Einführung in Azure Machine Learning mit R Integration

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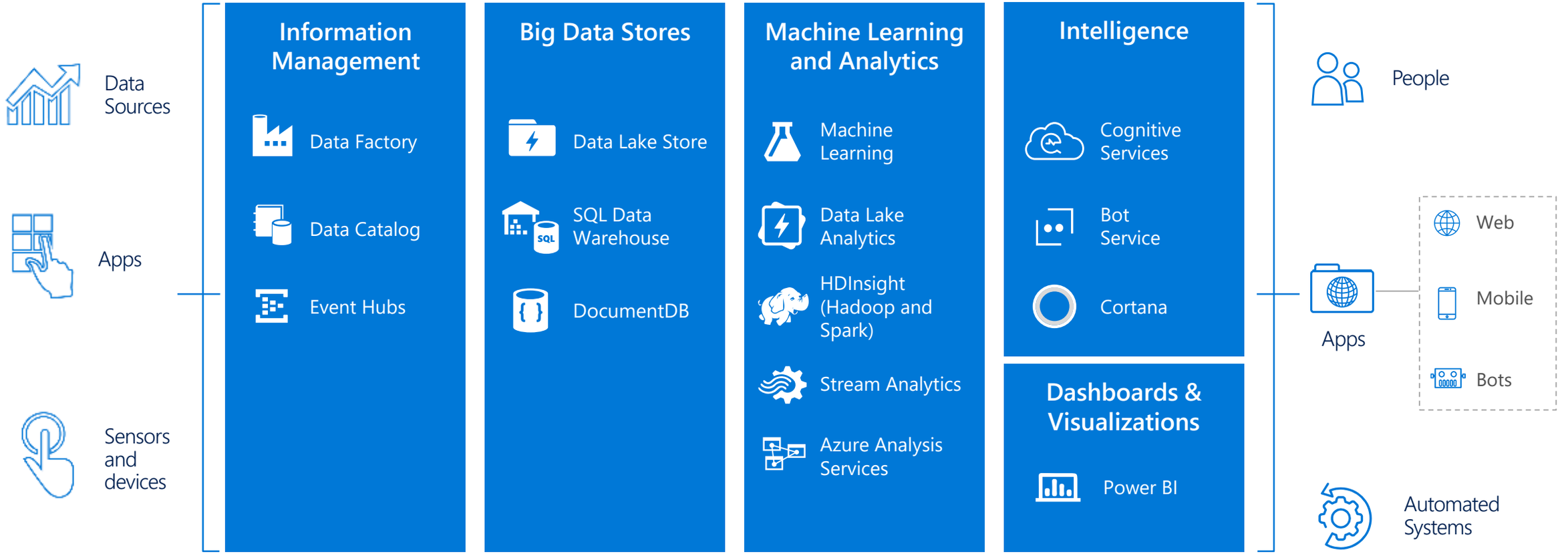
Microsoft

Agenda

- Overview Azure Machine Learning
- Demo: Using R Scripts in Azure Machine Learning Studio
- Demo: Operationalising R with Azure Machine Learning Studio

Easily turn data into intelligent action



> *I need our systems to think.*
> *I need them to learn and*
> *I need them to present issues*
> *and problems and anomalies*
> *to the employees, to the managers.*

Adam Coffey
President and CEO
WASH Laundry Systems

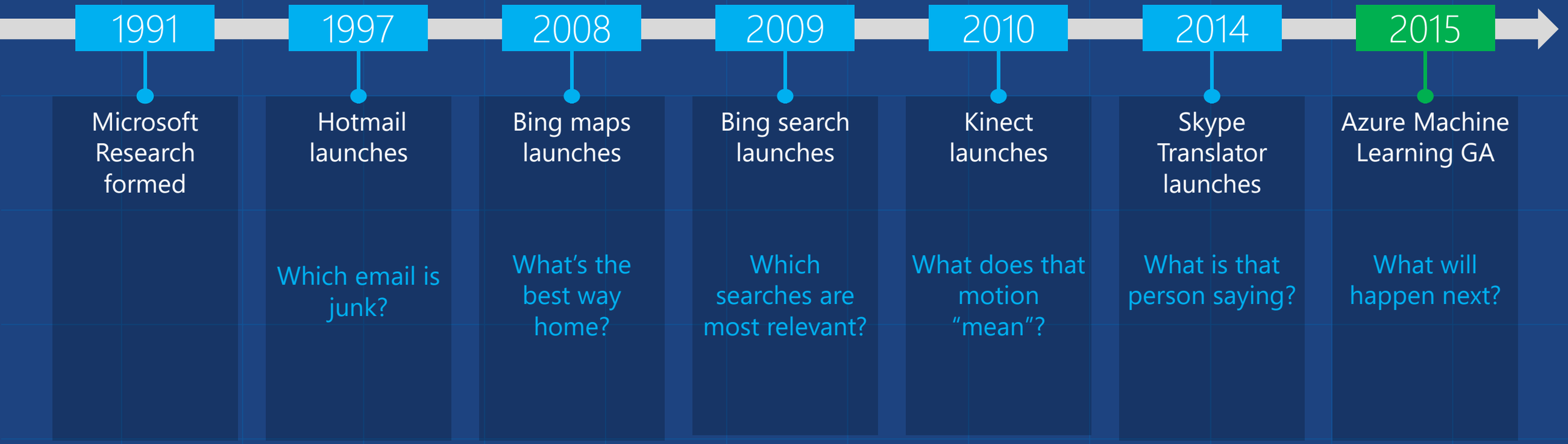
What is Machine Learning?

Computing systems that become smarter with experience

"Experience" =
past data + human input

Microsoft & Machine Learning

Answering questions with experience



Machine learning is pervasive throughout Microsoft products.

“The main benefit we have experienced is that everything is in one place. Data is stored in the same place that hosts computations on the data.”

Corey Coscioni
West Monroe

How Are We Different?

Enable custom predictive analytics solutions at the speed of the market

The old Machine Learning landscape
No improvement in generations

Expensive	Huge set-up costs of tools, expertise, and compute/storage capacity
Siloed data	Siloed and cumbersome data management restricts access to data
Disconnected tools	Complex and fragmented tools limit participation in exploring data and building models
Deployment complexity	Many models never achieve business value due to difficulties with deploying to production

Differentiation

Model Your Way

[Data Scientist]

All Skill Levels

Business-tested Algorithms

R & Python

Deploy in Minutes

[Data Scientist, IT & Developers]

One Click Deployment

Manage via Cloud Portal

Model accessed as a Web Service

Expand your Reach

[Ecosystem & Developers]

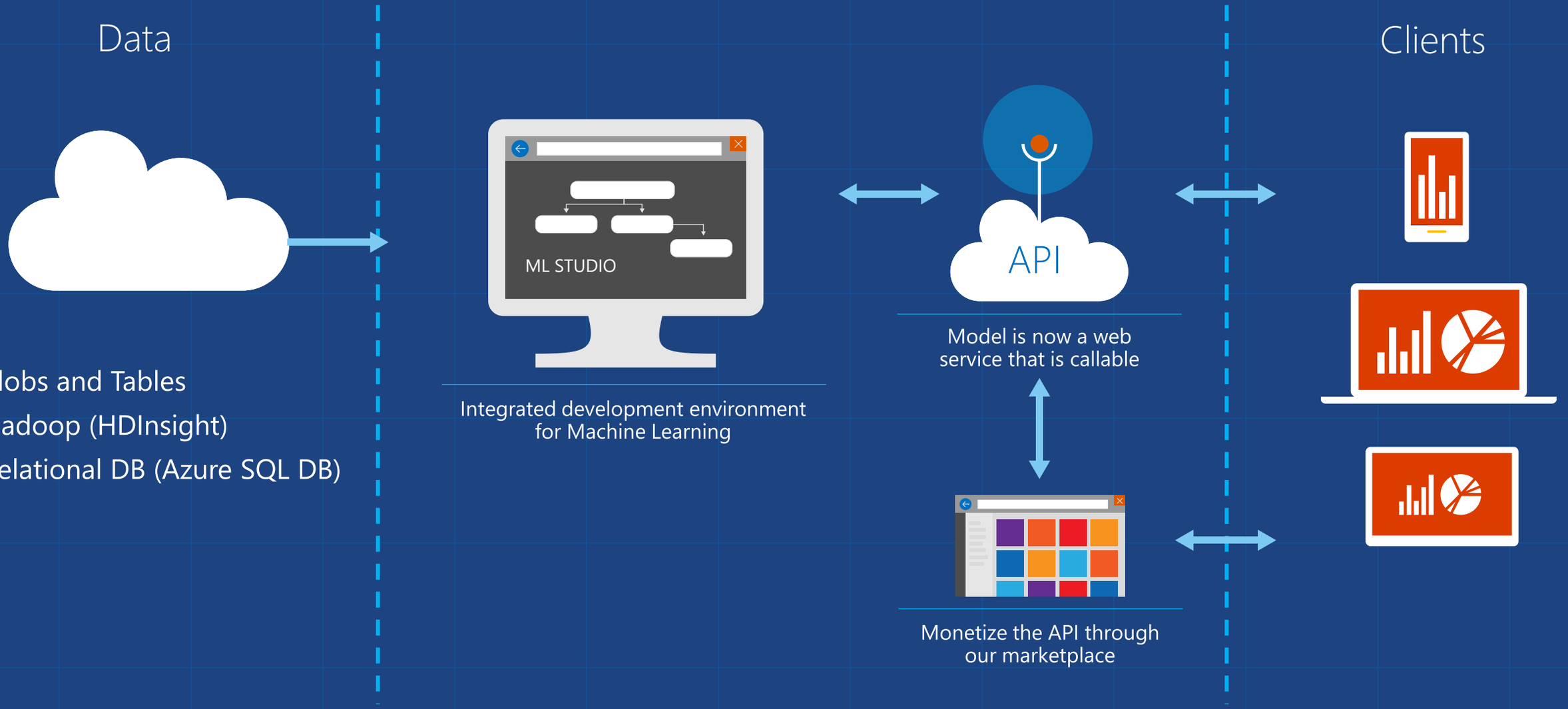
Product Gallery

Azure Marketplace

The Data Science “Inside”

Azure Machine Learning Service

Data -> Predictive model -> Operational web API in minutes



What can Azure ML do for you…?

Telemetry data analysis

Buyer propensity models

Social network analysis

Predictive maintenance

Web app optimization

Churn analysis

Natural resource exploration

Weather forecasting

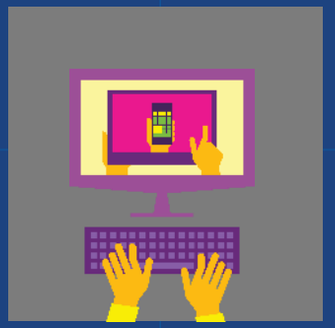
Healthcare outcomes

Fraud detection

Life sciences research

Targeted advertising

Network intrusion detection



Smart meter monitoring

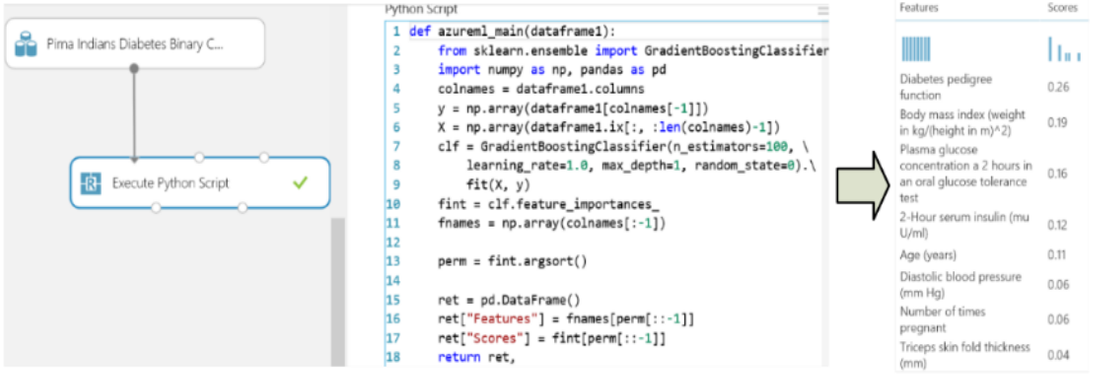
Model Your Way: Open source/our source

Script with R, SQLite or Python

CPython 2.7 support from inside AML Studio

numpy/scipy/panda/scikit-learn/etc.

Anaconda distro pre-installed



Python client library

Analyze data using Python and its libraries

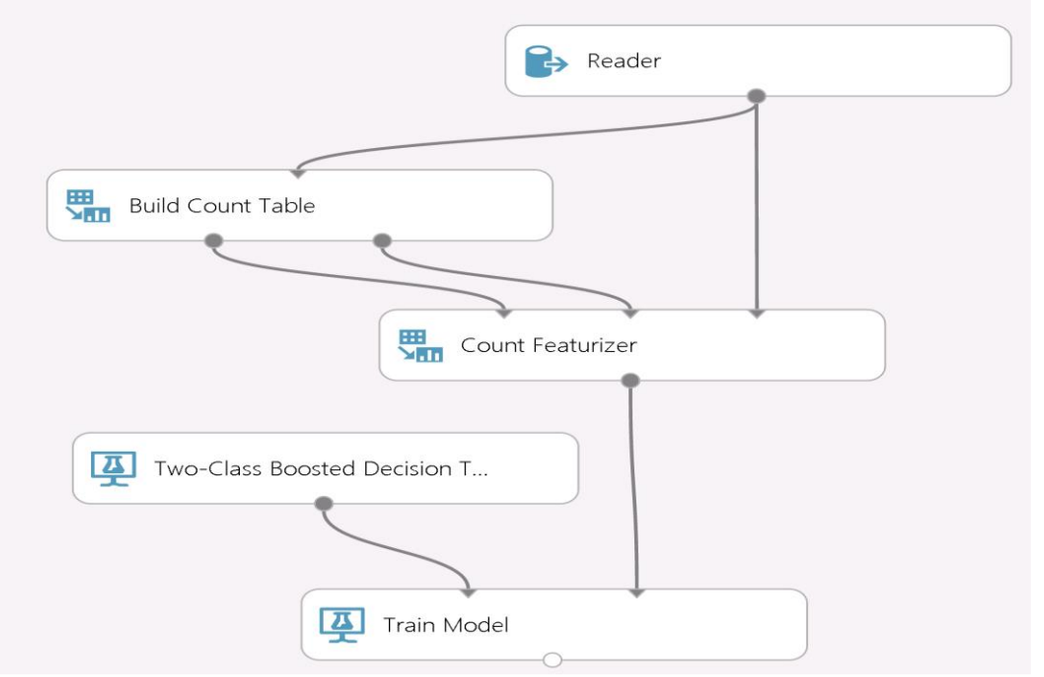
Use IPython, PTVS, Eclipse to edit/debug

Big learning with counts

TB scale datasets

Modular: tune/monitor/replace in isolation

Monitorable and debuggable



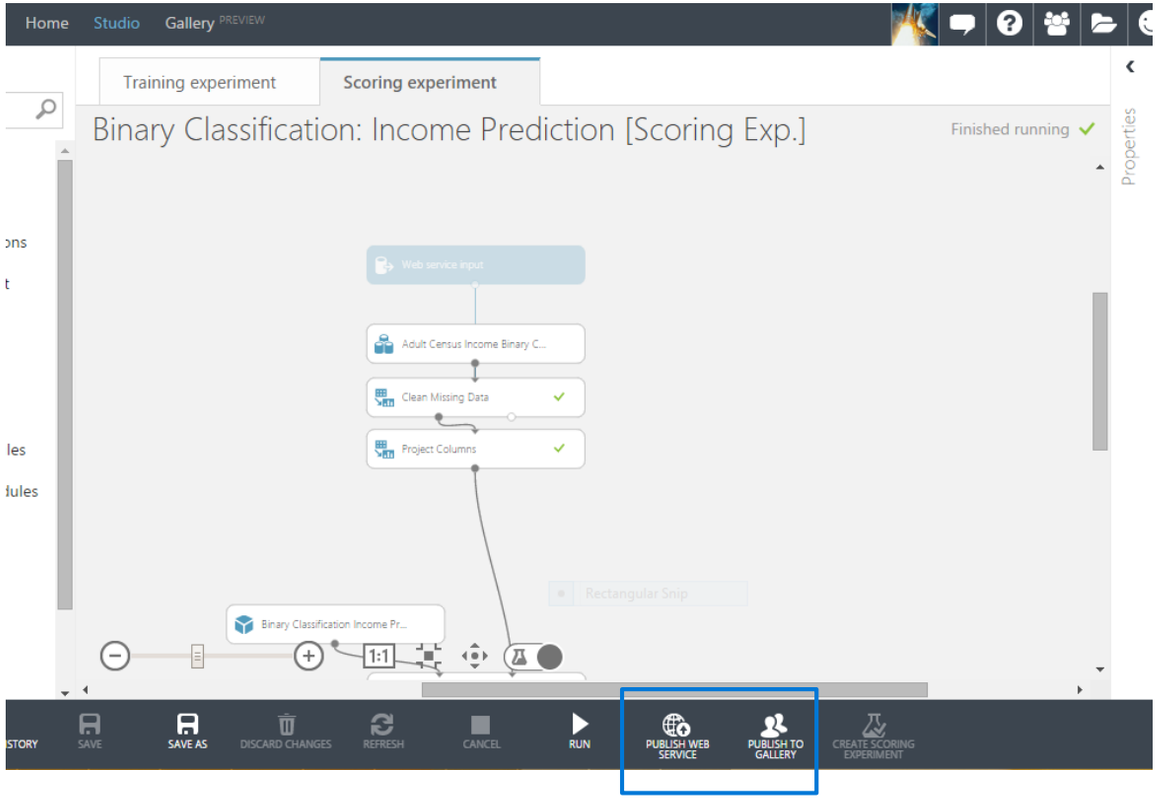
Deploy in Minutes

One click to production

Publish as a Web Service or to Gallery

Continuous updates to streamline process

Stay tuned to our blog for more



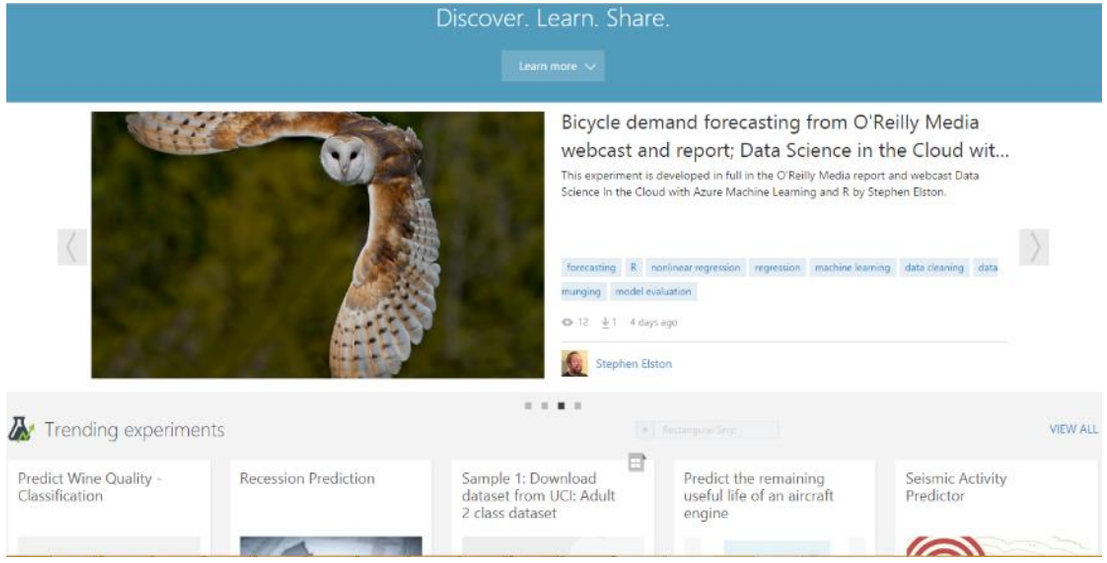
Expand your Reach

New in-product Gallery

Discover what others have built

Learn by dropping these into your workspace

Share your work with others



JJ Food Service

Getting the right products to the right places

Objectives

Build a platform that could anticipate customer orders, recommend additional products, and, above all, cut the time it takes customers to place orders.

Tactics

Used Azure Machine Learning to analyze real-time and historical customer data and create predictive shopping lists that provide product recommendations based on cart contents.

Results

- Accurate predictions of customers' needs
- IoT-enabled cab sensors
- Arrival of foods in peak condition
- Increase in basket value through upsell with decreased checkout times

"You have to keep asking yourself what is possible, what we can do next. With Azure Machine Learning, the wow factor is huge. Customers are amazed that we can predict so accurately what they need."

Mushtaque Ahmed,
Chief Operating Officer

JJ Food Service

Arçelik A.Ş.

Creating a crystal ball for appliance manufacturing

Objectives

Replace an outdated forecasting system with a new solution to improve accuracy and ensure the right spare parts are available anytime and anywhere they're needed.

Tactics

Used Azure Machine Learning to test algorithms and identify the most accurate ones to forecast the needs for spare parts 12 months in advance.

Results

- Forecasting accuracy increased up to 80%
- Inventory turnover expected to climb by 10%
- Increased forecasts from 100,000 to all 350,000 spare parts SKUs

"With more spare parts in our warehouse, we needed a way to respond to customer needs quickly. We reached that goal by using Azure Machine Learning to increase forecast accuracy."

Burcu Aksoy,
Spare Part Team Leader, Customer Care

arçelik

Check out finished APIs and solutions or put your own on the Machine Learning marketplace at **datamarket.azure.com**

Find videos, tutorials on **Documentation** off **azure.com/ml**
Stay tuned to our blog https://aka.ms/mlblog

Get started for free with only a Microsoft Account ID
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Azure verstehen = Azure nutzen können

- **ASI = Azure Skills Initiative**
- **Selbstlernen via engl. MOOC Video Learning**
- **Österreich als Pilotprojekt in Europa**
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- **ETC Learning Innovation**
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WIR DIGITALISIEREN ÖSTERREICH

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