Microsoft AI Platform

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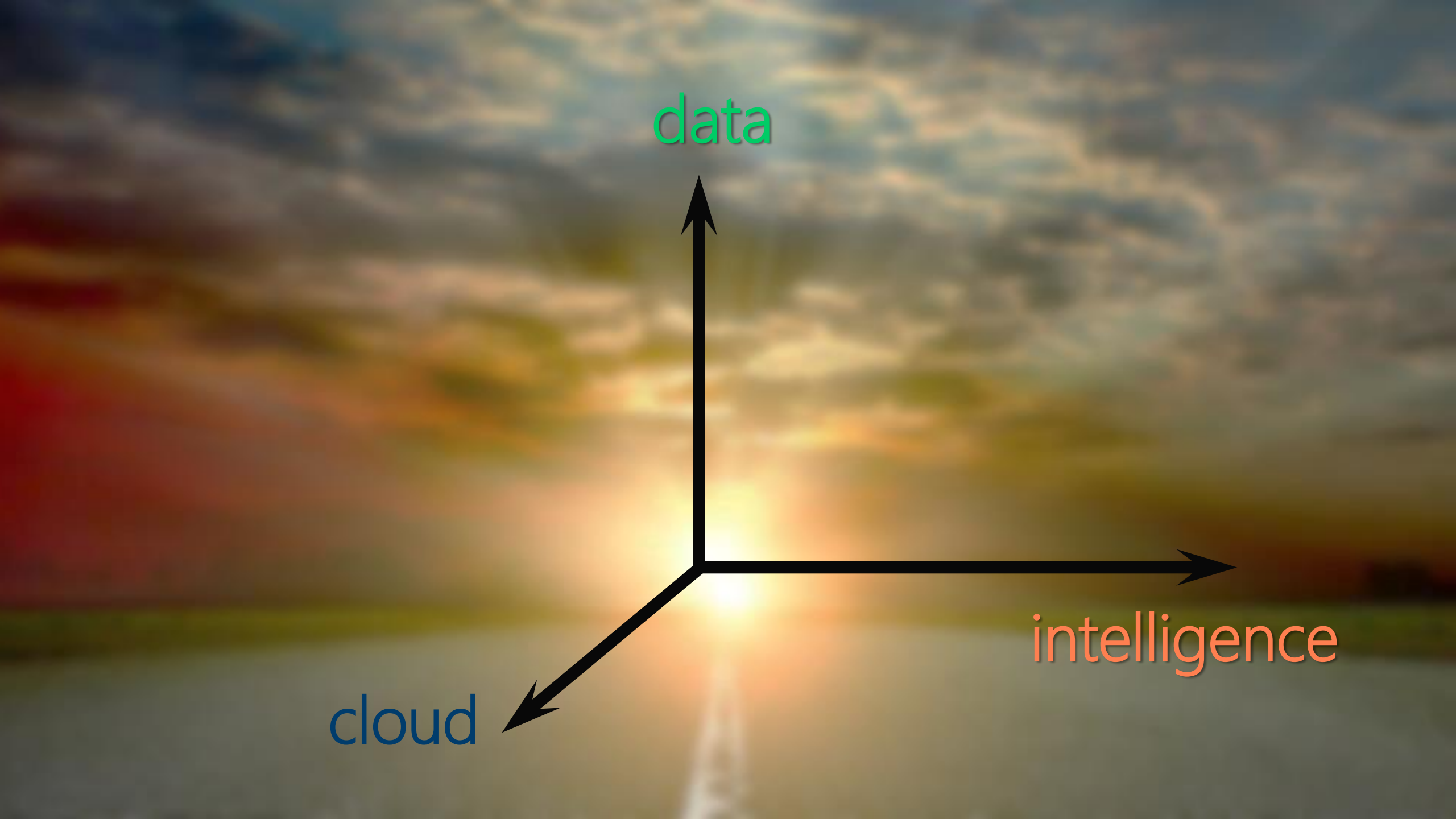
Government Industry


data
intelligence
cloud

The Microsoft AI platform: Azure+AI

Cloud-powered AI for every developer

Services

CONVERSATIONAL AI

- Bot Framework

TRAINED SERVICES

- Cognitive

CUSTOM SERVICES

- Azure Machine Learning

Infrastructure

AI ON DATA

- Cosmos DB
- SQL DB
- SQL DW
- Data Lake

AI COMPUTE

- Spark
- DSVM
- Batch AI
- ACS
- Edge

CPU, FPGA, GPU

Tools

CODING & MANAGEMENT TOOLS

- VS Tools for AI
- Azure ML Studio
- Azure ML Workbench

Others (PyCharm, Jupyter Notebooks…)

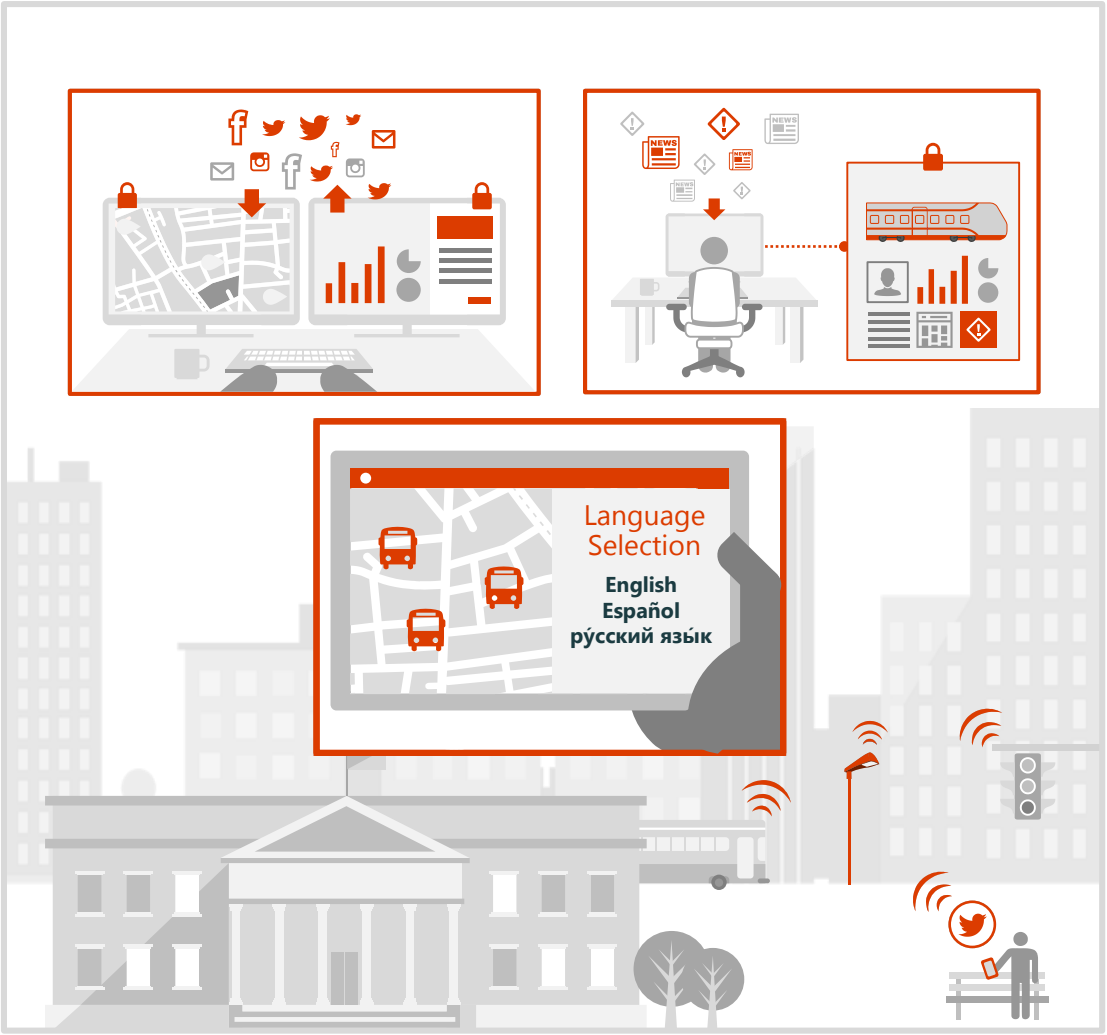
DEEP LEARNING FRAMEWORKS

3rd Party

- Cognitive Toolkit
- TensorFlow
- Caffe

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

Transform your transit and transportation services



Enhance customer service and satisfaction by providing automated language translation services for transportation systems

Improve pedestrian and cyclist safety with cognitive services to get insights from video analytics like rail invasion, fall detection, and other behavioral analysis

Listen and respond to your citizen's transportation-related comments on social media with automated tools

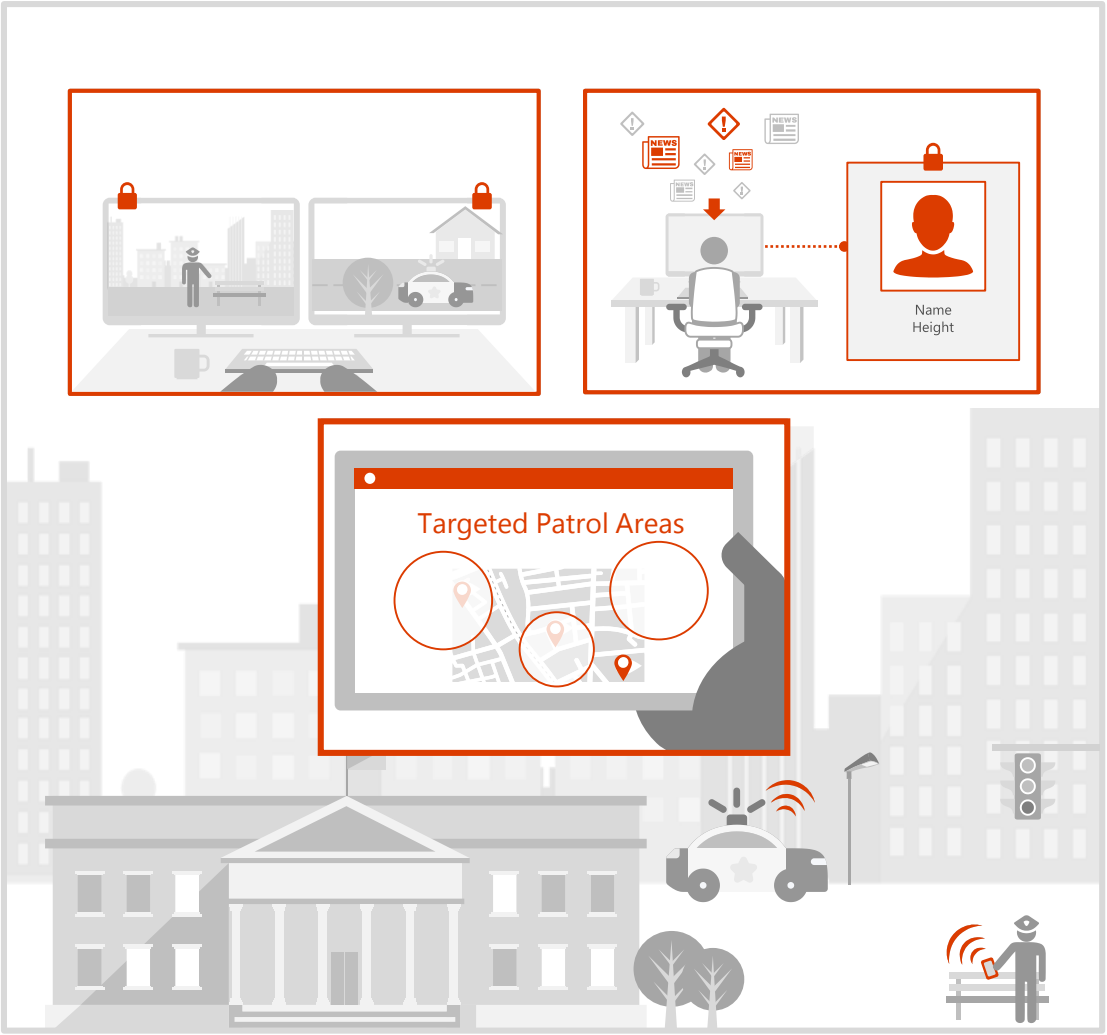
Social services continuum: Transform the ecosystem

Enable more seamless service delivery by integrating data sources from multiple agencies across S&HS, Health, Government and partners

Improve community engagement and digital inclusiveness with Social Digital Assistants and cognitive services for transcription or translation

Predict and align the demand for social services and associated costs in the market with machine learning

Transform your services to improve the safety of citizens and officers



Enable your systems to classify, categorize, and process video content like Dashcam, Body Worn Video, or CCTV

Speed workflows and decrease costs with video analytics like face detection and identification, video redaction, and entity extraction

Build deep learning models for criminal forecasting and surface hidden insights from internal and open data sources

Project

FarmBeats

Problem

The world's population will reach 10 billion by 2050, with less arable land and water for growing food than we have today.

The only way to feed everyone in the future could be through precision agriculture—but the technology is still too expensive.

Solution

Microsoft Researchers are using sensors, drones, the Azure Cloud, and machine learning algorithms to analyze conditions like moisture and soil temperature in real time.

By analyzing this data, the FarmBeats project could help predict what farmers should plant to maximize their yields.

Together, cheap sensors, rural broadband, drones, and cloud analytics **can feed a growing world.**

For more information, please see the FarmBeats video case study.

AI for Societal Impact

AI for Earth

Access | Education | Innovation

AGRICULTURE

WATER

BIODIVERSITY

CLIMATE

Learn more at microsoft.com/aiforearth

Project

Chesapeake Conservancy

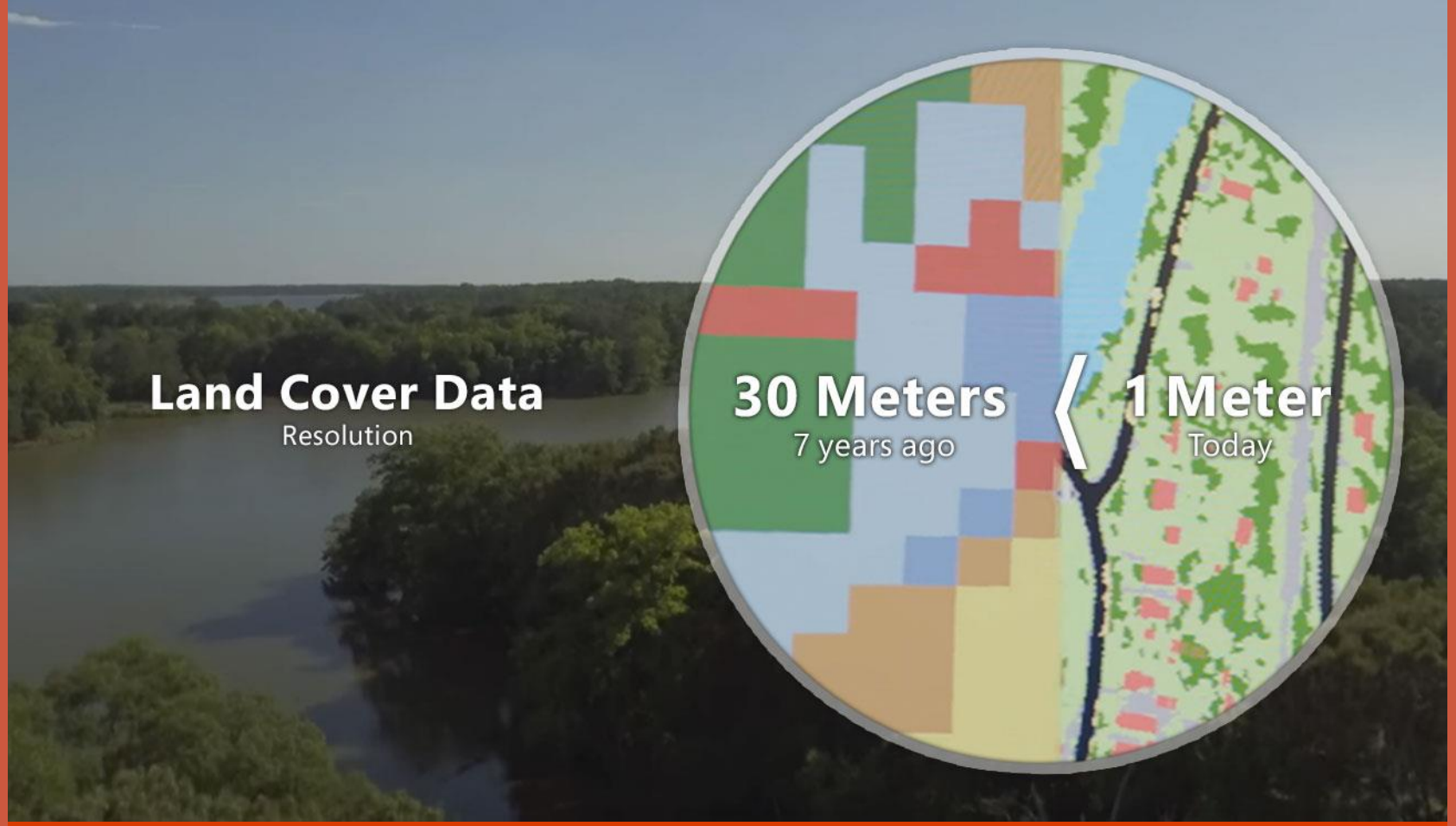
Problem
The largest estuary in the U.S., the Chesapeake Bay watershed has been overwhelmed by water pollution.

Solution
To help prioritize its restoration efforts, Chesapeake Conservancy wanted to create a 1-meter resolution land cover map of the 64,000-square-mile area.

Such a map can generate 900 times the information of existing 30-meter resolution data sets, but without AI, it would take months to create.

Using Microsoft Cognitive Toolkit, Chesapeake Conservancy is defining and training a neural network that can create up-to-date 1-meter resolution maps in a fraction of the time.

This information is helping the nonprofit improve the pace and quality of its conservation efforts.



With AI to aid its conservation efforts, **Chesapeake Conservancy** now has **900 times the information** to help it restore the Chesapeake Bay.

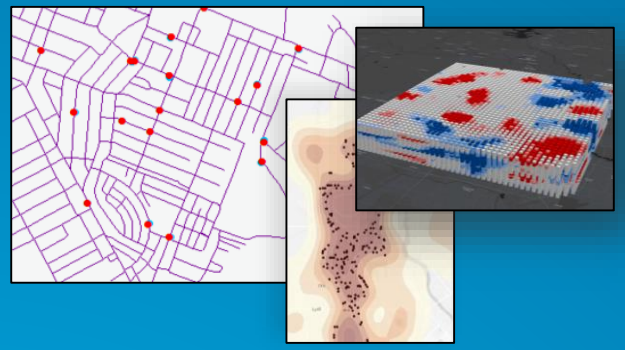
For more information, please see the video case study.


Microsoft
Artificial Intelligence
GeoAI
esri
Geographic Information System

GeoAI Project Lifecycle: Predicting Accidents, Saving Lives!

1. Spatial Data Exploration

Exploring Spatial Patterns of Interest



2. Spatial Data Preparation

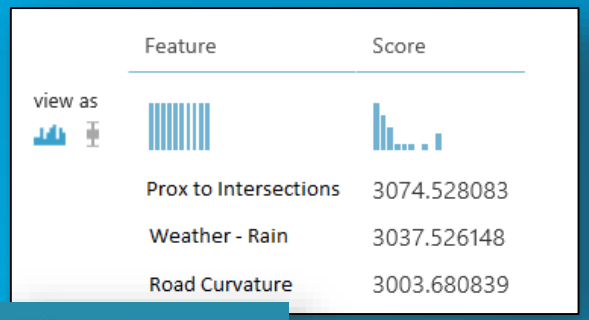
Example: Road Snapping

3. Spatial Feature Extraction

Road Curvature, Intersections, # Lanes..

4. Feature Selection

Identifying the most relevant Features



Azure Machine Learning

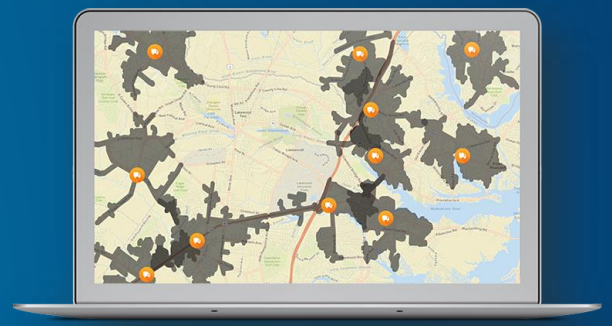
5. Model Development

Experimenting w/ Accuracy per Model

Azure Machine Learning

6. Spatial Action Facilitation

e.g. Optimizing Ambulance Allocation



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ML & AI TOOLS
DATA INGESTION TOOLS
DATA EXPLORATION & VISUALIZATION

In conclusion…

It’s not about if,

but when and how...

Thank you