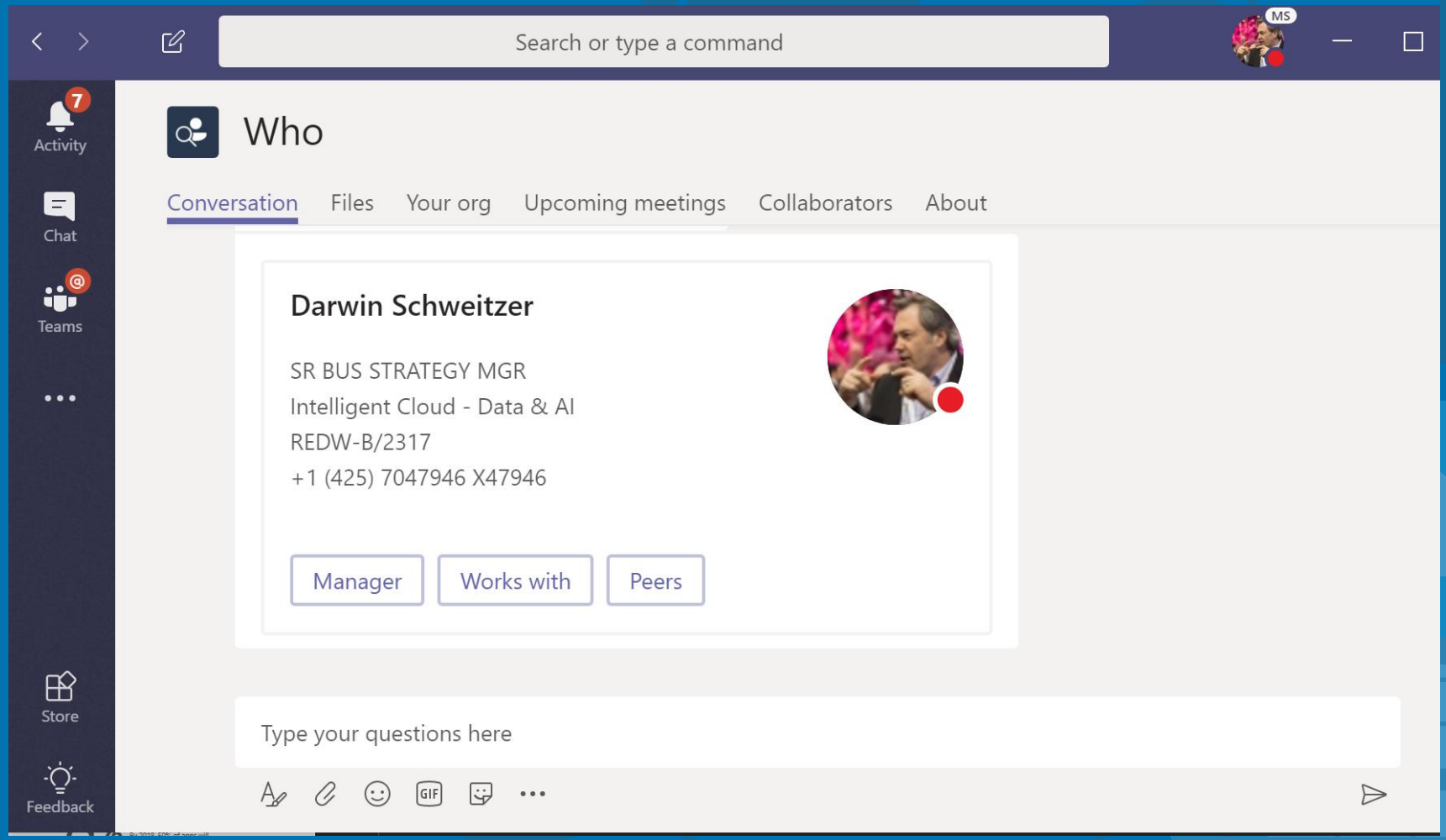
"Our level of speed and agility would be very difficult to replicate with other tools. In the first four months … we've updated the models at least 75 times. By using the Microsoft tools, we're ensuring constant improvement and a better customer experience."

—Matt White: Marketing Manager, Personal Lines Acquisition Experience

Progressive Insurance

PROGRESSIVE®

Demos
Teams
Who Bot



Intelligent apps

75%

Applications including AI

By 2018, 50% of apps will include some form of AI

App innovation

Infuse AI into existing apps to improved user experience

Knowledge extraction

Backend-infused applications will leverage latent value in content

Microsoft Build 2018 – AI and JFK get the NBA out of its data swamp

By Stuart Lauchlan May 8, 2018

SUMMARY: The NBA was sinking in a data swamp. The solution – a smart data platform and a dash of AI.

0 Comments

According to Garth Case, Vice-President for IT at the National Basketball Association (NBA), after 20 years with the organization, there's one question that he gets asked all the time:

> *Have I met Michael Jordan, Shaq, Kobe or LeBron? I'm lucky enough to say yes to all of that, I have.*

Garth Case

https://diginomica.com/2018/05/08/microsoft-build-2018-nba-shoots-scores-digital/

JFK Files Demo

https://github.com/Microsoft/AzureSearch_JFK_Files

Transform you business processes

85%

Enterprises embracing AI

By 2020, 85% of Enterprises will be using AI on at least one process

Financial Services

Risk Analytics

Fraud Prevention

Customer Next Best Action

Retail

Personalization

Dynamic pricing

Advanced retail planning

Manufacturing

Predictive Maintenance

Operations Automation

Fleets management

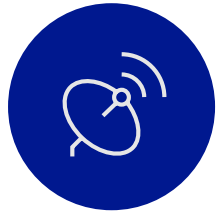
Transform your business processes

Industry verticals

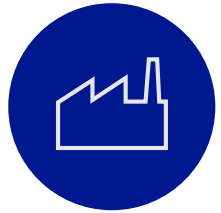
Banking

Health

Retail



Telco



Manufacturing

Business processes

Sales

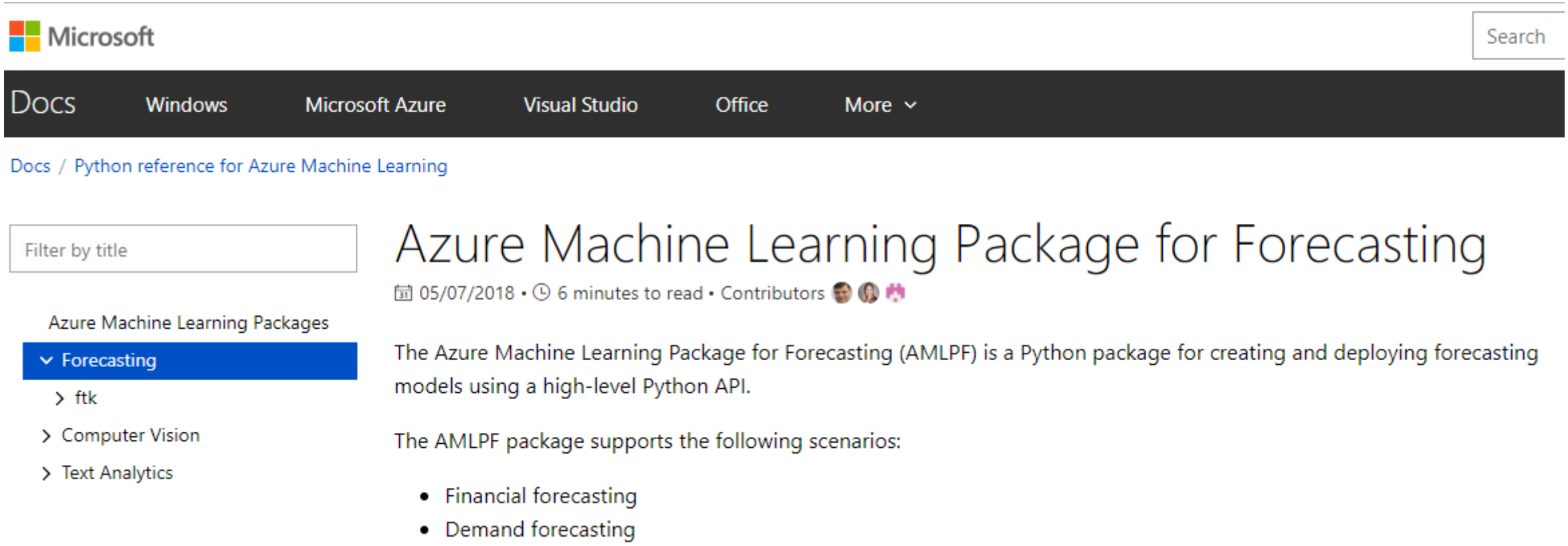
Marketing

Customer service

HR

Finance

Azure Machine Learning Package for Forecasting



https://docs.microsoft.com/en-us/python/api/overview/azure-machine-learning/forecasting-overview?view=azure-ml-py-latest

MICROSOFT AI PLATFORM

Azure AI Services

PRE-BUILT AI

Cognitive Services

CONVERSATIONAL AI

Bot Service

CUSTOM AI

Azure Machine Learning

Azure Infrastructure

AI ON DATA

Cosmos DB

SQL DB

SQL DW

Data Lake

AI COMPUTE

Spark

DSVM

Batch AI

ACS

IoT Edge

CPU, FPGA, GPU

Tools

CODING & MANAGEMENT TOOLS

VS Tools for AI

Azure ML Studio

Azure ML

Others (PyCharm, Jupyter Notebooks…)

DEEP LEARNING FRAMEWORKS

3rd Party

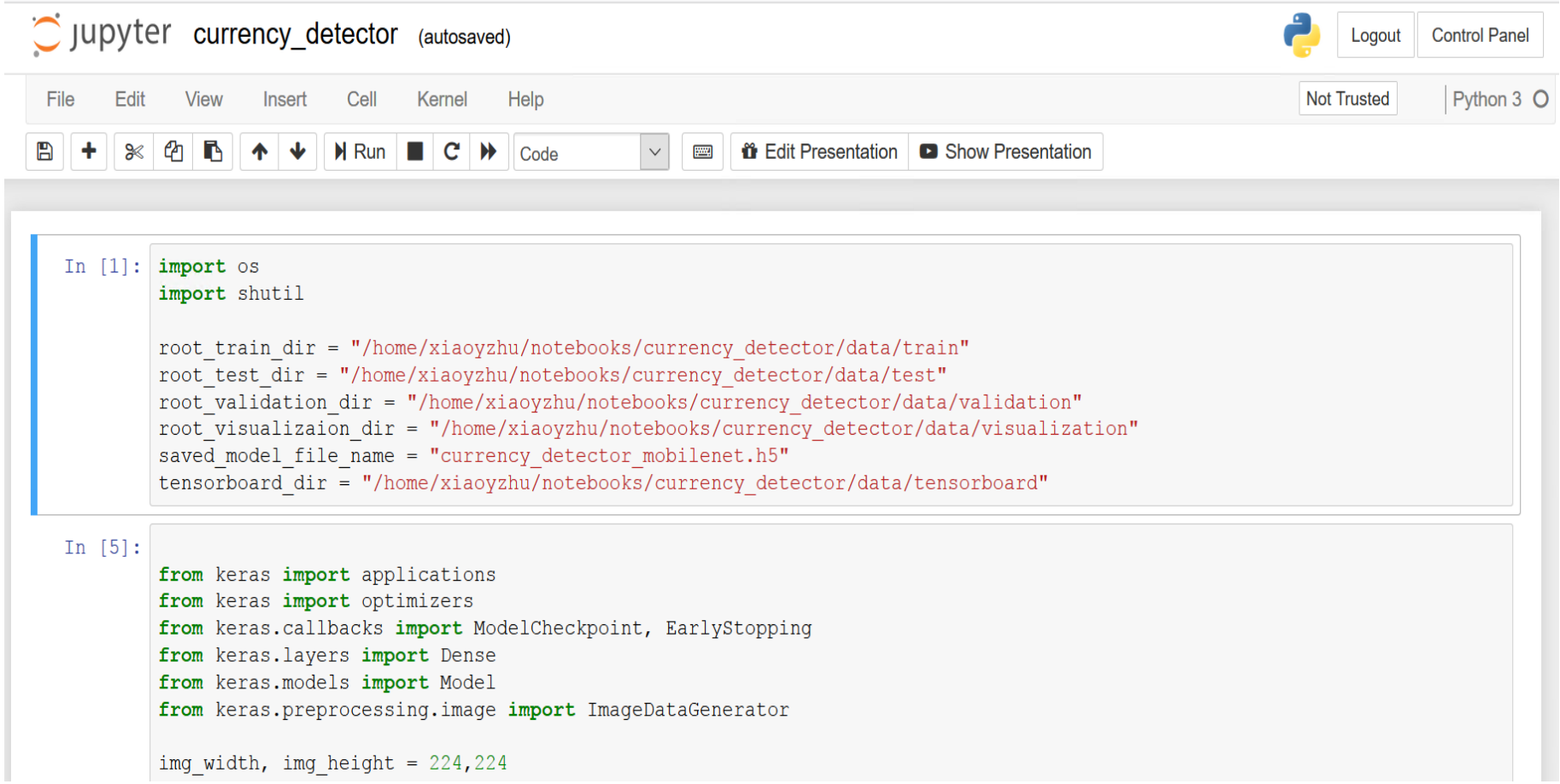
Cognitive Toolkit

TensorFlow

Caffe

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

Jupyter Notebooks



Visual Studio Tools for AI

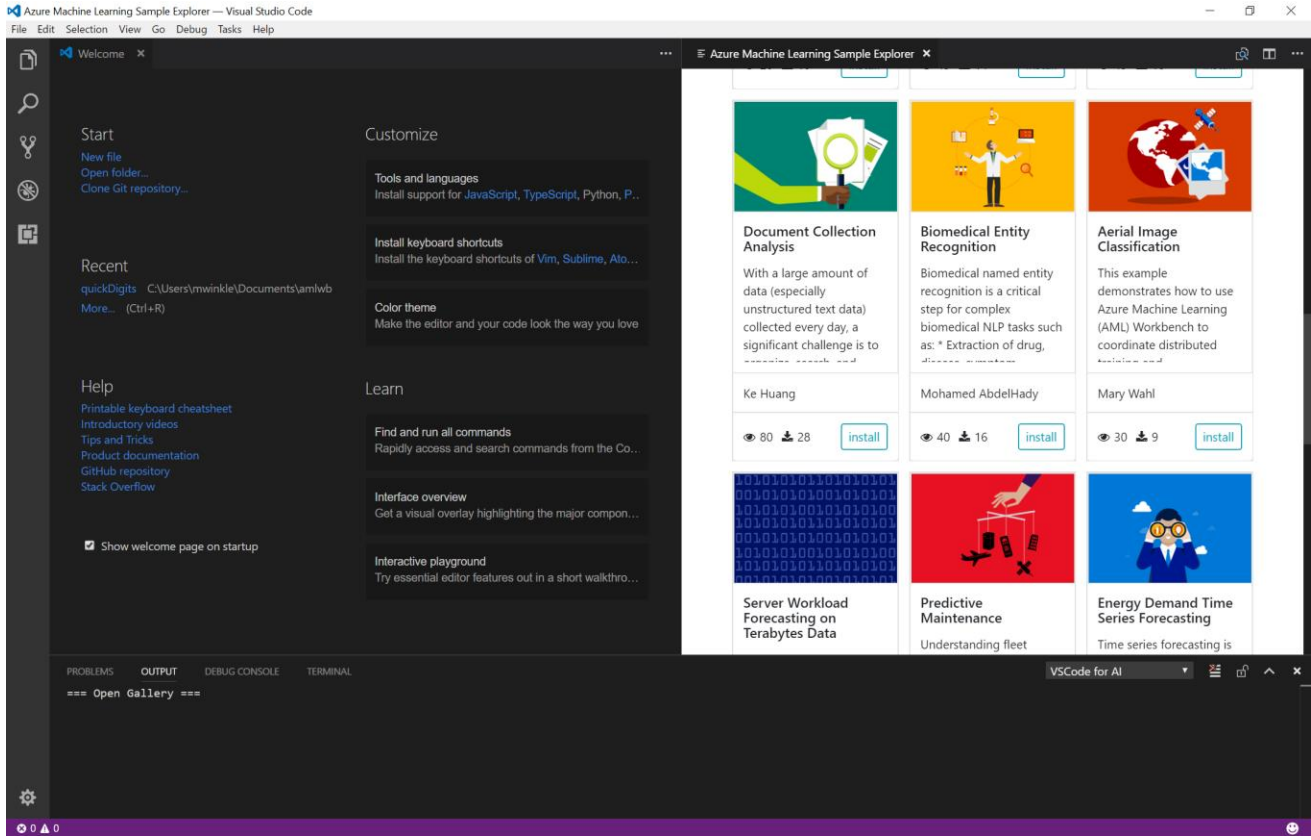
Visual Studio extension with deep integration to Azure ML

End to end development environment, from new project through training

Support for remote training

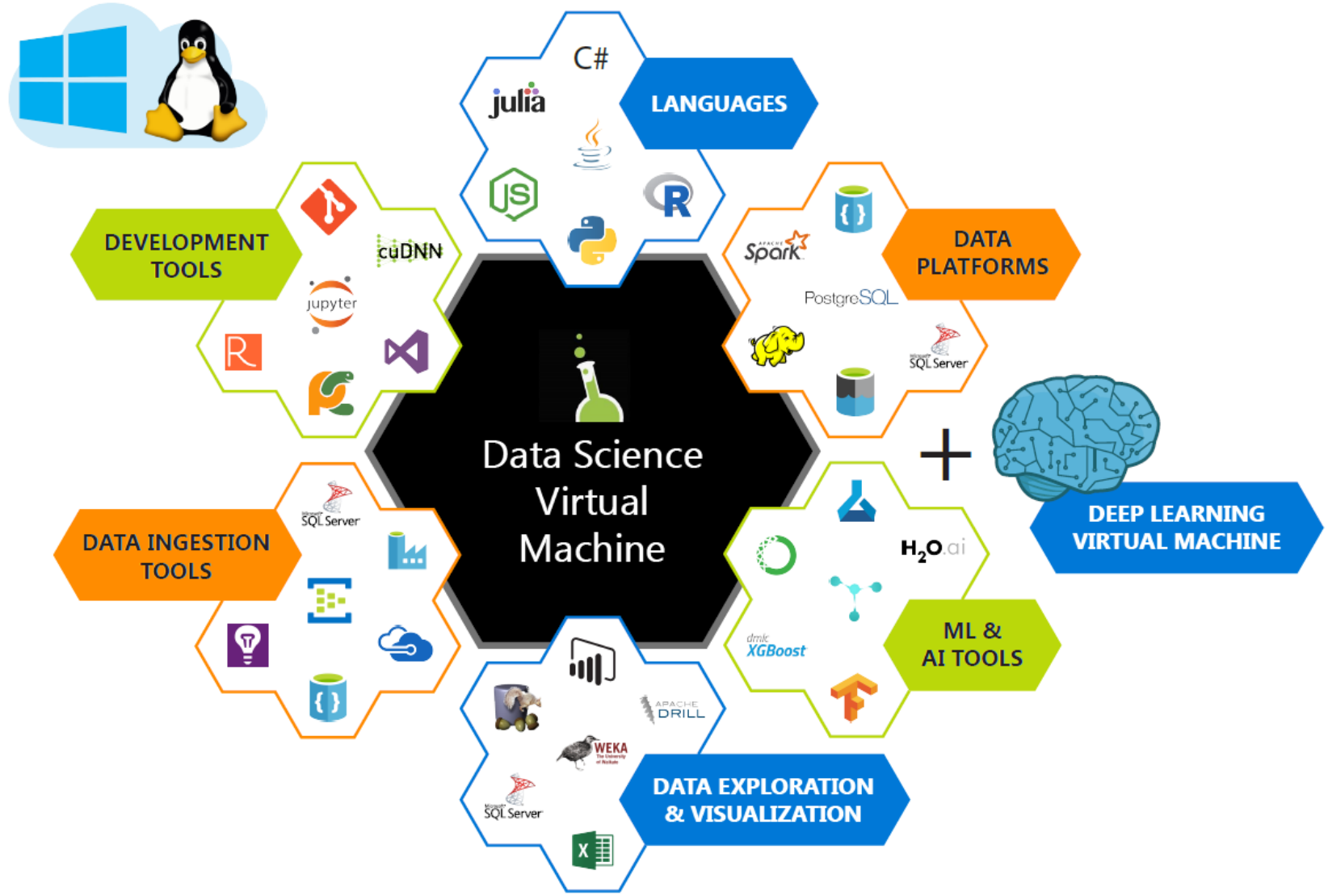
Job management

On top of all of the goodness of Visual Studio (Python, Jupyter, Git, etc)

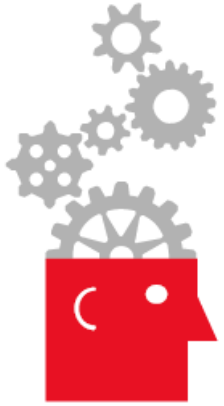


Data Science Virtual Machines (DSVM)

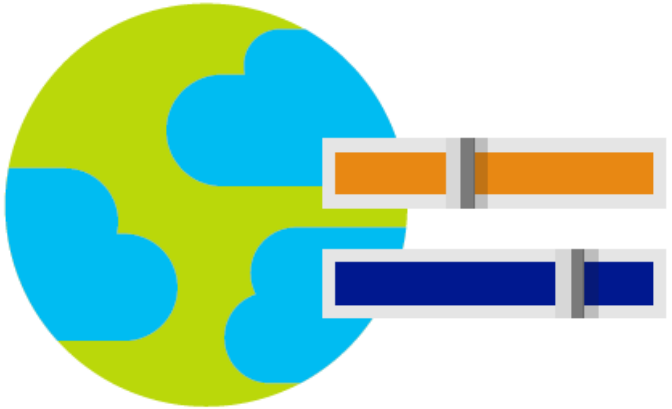
Pre-Configured environments in the cloud for Data Science & AI Modeling, Development & Deployment.



Analytics desktop in the cloud



Data science training and education



On-demand elastic capacity

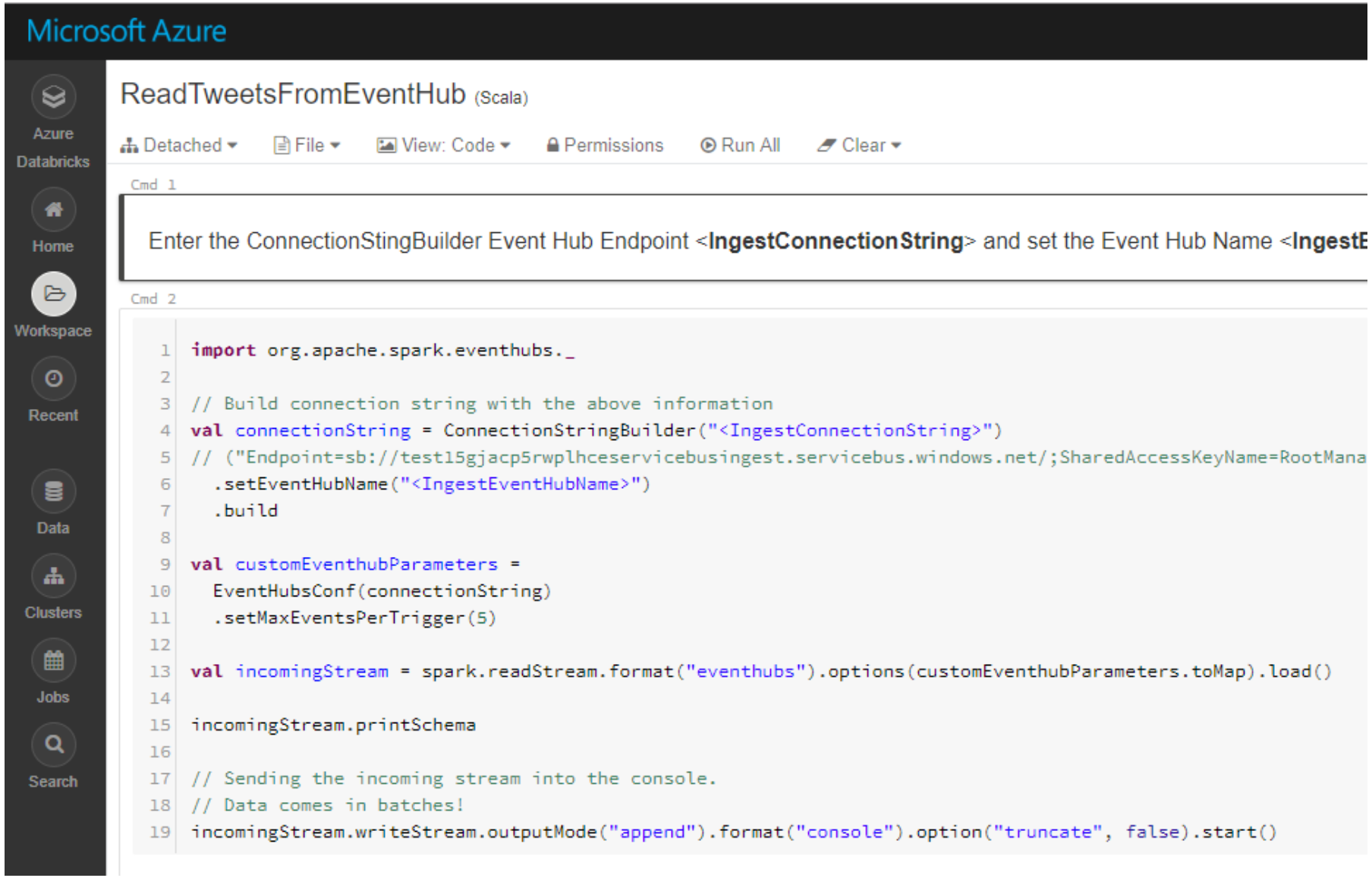
Why Data Science VMs ?

Examples & Templates
to get started

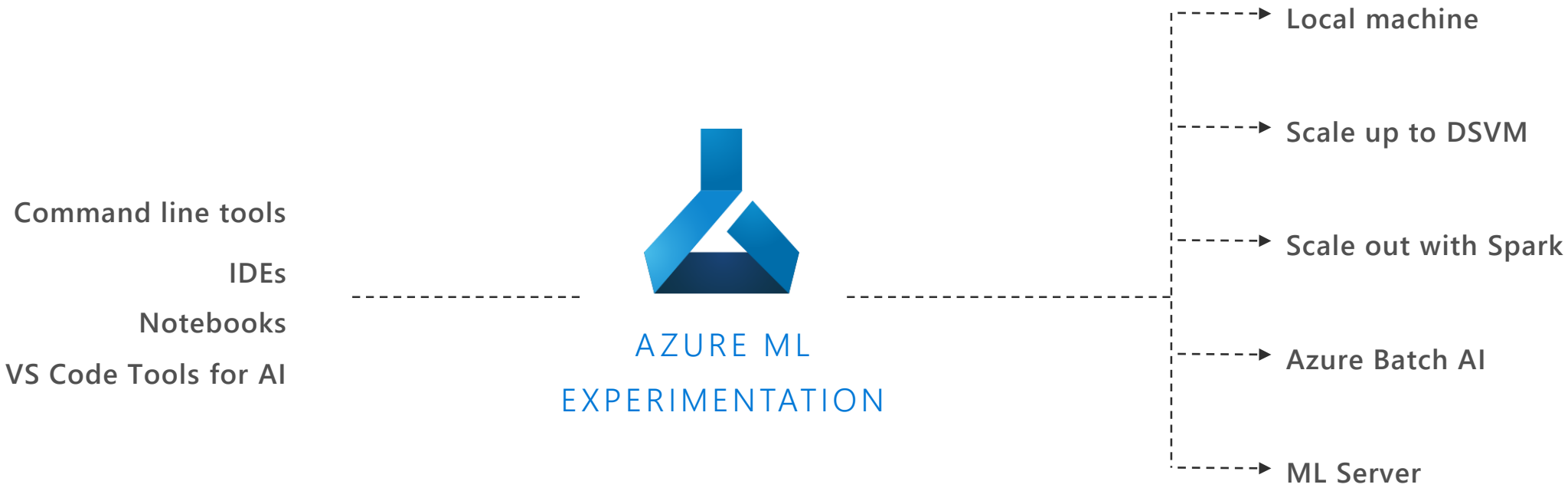
Deep Learning with GPUs

Highly Parallelized scalable AI
Training with Azure Batch

Azure Databricks Notebooks



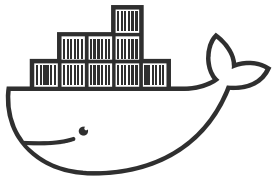
Experiment Everywhere



Deploy Everywhere

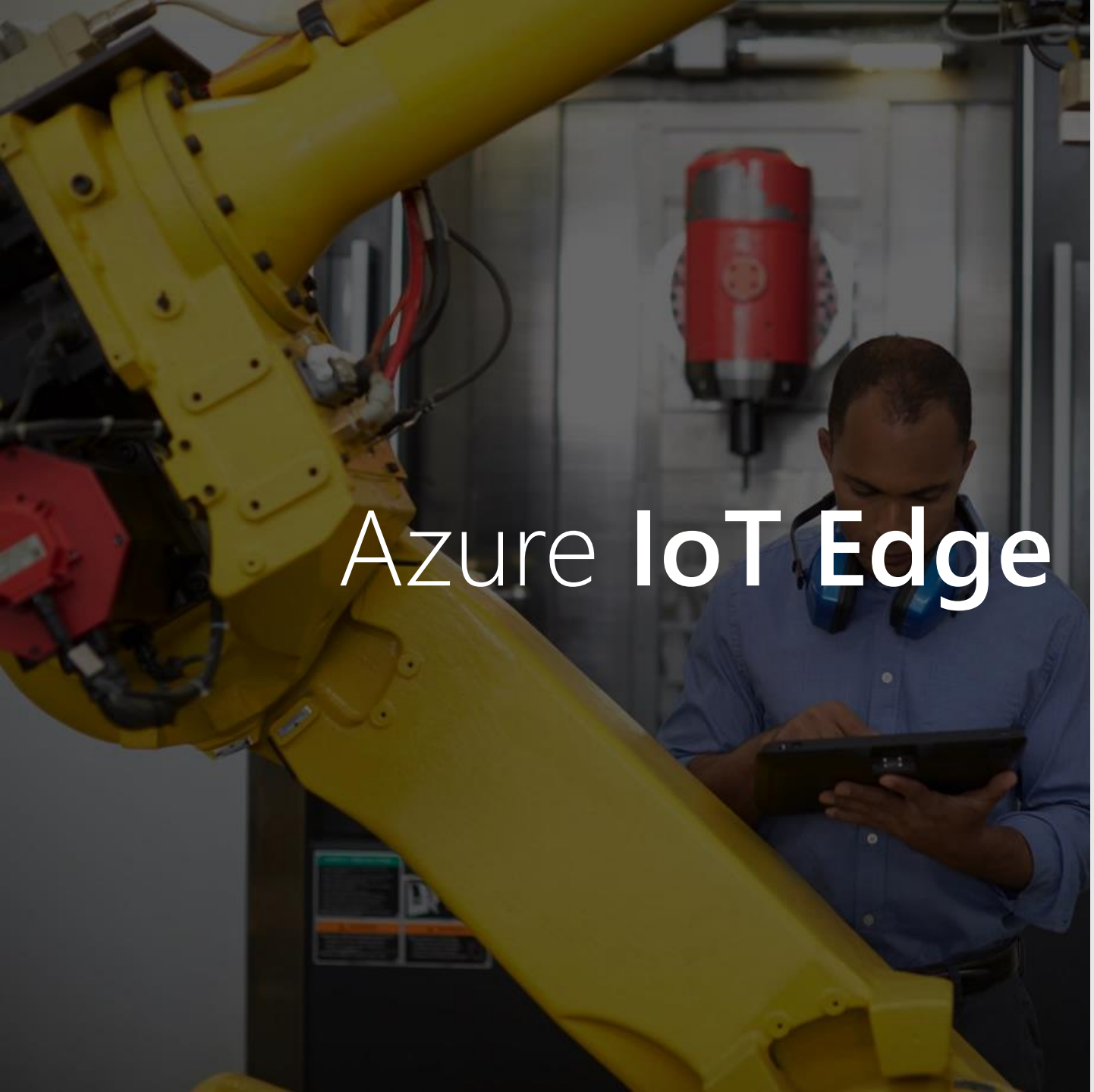
AZURE ML

MODEL MANAGEMENT



DOCKER

- Single node deployment (cloud/on-prem)
- Azure Kubernetes Service (AKS)
- Azure IoT Edge
- Microsoft ML Server
- Spark clusters
- SQL Server



Azure **IoT Edge**

- Move cloud and custom workloads to the edge, securely
- Seamless deployment of AI and advanced analytics
- Configure, update and monitor from the cloud
- Compatible with popular operating systems
- Code symmetry between cloud and edge for easy development and testing
- Secure solution from chipset to cloud

Azure IoT edge

Cloud services at the edge

Azure ML, Azure Stream Analytics, Azure Functions, custom

Manage from the cloud

Devices and services from Azure Portal

Flexible connectivity

Intermittent, low, or no connectivity

Reduced latency and cost

Bring compute to the data, reduced bandwidth cost

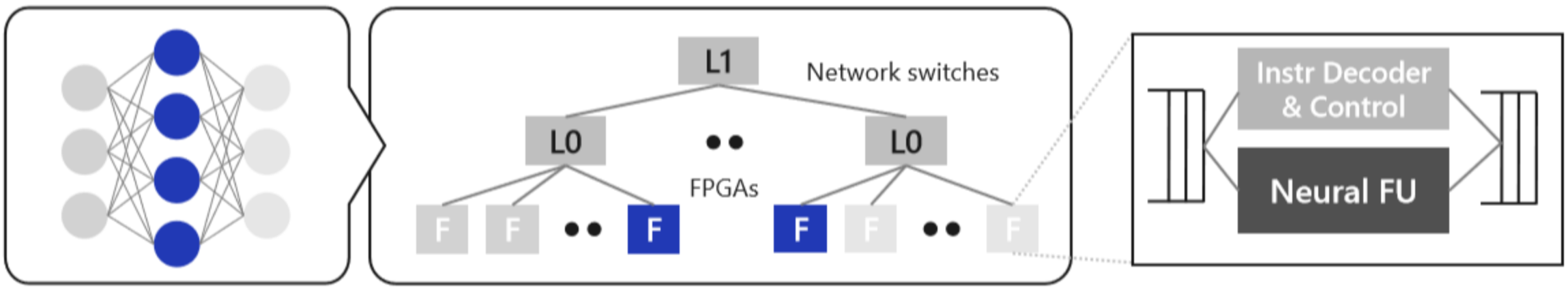
Project BrainWave

A Scalable FPGA-Powered DNN Serving Platform

Fast: Ultra-low latency, high-throughput serving of DNN models at low batch sizes

Flexible: Future proof, adaptable to fast-moving AI space and evolving model types

Friendly: Turnkey deployment of TensorFlow/CNTK/Caffe/etc.



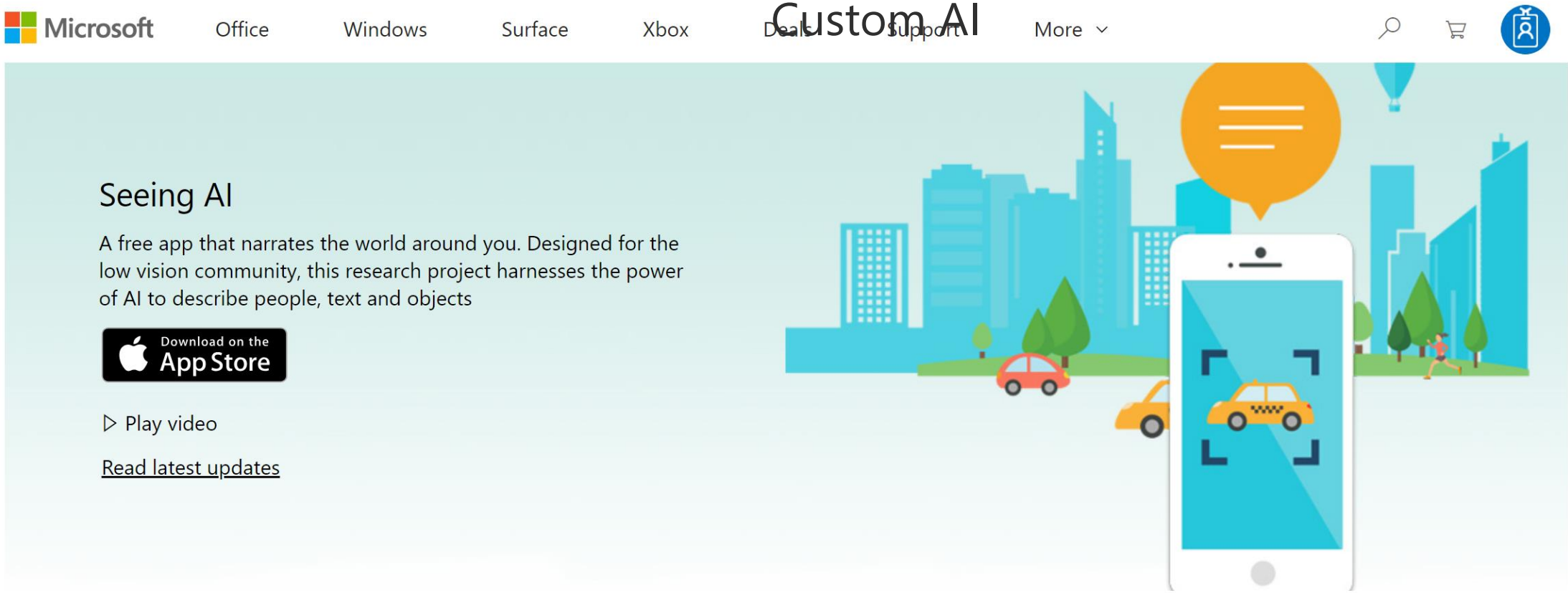
Pretrained DNN Model
in TensorFlow, CNTK, etc.

Scalable DNN Hardware
Microservice

BrainWave
Soft DPU

Seeing AI - Play Video

Please attend my Data Science VM Lab Looking at Currency Detector Deep Learning Custom AI



Complete multiple tasks with one app

Switch between channels to tune the description of what's in front of the camera.

https://www.microsoft.com/en-us/seeing-ai/

Transform individuals to transform business

Accelerate learning and using Try → Learn → Build:

Try

- Demos (IDEA)
  - Introduce
  - Demo
  - Explain
  - Attend

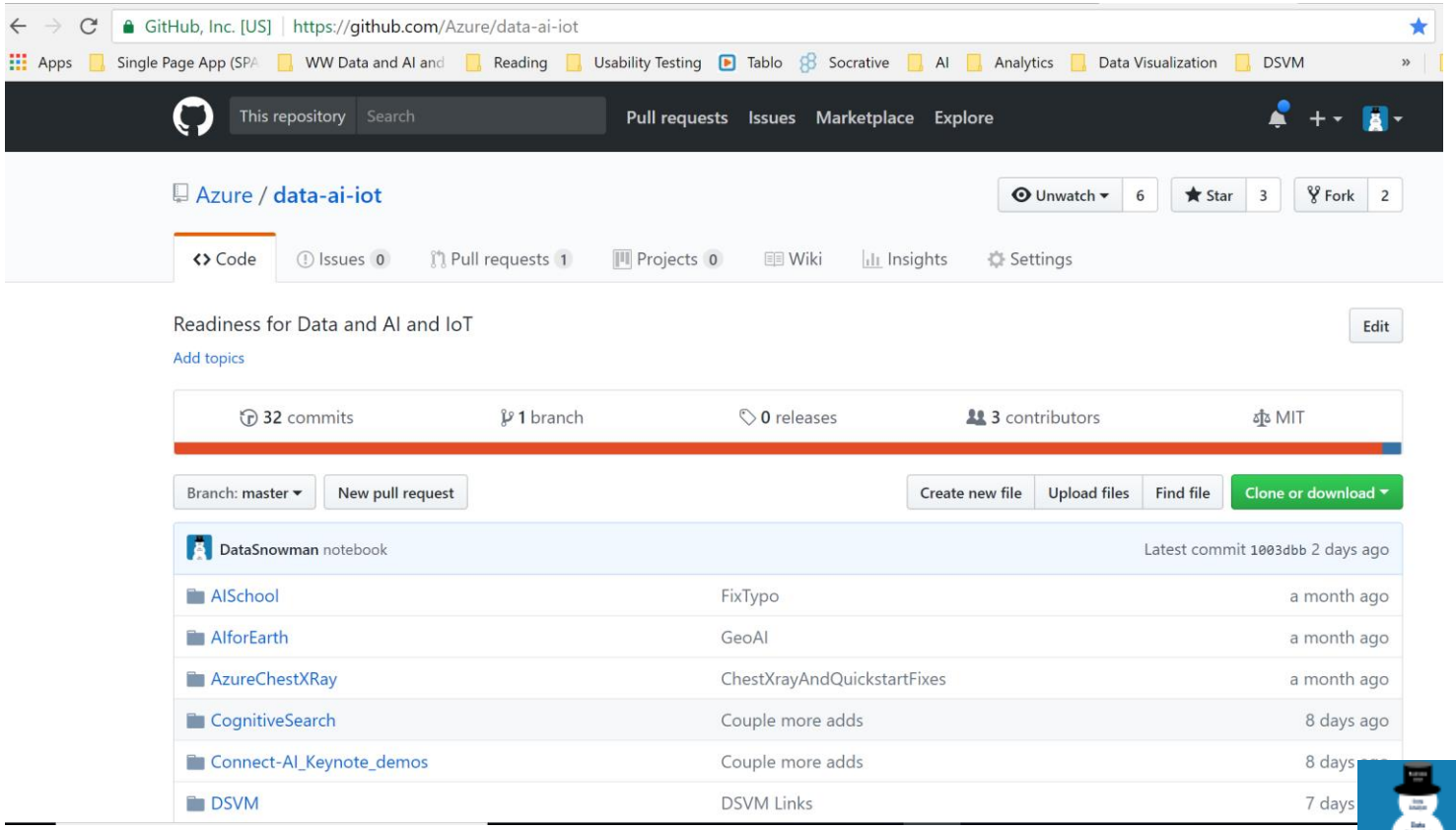
Learn

- GitHub Samples
- Solution Templates
- Data Science VM

Build

- Documentation & Solution Architectures

https://github.com/Azure/data-ai-iot



Transformation of individuals → teams → organizations

Q & A

Darwin Schweitzer | WW INTELLIGENT CLOUD – Big Data / AI Advanced Workload Lead
Worldwide Commercial Business (WCB) – Intelligent Cloud
(425) 638-9068 | darsch@microsoft.com | @DataSnowman | GitHub DataSnowman
Please check out Data and AI and IoT resources at https://github.com/Azure/data-ai-iot

Microsoft

Redmond Interoperability Plugfest 2018

Thank you