

Unlocking the Power of Geospatial Data

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Agenda

1. Powering your GIS Solutions with Existing Data
2. Unlocking Insights with Trusted Data Providers: IRL
3. Unlocking Insights with Trusted Data Providers: Esri Content Store
4. Generating Content with GeoAI
5. Engineering Your Data for Insight
6. Communicating Results Effectively

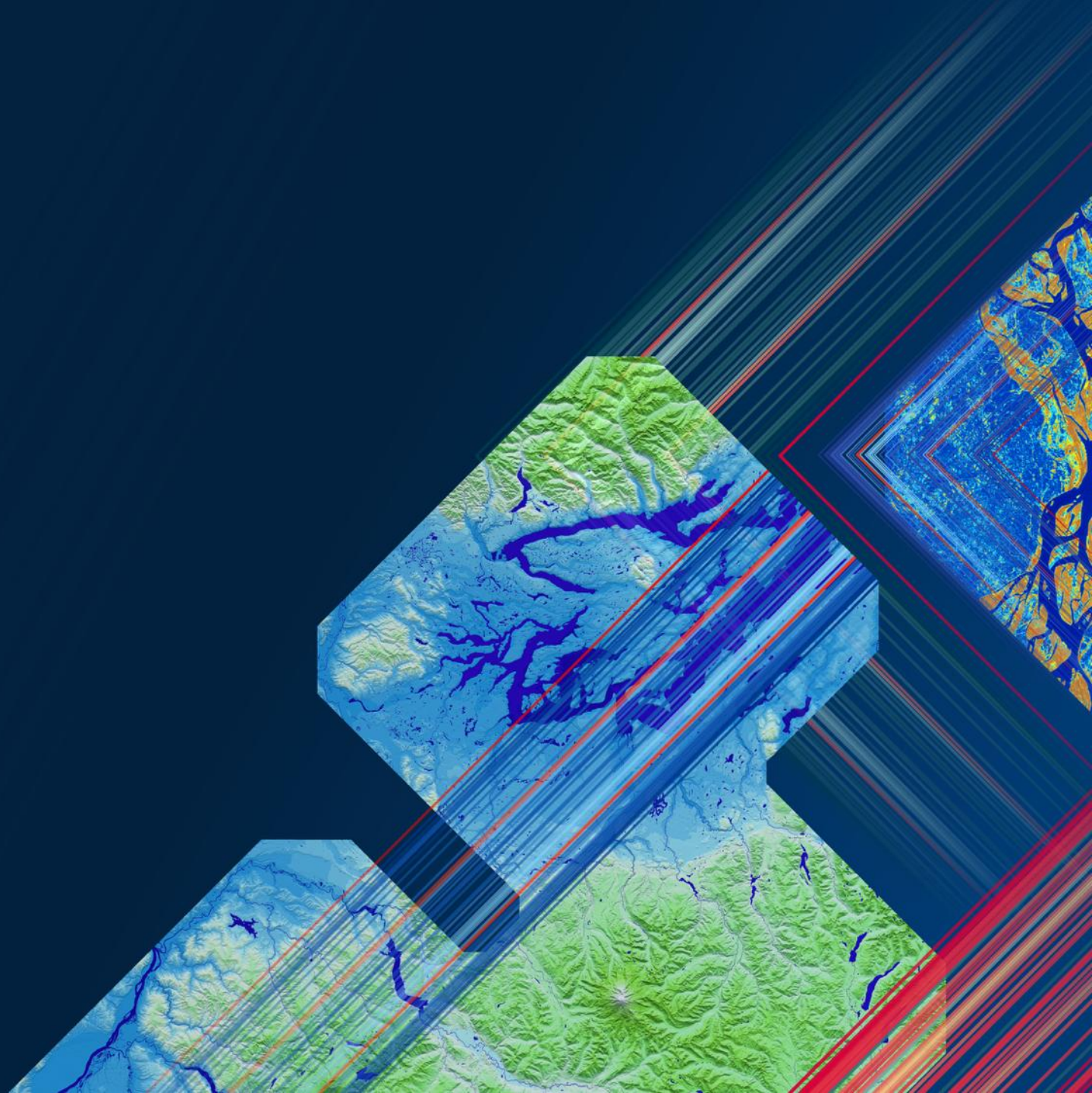




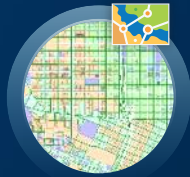
Data

Where it all begins

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Integrating many forms of data



Vector



Textured Meshes



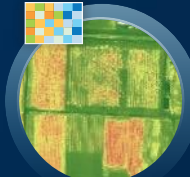
Voxels



Graph Data



Unstructured



Imagery



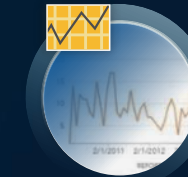
Terrain



Tabular



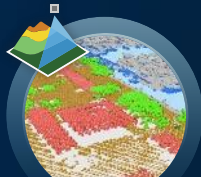
Big Data



Real-Time
(IoT)



3D



Lidar / Point
Cloud



Multidimensional
Data



CAD / BIM

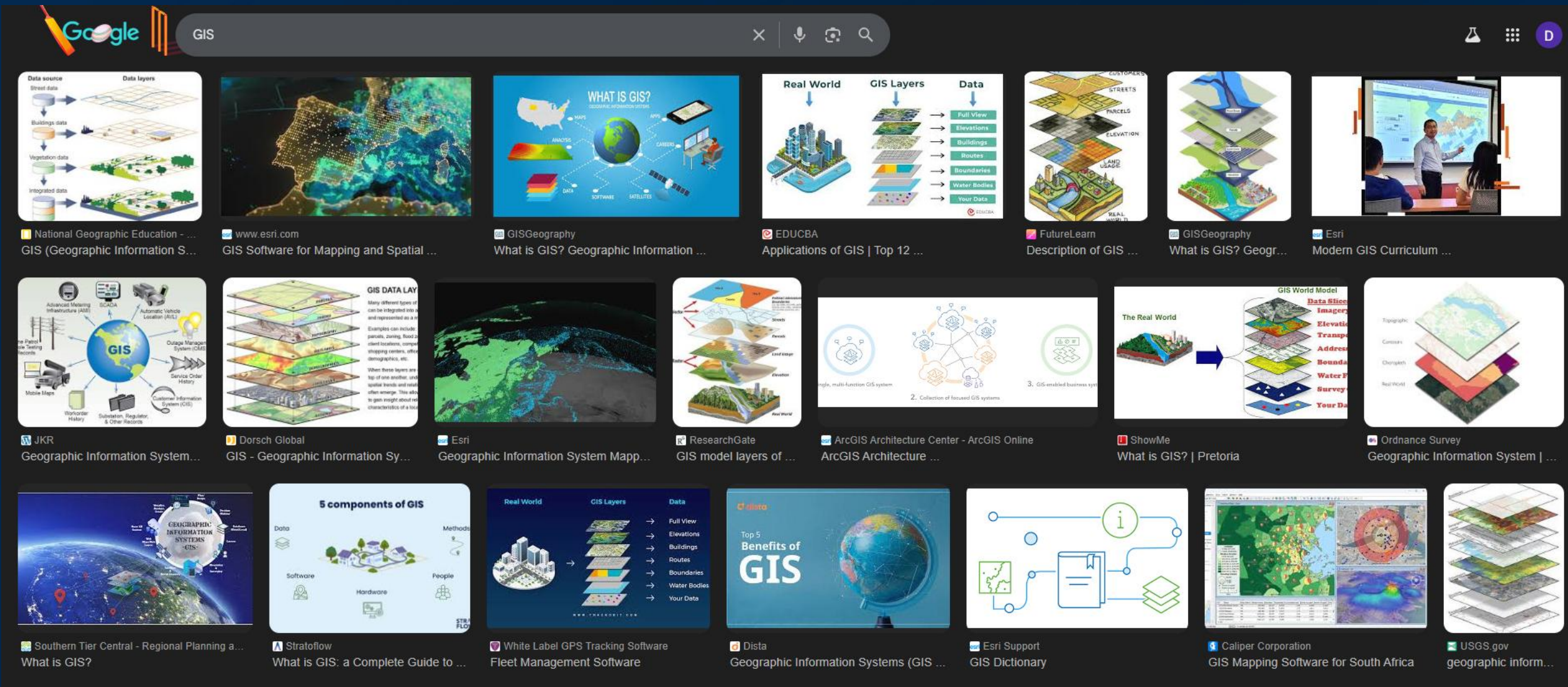


Full-Motion
Video

Hydrating your Solution with Data



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Data Requirements

- Consistent
- Complete
- Accurate
- Fit For Purpose
- Available



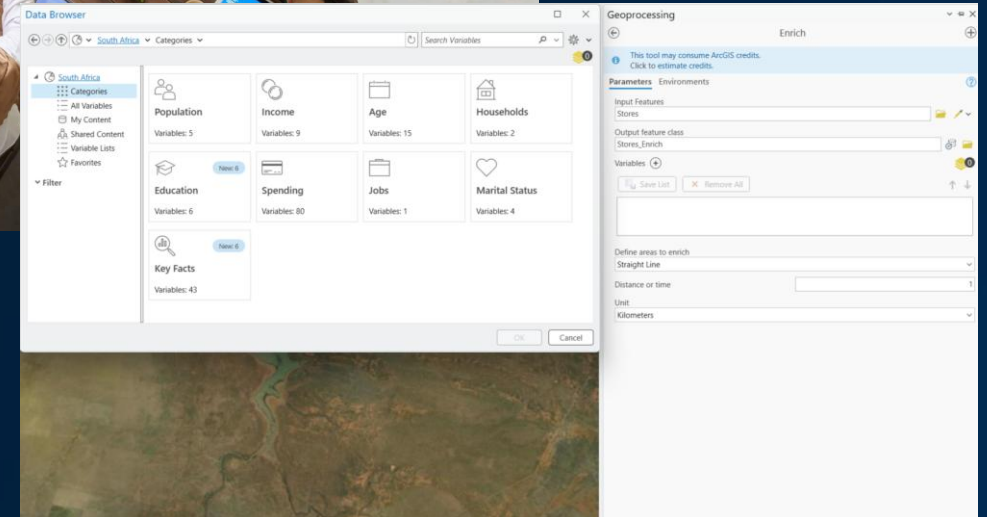
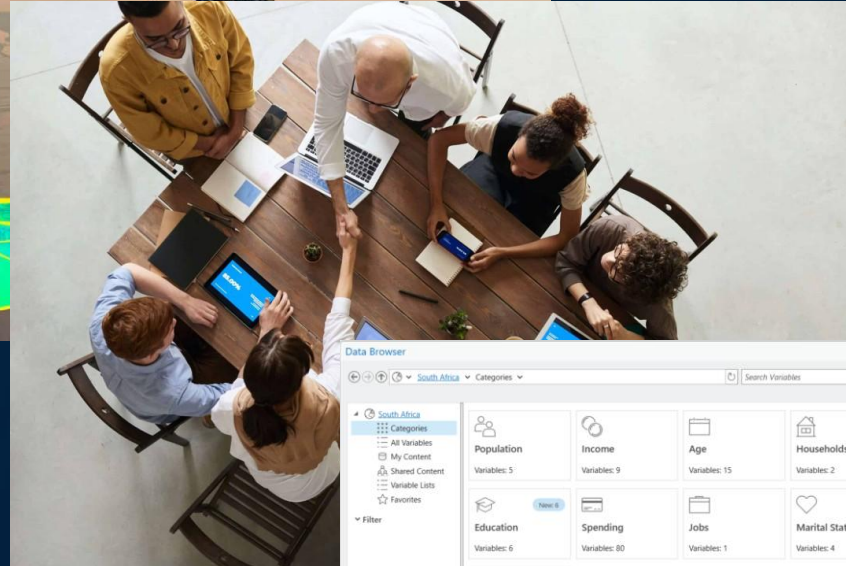


Internal Data

Creating

Sourcing

Enriching



External Data

Public Data

Opensource Data

Living Atlas



Browser tabs: [Browse | ArcGIS Living Atlas of the World](#), [Current Weather and Wind Sta...](#)

Address bar: livingatlas.arcgis.com/en/browse/

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ArcGIS Living Atlas of the World

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10,000+ Results


Trending



Feature Service

USA Current Wildfires

By esri_livefeeds2



Feature Service

Satellite (VIIRS) Thermal Hotsp...

By esri_livefeeds2





Image Service

Sentinel-2 Views


By esri



Feature Service

Current Weather and Wind Sta...

By esri_livefeeds2



Feature Service

National Weather Service Smo...

By esri_livefeeds2

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Proprietary Data

- Point of Interest Data



- Imagery



- Partner Data





Search



Tasking



Orders

1 Search

2 Results

3 Cart

Add AOI Layer and Select Date Range

Map Actions i

Clear



Add Layer



Draw



Extent

Select Dates:

Last 6 Months ▼

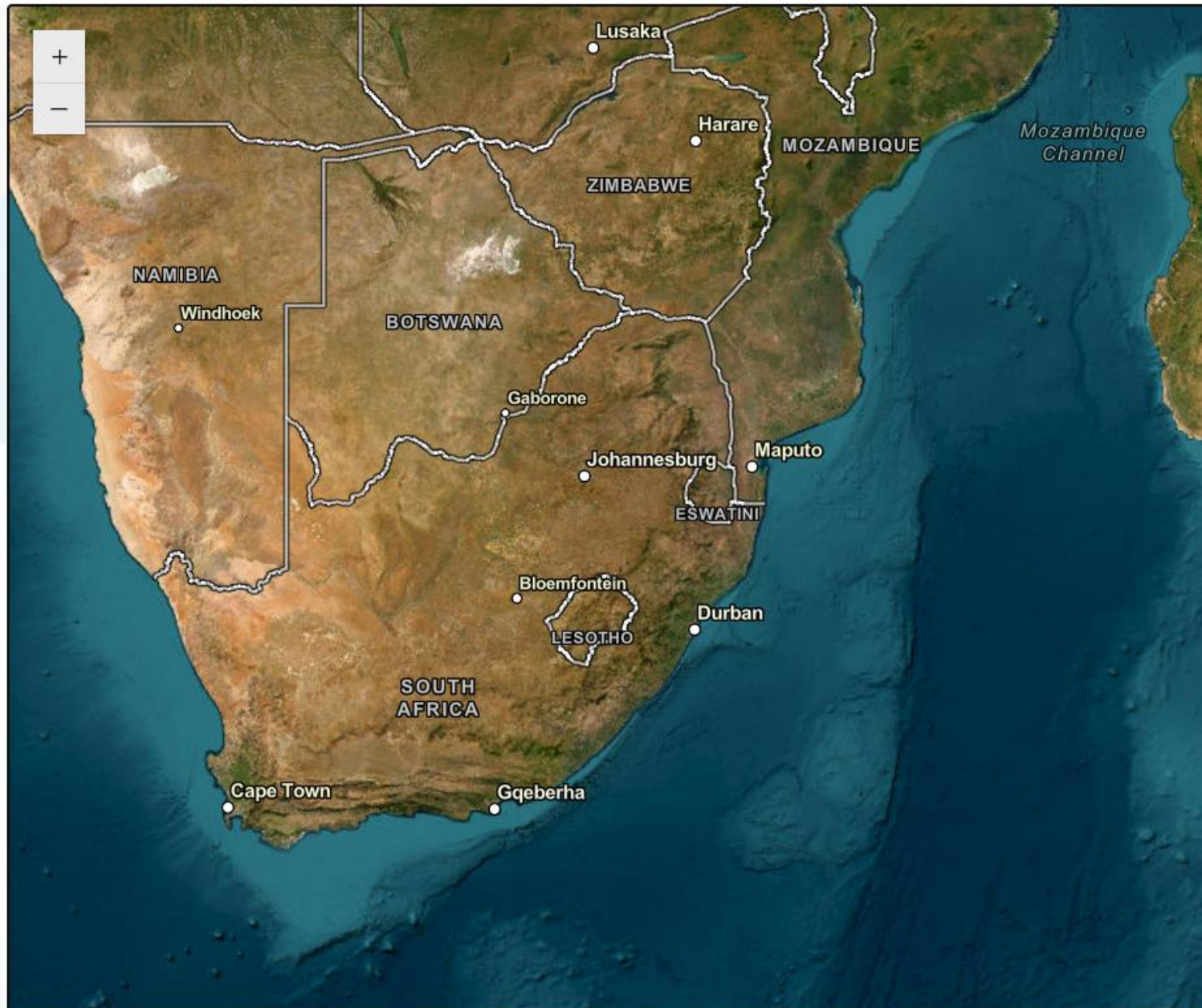


5/12/2025



11/12/2025

Search All Results



ArcGIS and GeoAI : Create your own data

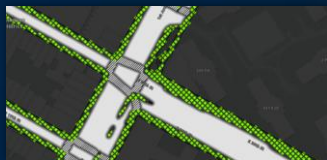
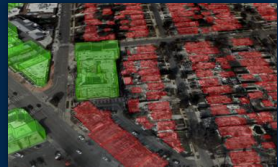
Tshegofatso Manamela



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ArcGIS is being enhanced with GeoAI

Advancing Science



GeoAI
(Tools & Models)

100 models
..Open and Extendable

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Productivity



AI Assistants
(Improve Access
& Efficiency)

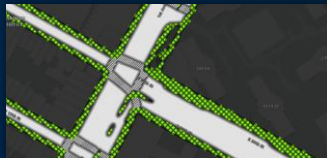
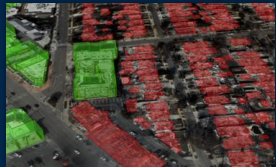
Secure and
Trustworthy

Supporting

- **Tech Support**
- Mapping & Analysis
- **Documentation**
- **Code Generation**
- Search
- App & Solution Creation
- Translation
- ...

ArcGIS is being enhanced with GeoAI

Advancing Science



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AI Assistants
(Improve Access
& Efficiency)



Show all the pedestrian injuries that have occurred with 2 miles of 2100 Foxhall Road, NW, Washington, DC 20007

Secure and
Trustworthy

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- ...

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GeoAI in ArcGIS

Object Tracking



Point Cloud Classification



Segment Anything Model (SAM)



Object detection

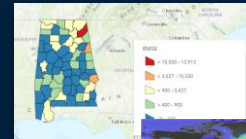


Land cover classification



3D object detection

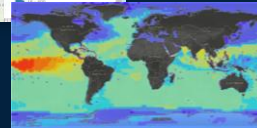
Regression



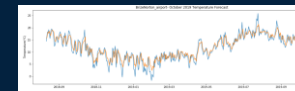
Multi-Modal AutoML



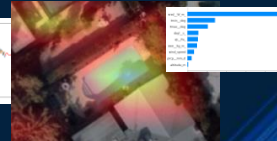
Climate Forecasting



LLM integration



Time Series Transformer



Model Explainability



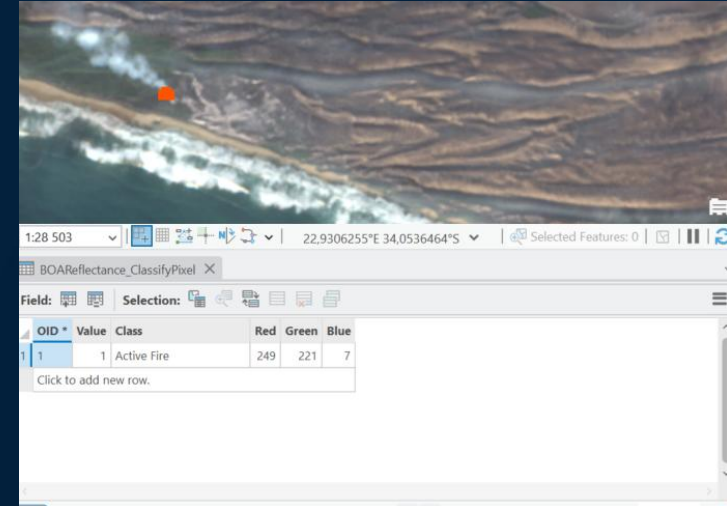
Entity Extraction



Text Classification

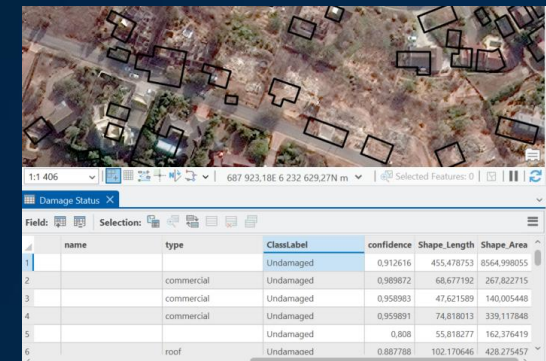
Living Atlas : Pretrained GeoAI models

- Cars
- License Plate Blurring
- Parking Lots
- Land Cover
- Parking Spots
- Humans
- Crowd Counting
- Face Blurring
- Buildings
- Roads
- Parcels
- Ag Fields
- Swimming Pools
- Well Pads
- Oil Spills
- Palm Trees
- Power Lines
- Transmission Towers
- Insulator Defects
- Wind Turbines
- Solar Arrays
- CLIP Zero-Shot Classifier
- Solar Panels
- Ships
- Shipwrecks
- Segment Anything Model (SAM)
- TextSAM
- Trees
- Plant Leaf Disease
- Common Object Detection
- Text Parsing from Photo
- Object Tracking
- Prithvi (Burn scars, Crops, Floods)



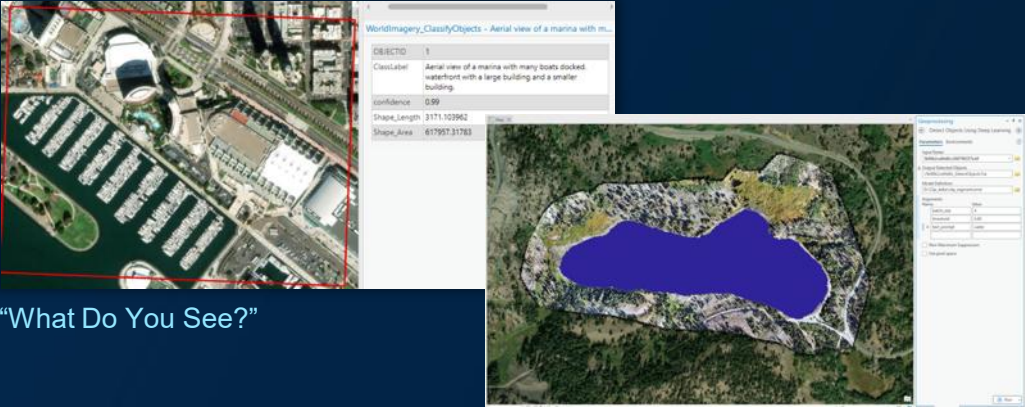
new

- Canopy Height Estimation
- Hugging Face Hub
- Depth Anything
- Prompt-Based Segmentation
- Sidewalks
- Wildfire and Smoke
- Image Inpainting
- Weather and Climate Forecasting
- Table Extraction
- Time Series Foundation Model
- GroundingDINO
- Damage Assessment (Drones)
- Map Simplification
- Edge Detection
- Vision-Language Context-Based Classification
- Building Change Detection
- Image Interrogation



Making AI in ArcGIS more approachable

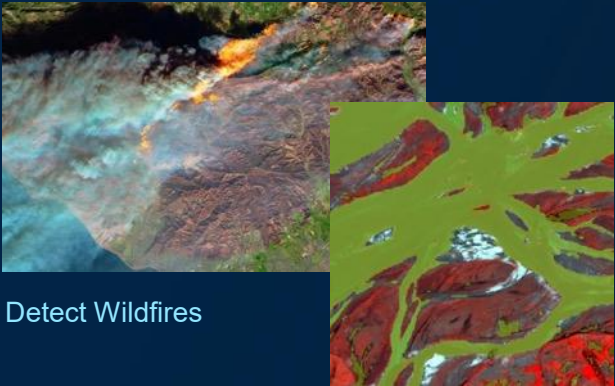
Task specific to Generalized models



“What Do You See?”



“Classify Damage – from this aerial image”



Detect Wildfires

Map Floods



“Red Cars”

Prithvi

Hugging Face

GPT

LLaMA

TextSAM

SAM

Task specific vs Generalized

Task Specific pretrained models

Differentiators

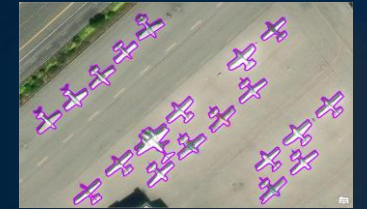
- Applications
- Accuracy
- Data Types
- Tasks
- Size
- Fine-tunable
- Domain



- Single and focused task

Generalized PreTrainedModels

- 1 model has many applications



- Versatile through prompts

Engineering Your Data for Insight

Danika Saayman

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Engineering Your Data for Insight

- What's missing?
- What's wrong?
- What can you add?
- What should you transform?

Data Engineering

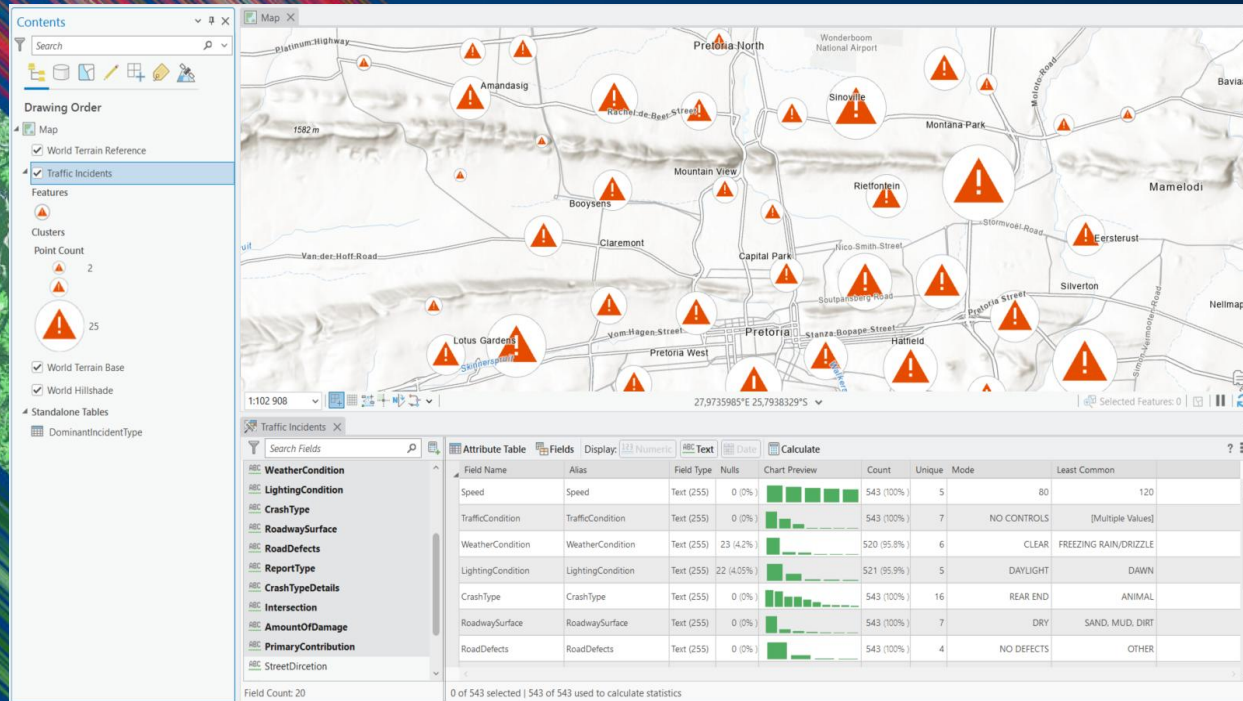
The Fun Stuff

Engineering Your Data for Insight

Data Engineering in ArcGIS

- ArcGIS Pro
- ArcGIS API for Python & ArcGIS Notebooks
- ArcGIS Data Pipelines in ArcGIS Online
- ...and more

Data Engineering in ArcGIS Pro





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