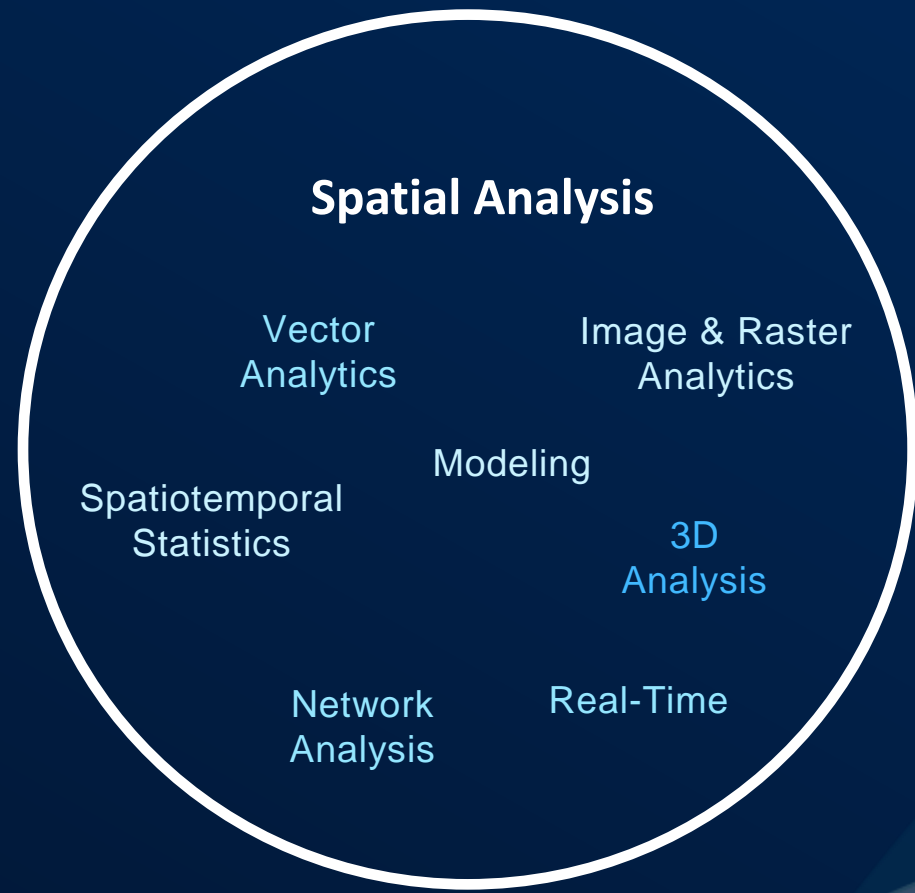
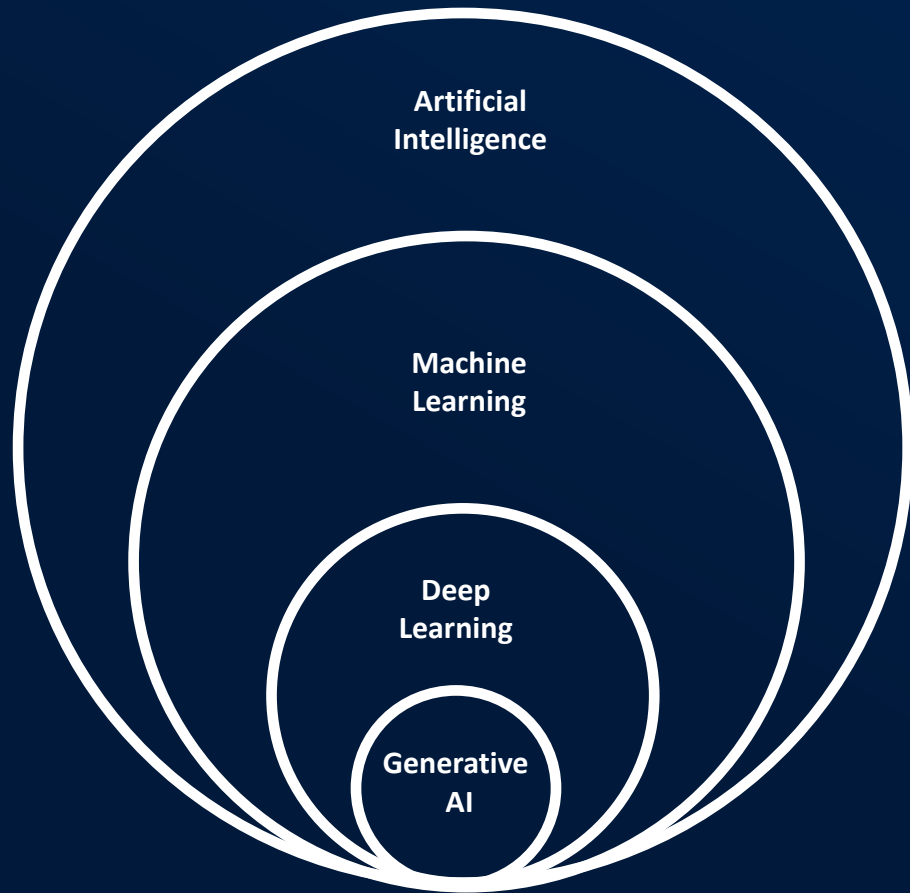


GeoAI – Capabilities Overview

The background of the slide is a dark blue topographic map. On the right side, there are several thick, overlapping, curved lines in shades of teal, light blue, orange, and dark purple, creating a sense of movement and data flow.

What is GeoAI and what can it do for you?





Before we get started,
let's get on the same page

ArcGIS is a comprehensive system for spatial data science



GeoAI



Data Engineering



Visualization & Exploration



Spatial Analysis



Big Data Analytics



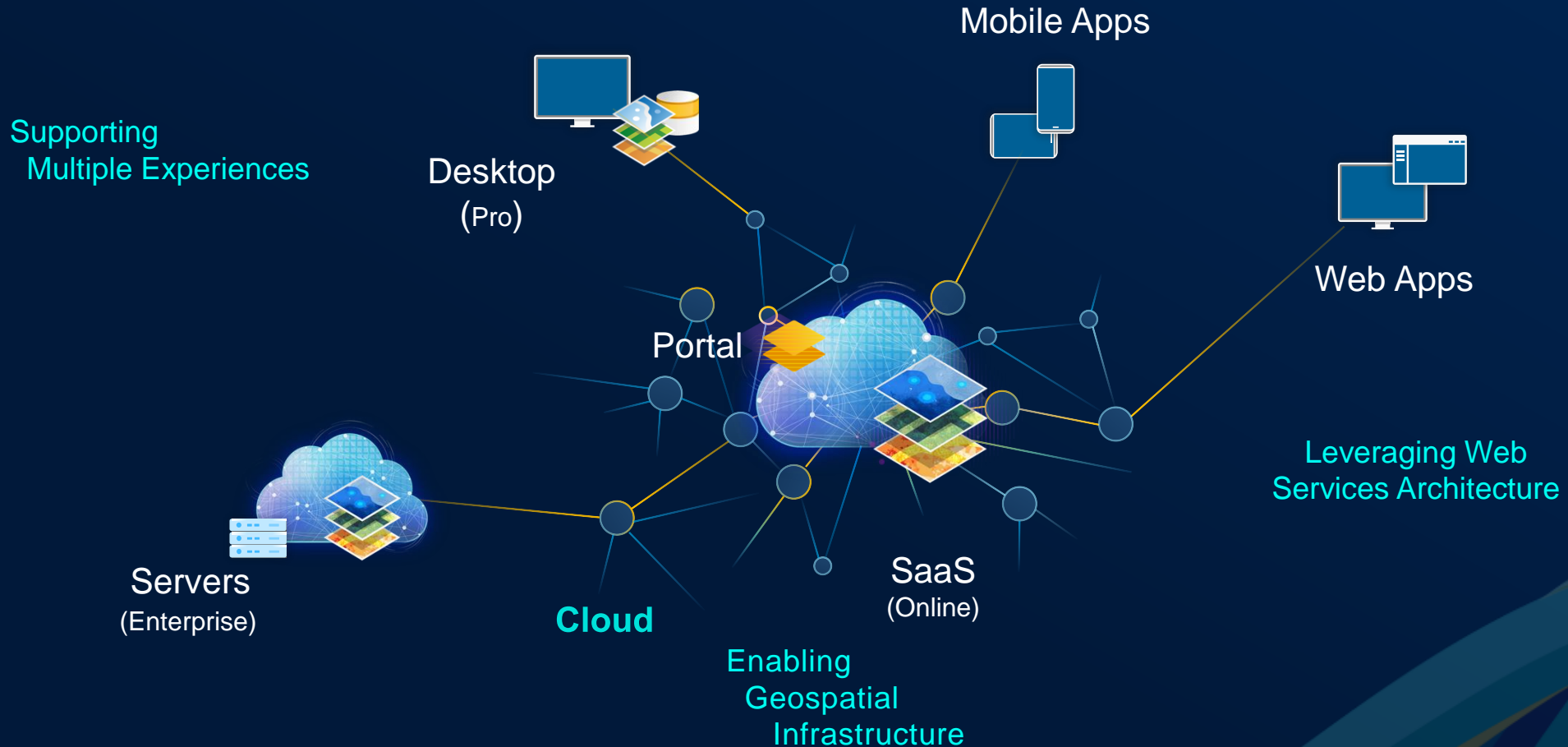
Modeling & Scripting



Sharing & Collaboration

ArcGIS Is an Integrated Enterprise System

Many Implementation Patterns all Supporting GeoAI

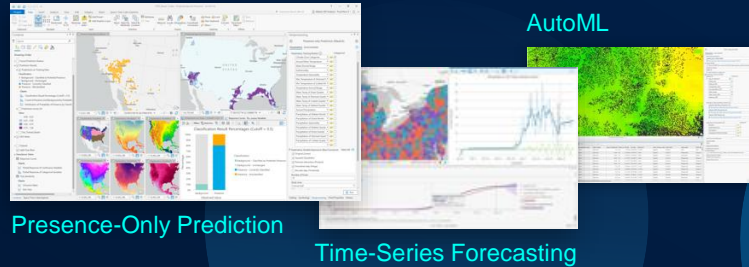


Easily Integrated with Other Enterprise IT Systems

AI, Machine Learning & Deep Learning

Embedding GeoAI Across the ArcGIS System

Ready-to-Use
Tools & Models



Auto Detection
& Tracking



Improved Pixel
Classification (TTA)



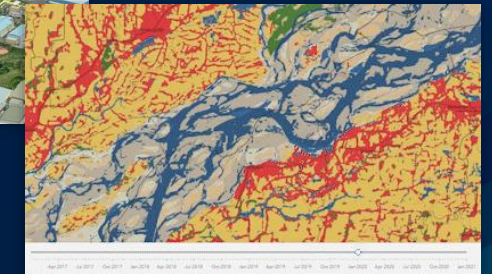
Point Cloud Classification



Imagery &
Remote Sensing



Object Detection in
Oriented Imagery



Land Cover Classification

New & Improved

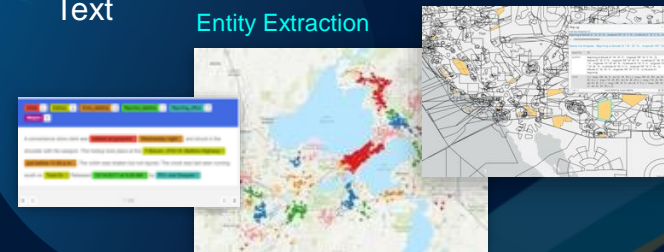
- Pretrained Models (60+)
- Motion Imagery Tools
- Tools for Spatial Machine Learning
- Spatiotemporal Forecasting
- GeoAI Toolbox (Pro)

GeoAI



Vector &
Tabular

Text



Open Science
Libraries



... Automating, Processing & Accelerating
Intelligent Decision-Making

Generating Spatial Data

Pretrained models

- Over 60+ pretrained models
 - Eliminate the need to develop and train models
 - Retractable to your geography and imagery
 - Available as part of the ArcGIS Living Atlas
- Types of models
 - Image feature extraction and detection
 - Point cloud classification
 - Object tracking
 - Pixel classification
 - Image redaction

The screenshot shows the ArcGIS Living Atlas of the World search interface. At the top, the Esri logo and navigation links (ArcGIS, Industries, About, Support) are visible. The user is logged in as Rami Alouta. The search bar contains 'dlpk' and shows '63 Results'. Below the search bar are navigation tabs: All, Trending, Basemaps, Imagery, Boundaries, People, Infrastructure, and Environment. A filter section includes 'All content types', 'All time', 'All regions', and checkboxes for 'Esri-only content' and 'Authoritative-only content'. The results are sorted by 'Relevance'. The first six results are:

- Building Footprint Extraction - USA**: Deep Learning Package By esri_analytics. Deep learning model to extract building footprints from high-resolution aerial and satellite imagery.
- Land Cover Classification (Landsat 8)**: Deep Learning Package By esri_analytics. Deep learning model to perform land cover classification on Landsat 8 imagery.
- Land Cover Classification (Sentinel-2)**: Deep Learning Package By esri_analytics. Deep learning model to perform land cover classification on Sentinel-2 imagery.
- Segment Anything Model (SAM)**: Deep Learning Package By esri_analytics. Meta's Segment Anything Model (SAM) for segmenting objects in any imagery.
- Road Extraction - Global**: Deep Learning Package By esri_analytics. Deep learning model to extract roads from high resolution satellite imagery.
- Mangrove Classification (Landsat 8)**: Deep Learning Package By esri_analytics. Deep learning model to perform mangrove classification on Landsat 8 imagery.

Pretrained models – A tour

Living Atlas – review new models

ArcGIS Pro a GeoAI enabled environment

Image classification & feature extraction

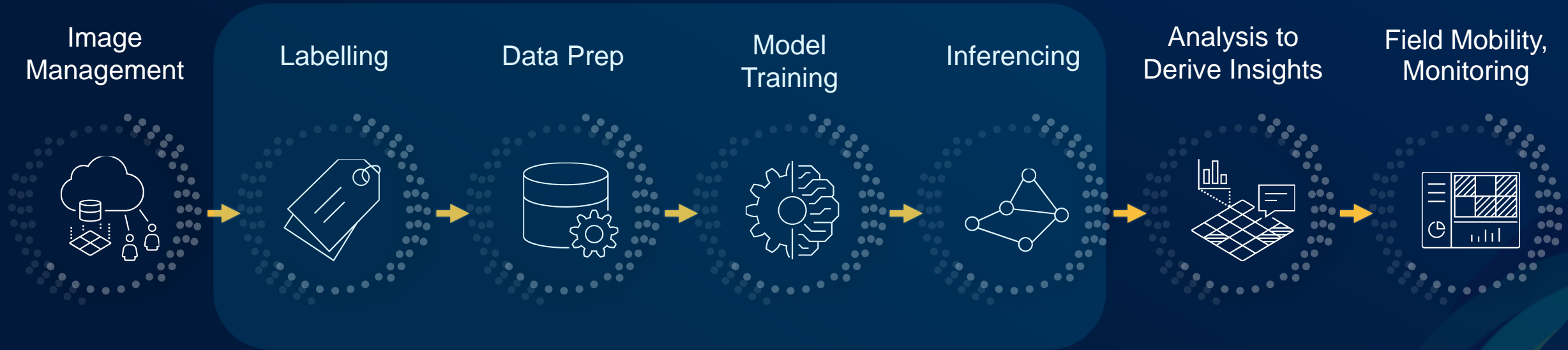
Image Analyst

Extracting Information From Imagery



Deep Learning in ArcGIS

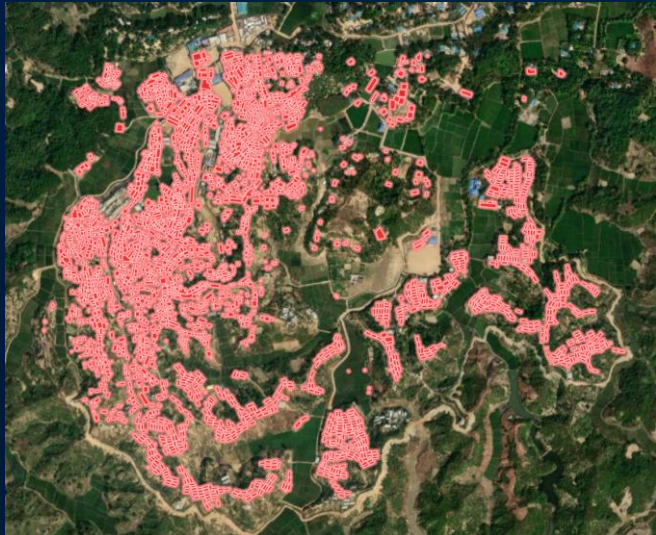
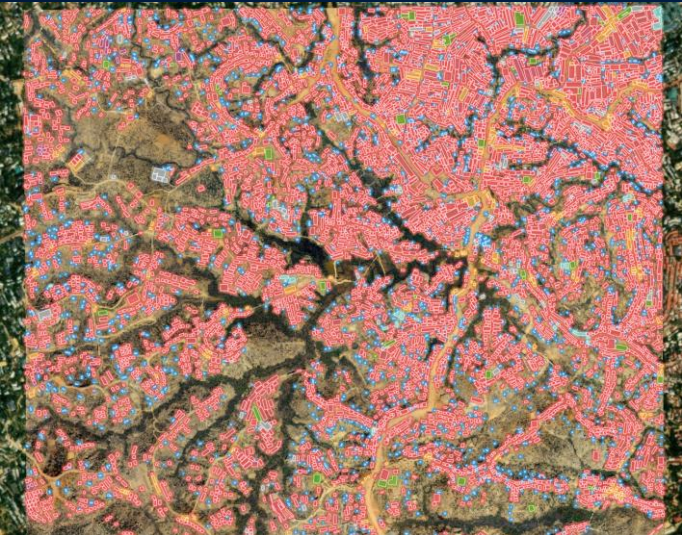
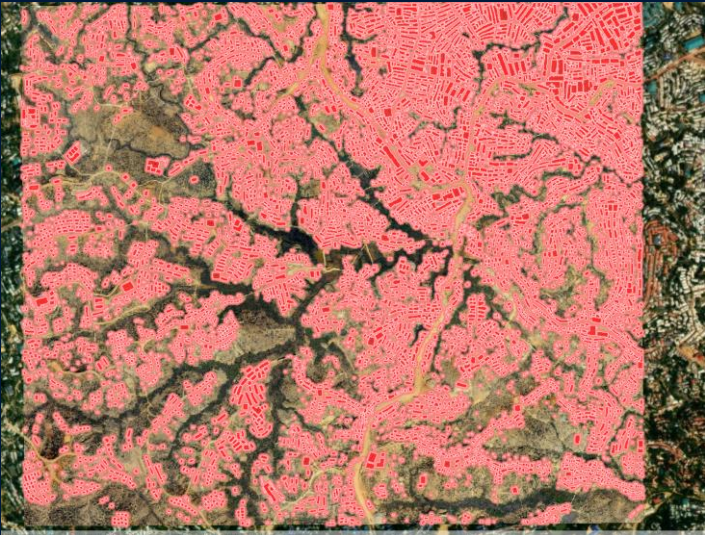
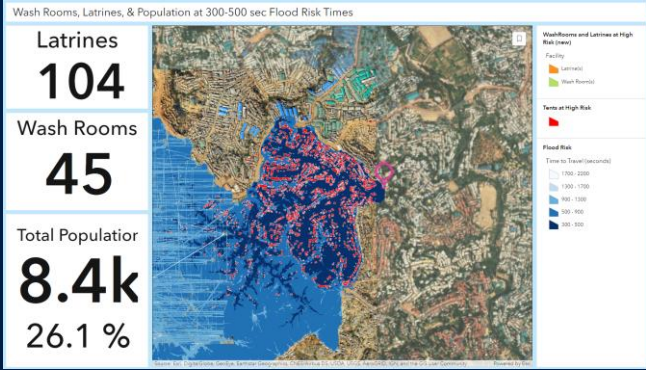
ArcGIS Provides an end-to-end deep learning solution



ArcGIS provides an end-to-end deep learning workflow

A Rohingya Refugee Camp Analysis

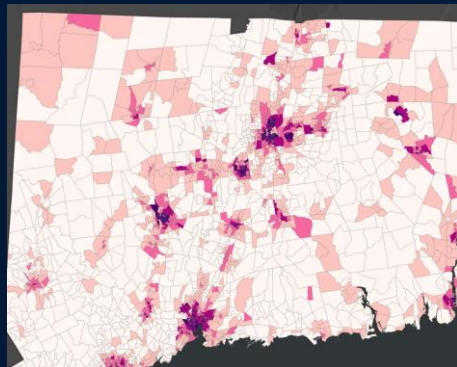
Ensure availability and sustainable management of water and sanitation for all



Predictive Analytics

Prepare Data, Make Predictions, Find Correlations, Understand Top Variables, and more

Predicting Asthma Rates



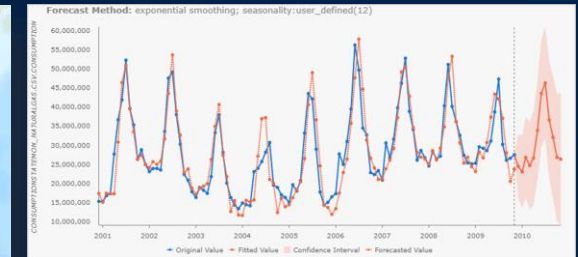
Predicting House Pricing



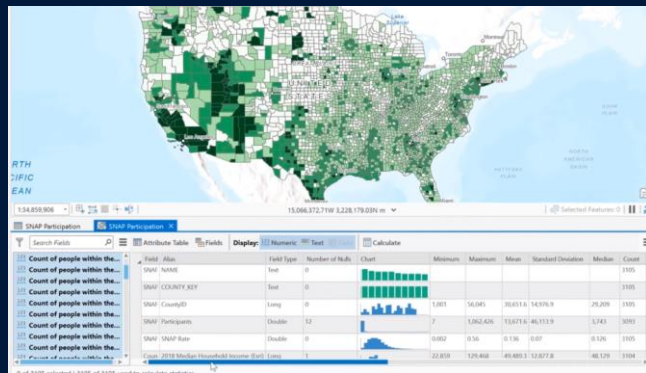
Predicting Sea Habitat



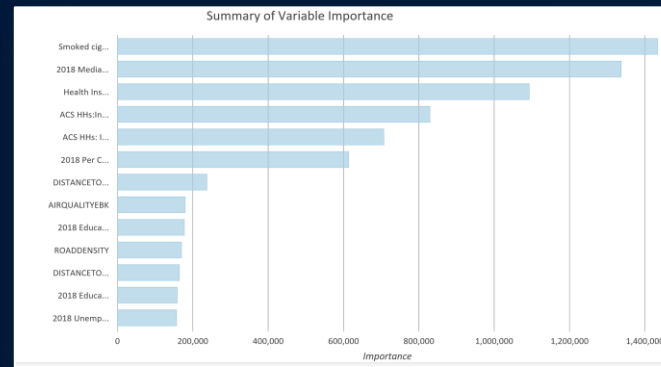
Time Series Forecasting



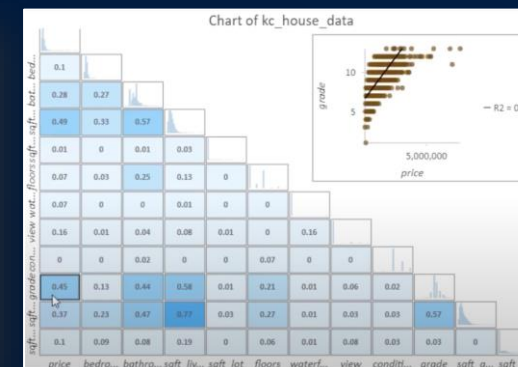
Data Engineering

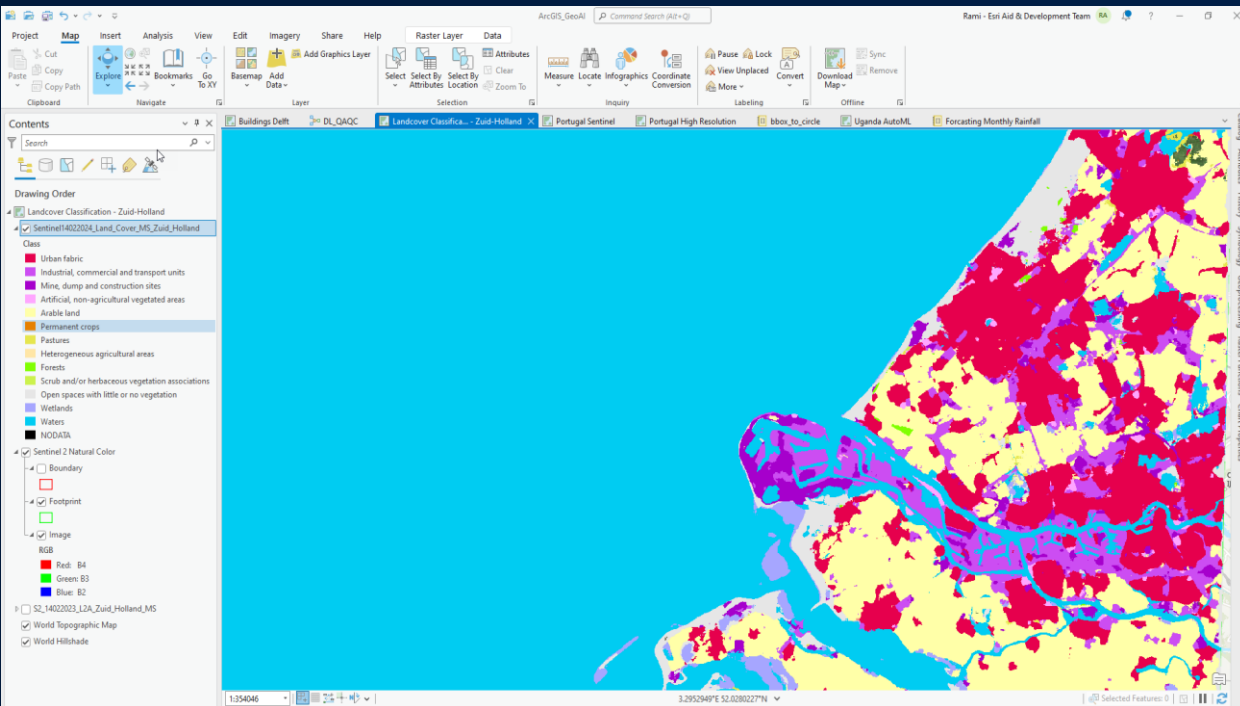


Variable Importance



Variable Correlation





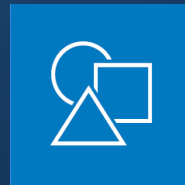
ArcGIS Pro: An Overview

Deep Learning Studio

Bring the entire deep learning workflow into a focused environment



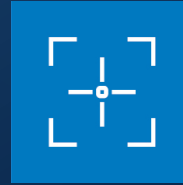
Project-based Workflows



Prepare Training Data



Train Model



Run Inference

ArcGIS Enterprise +
ArcGIS Image Server



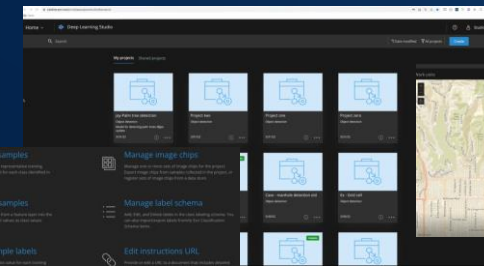
- Multiuser workflows
- Small to large projects
- Project management

Deep Learning Studio

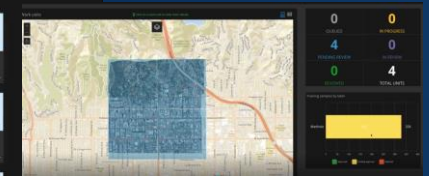
- Intuitive web application
- End-to-end deep learning pipeline
- Collaborative training data collection
- First release – ArcGIS Enterprise 11

Simplify and streamline AI Workflows

Project Management



Status Dashboard



Collaborative Experience



Deep Learning Resources

Deep Learning with ArcGIS Pro Tips & Tricks:
Part 1



Scan Me

Deep Learning with ArcGIS Pro Tips & Tricks:
Part 2



Scan Me

Deep Learning with ArcGIS Pro Part 3: QA/QC
Extracted Features



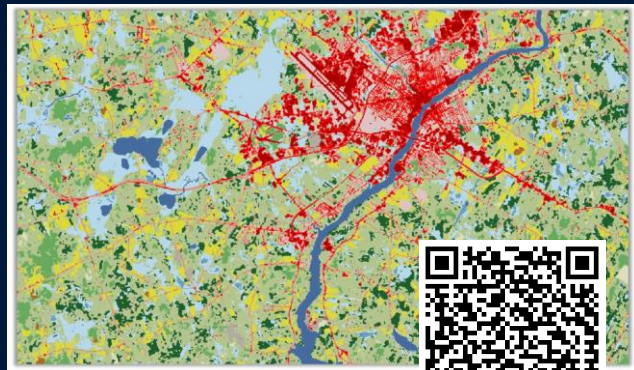
Scan Me

Deep Learning with ArcGIS Pro Part 3: QA/QC
Extracted Features



Scan Me

Introducing pre-trained geospatial deep
learning models



Scan Me

Pre-trained deep learning models
update (February 2021)



Scan Me

