

MICROSOFT AZURE MACHINE LEARNING

Oscar Naim
Microsoft



Microsoft Azure Machine Learning



Contents

What is Machine Learning?

Azure Machine Learning:
How it works

Azure Machine Learning
in action

Get started

“Delivering on one of the old dreams of Microsoft co-founder Bill Gates: Computers that can see, hear and understand.”

John Platt

Distinguished scientist at
Microsoft Research

What is Machine Learning?

Predictive computing
systems become smarter
with experience

“Delivering on one of the old dreams of Microsoft co-founder Bill Gates: Computers that can see, hear and understand.”

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Why Learn?

Learn it when you can't code it (e.g. speech recognition)

Learn it when you can't scale it (e.g. recommendations)

Learn it when you have to adapt/personalize (e.g. predictive typing)

Learn it when you can't track it (e.g. robot control)



The United States Postal Service processed over 150 billion pieces of mail in 2013—far too much for efficient human sorting.



But as recently as 1997, only 10% of hand-addressed mail was successfully sorted automatically.

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The challenge in automation is enabling computers to interpret endless variation in handwriting.

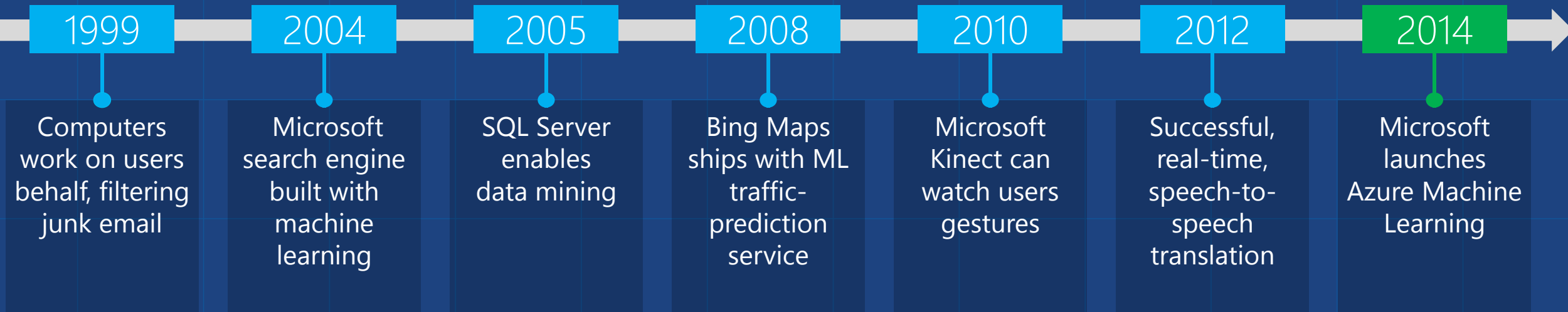


By providing feedback, the Postal Service was able to train computers to accurately read human handwriting.

Today, with the help of machine learning, over 98% of all mail is successfully processed by machines.

Microsoft & Machine Learning

15 years of realizing innovation



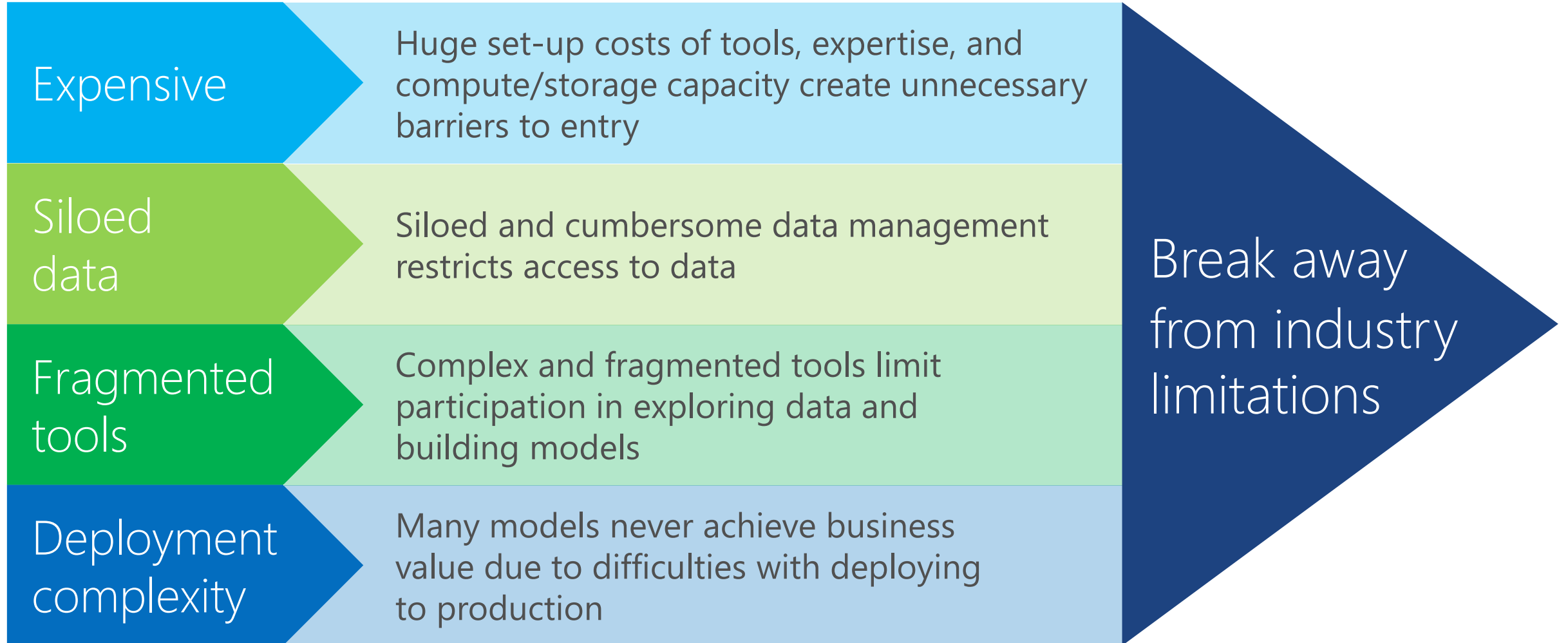
John Platt,

Distinguished scientist at
Microsoft Research

“Machine learning is pervasive throughout Microsoft products.”

Machine learning today

Hard-to-reach solutions



“Azure Machine Learning offers a data science experience that is directly accessible to business analysts and domain experts, reducing complexity and broadening participation through better tooling.”

Hans Kristiansen

Capgemini

Azure Machine Learning How it works

Enable custom predictive analytics solutions at the speed of the market

How it works

The Environments

Azure Portal

ML Studio

ML API service



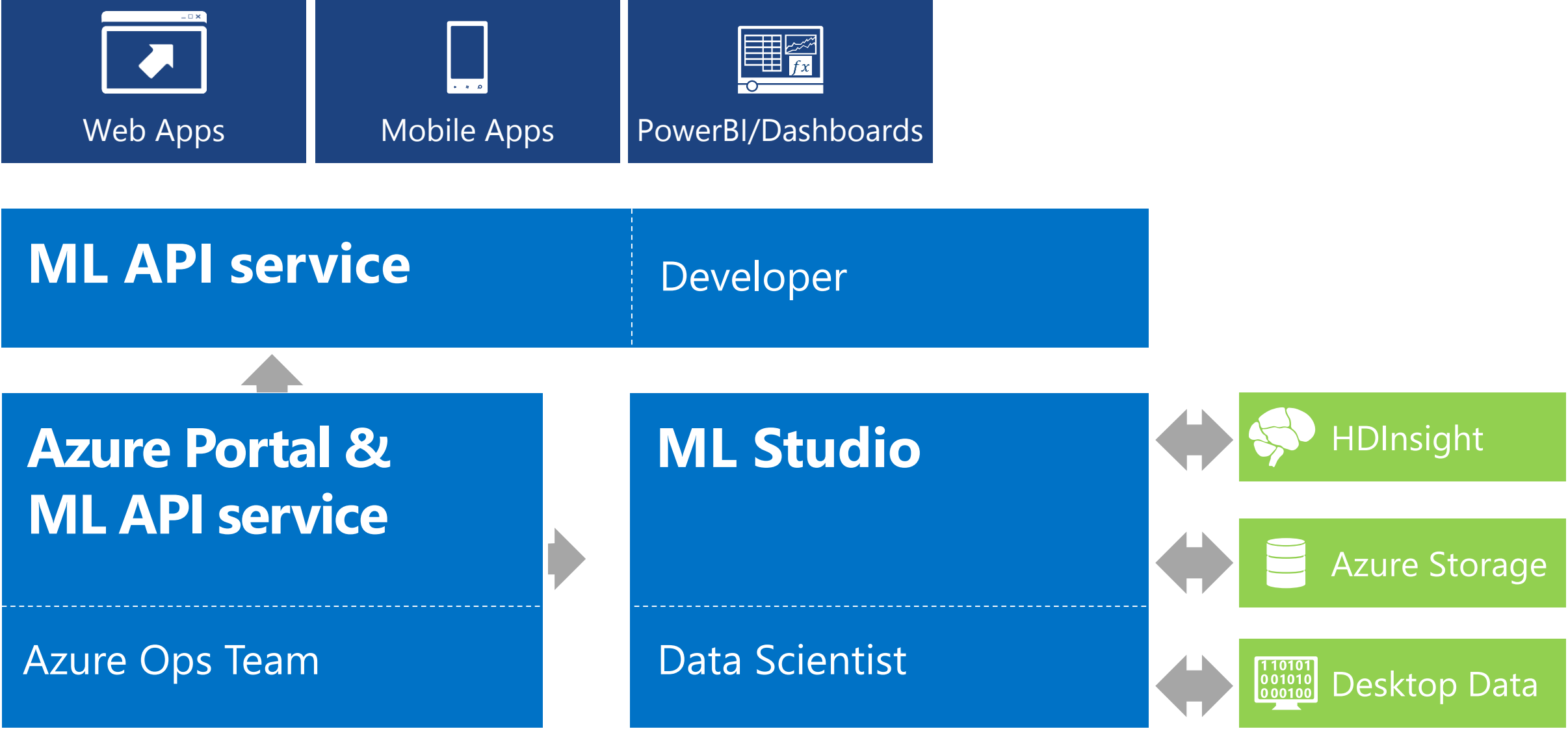
The Team

Azure Ops Team

Data Scientists

Developers

One solution for Machine Learning — from data to results



One solution for Machine Learning — from data to results



Web Apps



Mobile Apps



PowerBI/Dashboards

Business users easily access results:
from anywhere, on any device

ML API service and the Developer

- Tested models available as an url that can be called from any end point

Azure Portal & ML API service and the Azure Ops Team

- Create ML Studio workspace
- Assign storage account(s)
- Monitor ML consumption
- See alerts when model is ready
- Deploy models to web service

ML Studio and the Data Scientist

- Access and prepare data
- Create, test and train models
- Collaborate
- One click to stage for production via the API service



HDInsight



Azure Storage



Desktop Data

Solutions at the speed of the market

Manage and deploy Machine Learning from the Azure portal

Fully
managed

No software to install,
no hardware to manage,
and one portal to view
and update

Easy to use

Simple drag, drop and
connect interface you
can access and share
from anywhere

Tested
solutions

Access to sample
experiments, tested
algorithms, support for
custom R, and over 350
R packages

Deploy in
minutes

Tooled for quick
deployment, hand-off
and updates

“There was zero percent chance we were going to take a step backwards and consider a machine learning solution that wasn't well-established and proven effective in the cloud.”

Kristian Kimbro Rickard

MAX451

Azure Machine Learning in action

Real world examples

Smart Buildings

The Center for Building Performance and Diagnostics uses weather forecasts, real-time temperature reads, and behavioral research data to optimize building heating and cooling systems in real-time.

Key Benefits

- User friendly set up and integration with existing systems
- Seamless data handling
- Accessible and easy to use across backgrounds
- Quickly compare algorithms

**Carnegie
Mellon
University**

“The ease of implementation makes machine learning accessible to a larger number of investigators with various backgrounds—even non-data scientists.”

Bertrand Lasternas
Carnegie Mellon

Demand Forecasting

Pier 1 partnered with MAX451 to delight loyalty customers by using historical and behavioral data to predict what products they want next.

Key Benefits

- Ease of use across skillsets
- Fast time to meaningful results
- Accessible via the cloud

The logo for Pier 1 Imports, featuring the text "Pier 1 imports" in a bold, blue, sans-serif font. The "1" is stylized with a vertical line through it. The logo is set against a white rectangular background.

“We are especially pleased that our analysts can focus on the results and not worry about the complex algorithms behind the scenes.”

Andrew Laudato
Pier 1 Imports

Investment Optimization

Icertis, a cloud solutions provider, built a predictive model using past performance data to determine the optimal locations for its clients to build new retail stores.

Key Benefits

- Quickly build, test and verify models
- No new scripting or coding languages
- Easily import and modify algorithms developed outside the solution



“The standout benefit for us was to quickly build and test predictive models and verify their results. There is no cognitive overhead to learn new scripting or coding language.”

Yogesh Dandawate
Icertis Applied Cloud

Using past data to predict the future

Imagine what machine learning could do for your business.

Churn analysis

Ad targeting

Image detection & classification

Equipment monitoring

Recommendations

Forecasting

Spam filtering

Fraud detection

Anomaly detection

“Microsoft has a solid track record for creating user-friendly tools, and Pier 1 is helping prove Microsoft can take something as complex as machine learning and make it accessible via the cloud”

Andy Laudato

Pier 1 Imports

Learn more and
sign up for a
free trial of Azure

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