

# ArcGIS & AI

Gerhard "Luigi" Trichtl

Esri User Conference Austria 2025 – powered by SynerGIS



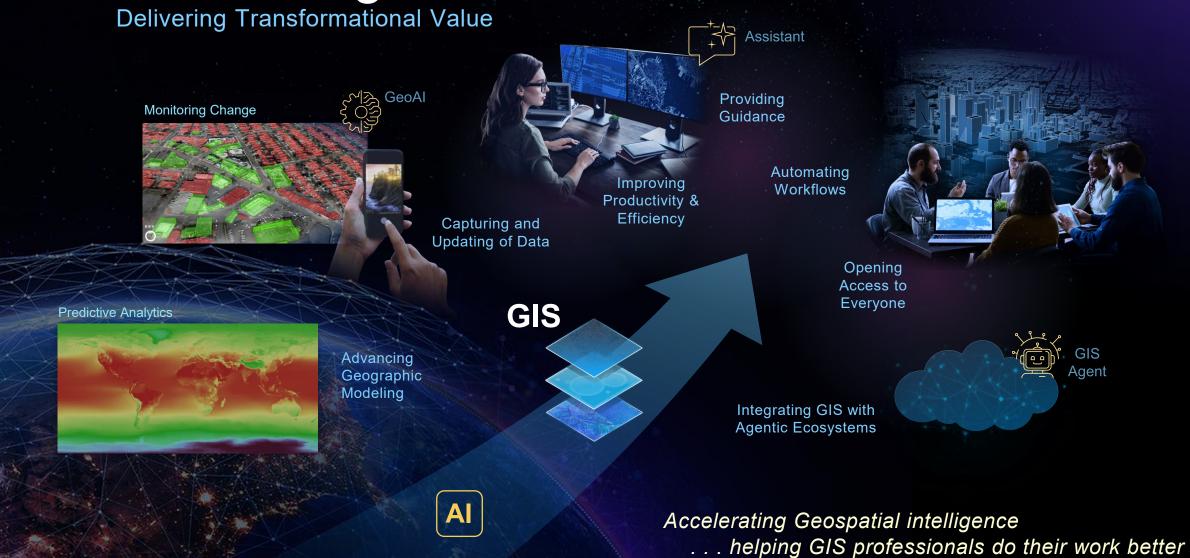
# The Innovation Journey of ArcGIS . . .

**Embracing Modern Technology Trends** 



ArcGIS Is Advancing **Evolving Capabilities, Improving Quality** Spatial Reality and Meeting Emerging Needs Mapping Analysis Data Solutions Science Automation Game Engine Integration Imagery & ΑI Remote Cloud Link Computing Indoor Sensing Security Analysis Data GIS & IPS **BIM** Management Notebooks 3D Enterprise Web Visualization Real-Readiness Maps Big Time & Analytics Data Interactive Shared Mapping Services Infographics Collaboration Standards & (Portals & Hubs) Interoperability Mobile **Immersive** Open Ready-to-Use Apps Experience Dashboards Data Content Embedded GIS Developer Builders Charts Tools Al is integrating and evolving with many other innovations

# GIS is Being Enhanced with Al



# What Value Does Al Bring to ArcGIS?

AUTOMATION

ANALYSIS

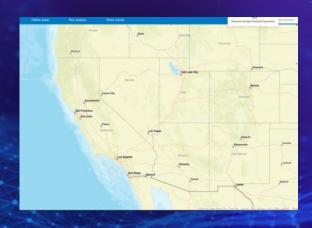
**PRODUCTIVITY** 



**Data Creation** 

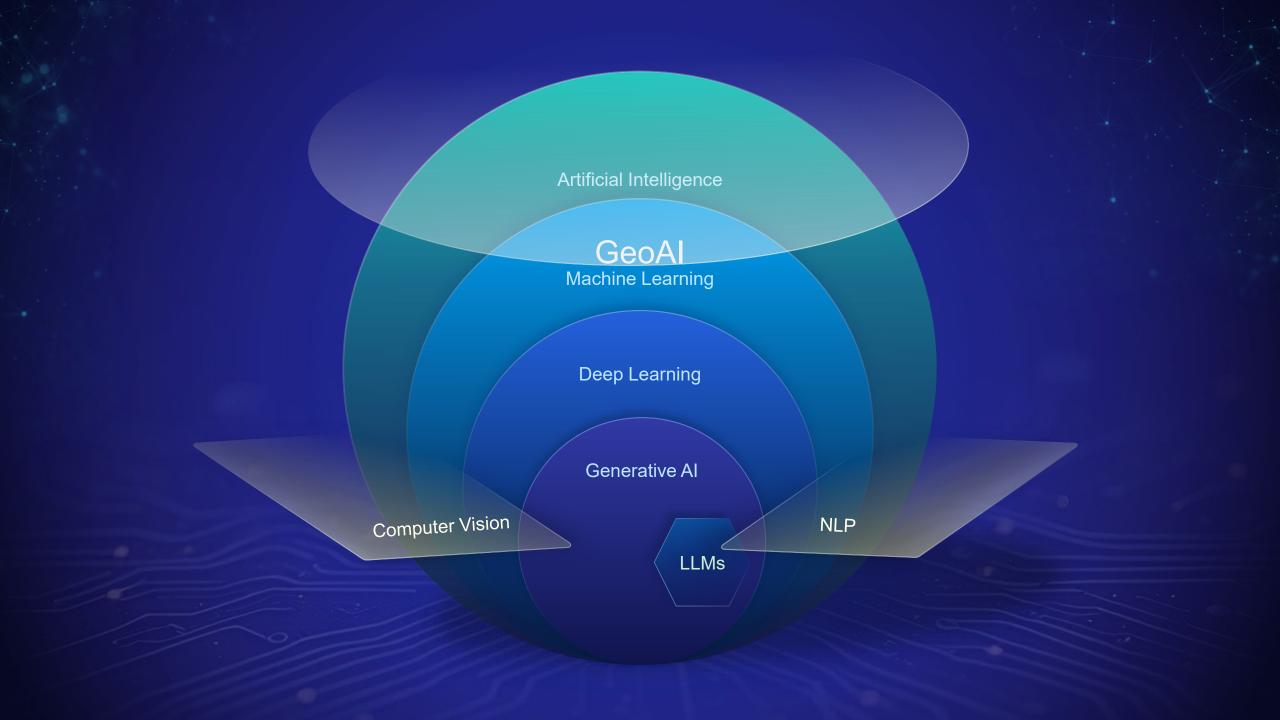


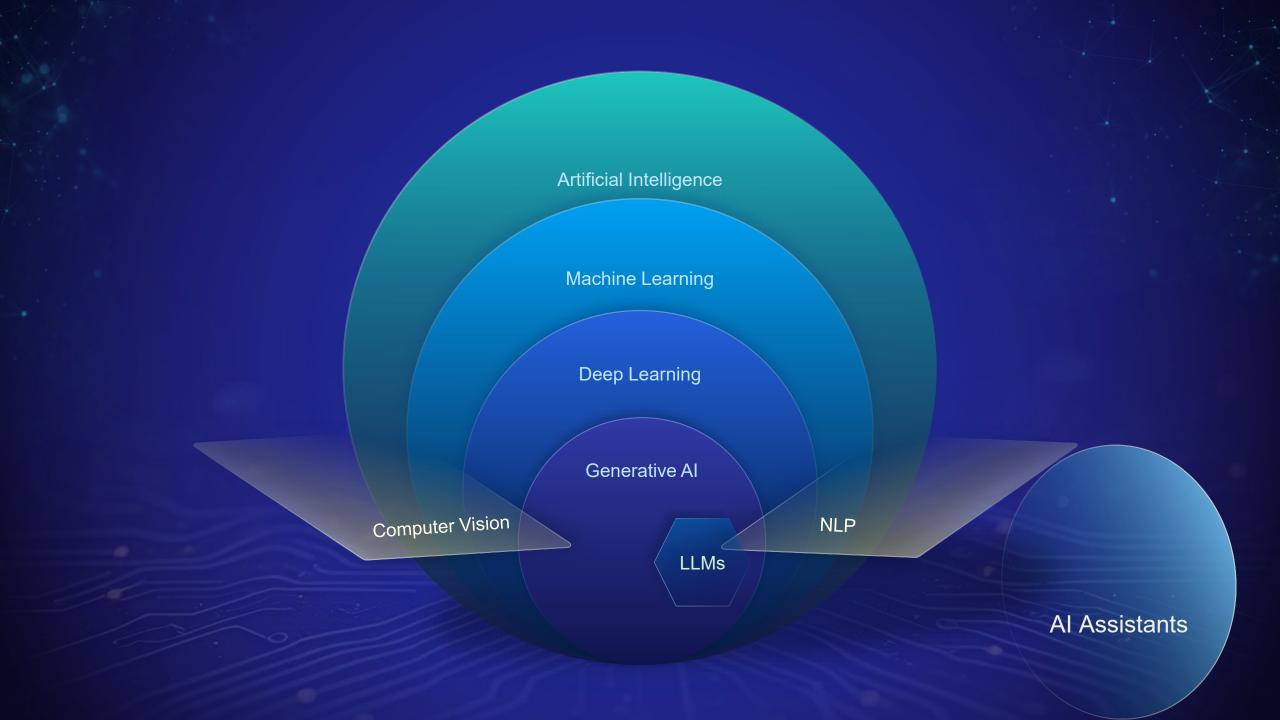
Deeper Insights



Intelligent Experiences

# Fundamentals of AI.







# GeoAl Scientific Al



### GeoAl

Advancing the <u>Science of GIS</u>, with AI models, tools and techniques, to automate data extraction at scale and uncover valuable insights faster than ever.



# Al Assistants

Creating more natural and intuitive **Experiences of ArcGIS**, using intelligent *AI assistants and agents*, to empower GIS users and boost productivity.





# Al Agents

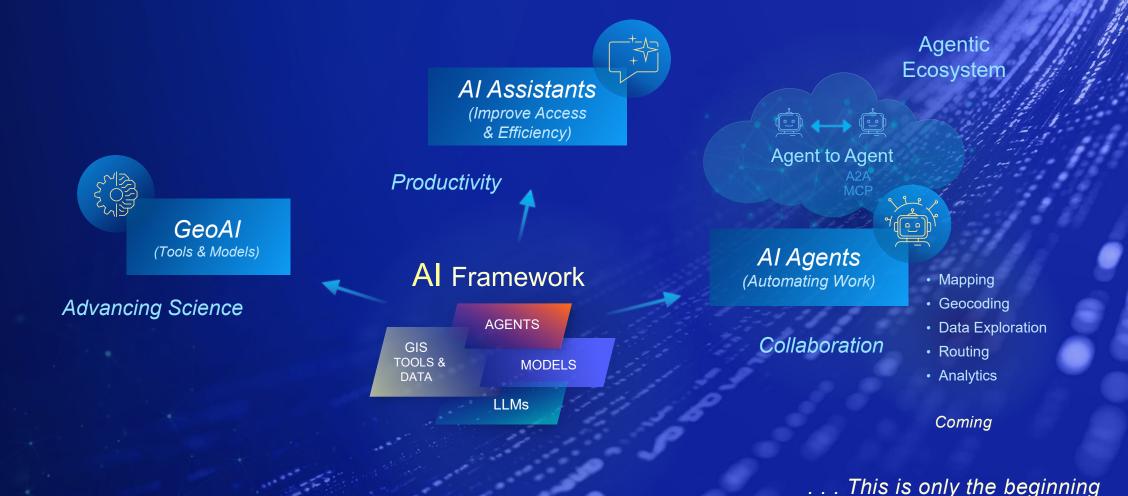
Deliver <u>Geospatial reasoning and</u> <u>intelligence</u> as invokable and autonomous agents, to help accomplish automated and agentic workflows.

Al Agents
Agentic Al

Al becomes more useful when it understands "where"

# ArcGIS Is Becoming a Geospatial Al Platform

Integrating the Power of GIS and AI



# GeoAl

Tools & Models for Feature Extraction & Analytics

### Imagery & 3D

# 3D Feature Extraction

Object Classification



### New

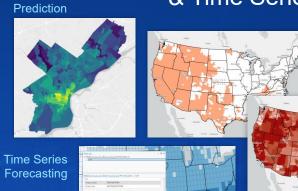
- Pretrained Models
- Foundation Models
- Explainable Al
- · Vision-language Models
- Hugging Face integration
- LLMs for Text



Pedestrian Infrastructure Classification

### Image Interrogation

### Vector Maps & Time Series



Text

Classification



### Coming

- More task-specific Pretrained Models
- More Foundation Models
- Geospatial Foundation Models

# GeoAl in ArcGIS

... Empowering Everyone



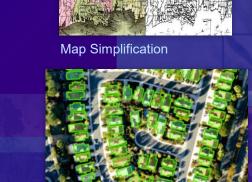
### **GeoAl Models**

### Pre-Trained and Ready-to-Use

- 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

- Solar Panels
- Ships
- Shipwrecks
- Segment Anything Model (SAM)
- Trees
- Plant Leaf Disease
- Common Object Detection
- Text Parsing from Photo
- Object Tracking



**Building Footprints** 

**Crop Classification** 

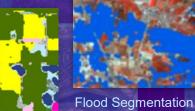
(Prithvi)

**Land Cover** 



Cars (SAM)

Canopy Height Estimation (Meta)



Flood Segmentation (Prithvi)



Change

**Detection Buildings** 

Burn Scars (Prithvi)

### new . Canopy Height Estimation

- Hugging Face Hub Integration
- Depth Anything
- Prompt-based Segmentation
- Pedestrian Infrastructure Classification
- Wildfire and Smoke Classification
- Wildfire Delineation
- Damage Classification

### TextSAM

- · CLIP Zero-Shot Classifier
- GroundingDINO
- Damage Assessment (Drones)
- Map Simplification
- Edge Detection
- Vision-language Context-Based Classification
- Building Point Classification
- Building Change Detection

. . Automating workflows

. . . creating new data layers

Remote Sensing Foundation Models

# **ArcGIS AI Assistants**

Leveraging Generative AI to Streamline Your Work and Make GIS Easier for Everyone

Survey123 (Survey Creation)

### 

Microsoft Teams
 Pro (Tool Suggestion)

• . . .

Survey123Field Maps

Notebooks





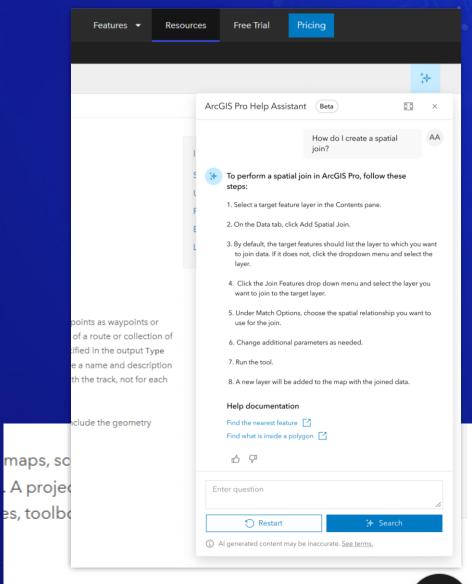
ArcGIS

ArcGIS (Copilot Integration)

# Documentation Assistant (Beta)

A Conversational Experience with the ArcGIS Online Help

- Available now across all online help
  - Must login to online help with ArcGIS Online account
  - Organization must allow AI assistants
- Grounded on authoritative Esri information:
  - Product documentation
  - Tutorials
  - Blogs and other technical articles
- All ArcGIS languages supported, and more

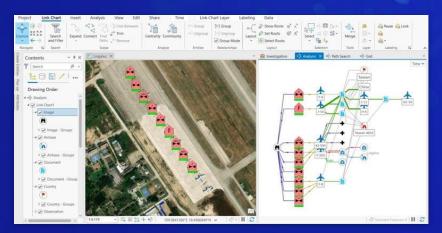


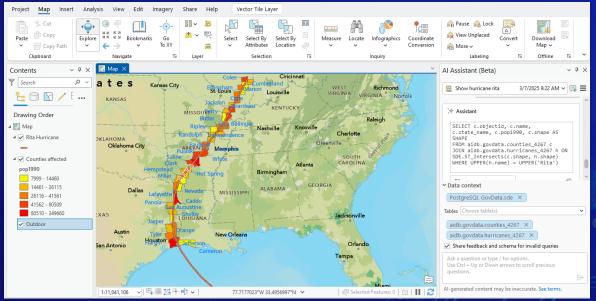
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# ArcGIS Pro Assistant (Private Beta)

Available by Invitation Only

- An in-app assistant to help you streamline everyday tasks
- Use natural language to:
  - Explore ArcGIS Pro Documentation
  - Generate Query Layer SQL Expressions
  - Generate Knowledge Graph Cypher Queries
  - Trigger Common Actions in ArcGIS Pro





# ArcGIS Al Assistants | Release Plan\*

2025 Q1

### Beta

- Business Analyst
- Survey123
- Translation
- Hub
- Pro

2025 Q2

### 2025 Q3

### **Preview**

- Business Analyst
- Survey123
- Translation

### Beta

- Documentation
- StoryMaps
- Arcade
- Hub
- Pro
- ArcGIS for Microsoft Teams

2025 Q4

### **Preview**

- Business Analyst
- Survey123
- Translation
- Documentation
- StoryMaps

### Beta

- Arcade
- Hub
- Notebooks
- Data Explorer Instant App
- Pro
- ArcGIS for Microsoft Teams
- •

2026 Q1

### **General Release**

- Business Analyst
- Survey123
- Translation
- Documentation
- StoryMaps

### **Preview**

- Arcade
- Hub
- Notebooks
- ArcGIS for Microsoft Teams

### Beta

- Data Explorer
- Pro

\* Tentative release plan. Subject to change.

# **Al Assistants Preview**

new

New with ArcGIS Online June Update

- Al Assistants in Preview June 2025:
  - Business Analyst
  - Survey123
  - Instant Apps
- Al Assistants in Preview are:
  - Fully documented
  - Functionally complete
  - Technical support provided
  - Available for use at no additional cost while in preview



### Al is a Catalyst, Advancing GIS Experiences Leveraging and Integrating Many Innovations 3D Visualization **APIs** Reality Capture Immersive (XR) Mapping Digital Twin Imagery Integrating Photo-Realistic 2D / 3D Drones Web Maps Satellite **UAV** Indoors Client Side Video Oriented Lidar Architecture Distributed Experience Web Services Portals Data Engineering Search Open **Cloud Native** Analytics **Data Management** Automation Real-Time Agents APIs **Standards** Data Science Raster Big Data **Assistants** Data Science Chatbot Web Content Open Data **Shared Services** Commercial Living Atlas Al is helping us redefine and transform the role and impact of GIS



# **ASPIRATIONS**

CHALLENGES



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