ArcGIS & AI

A platform for geospatial AI

Rami Alouta
Lead Solution Engineer

Advancing the science, experience and impact of GIS, powered by AI

ArcGIS Is . . .

Empowering Organizations to Leverage Spatial Intelligence

Geospatial AI to help real people solve real problems

ArcGIS Is Being Enhanced with AI

Integrating the Power of GIS and AI across Organizations and Workflows

GeoAI

Tools & Models

Advancing Science

AI Assistants

Improve Access & Efficiency

Productivity

AI Agents

Automating Work, Enabling Apps, . . .

Collaboration

ArcGIS

- GIS Tools & Data
- Agents
- Models
- LLMs

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What is a Geospatial AI Agent?

A ***Geospatial AI Agent*** is a type of agent that has been specifically configured to handle geospatial tasks.

These agents understand the foundational principles of geography, GIS tools and geospatial data.

ArcGIS for Agentic AI

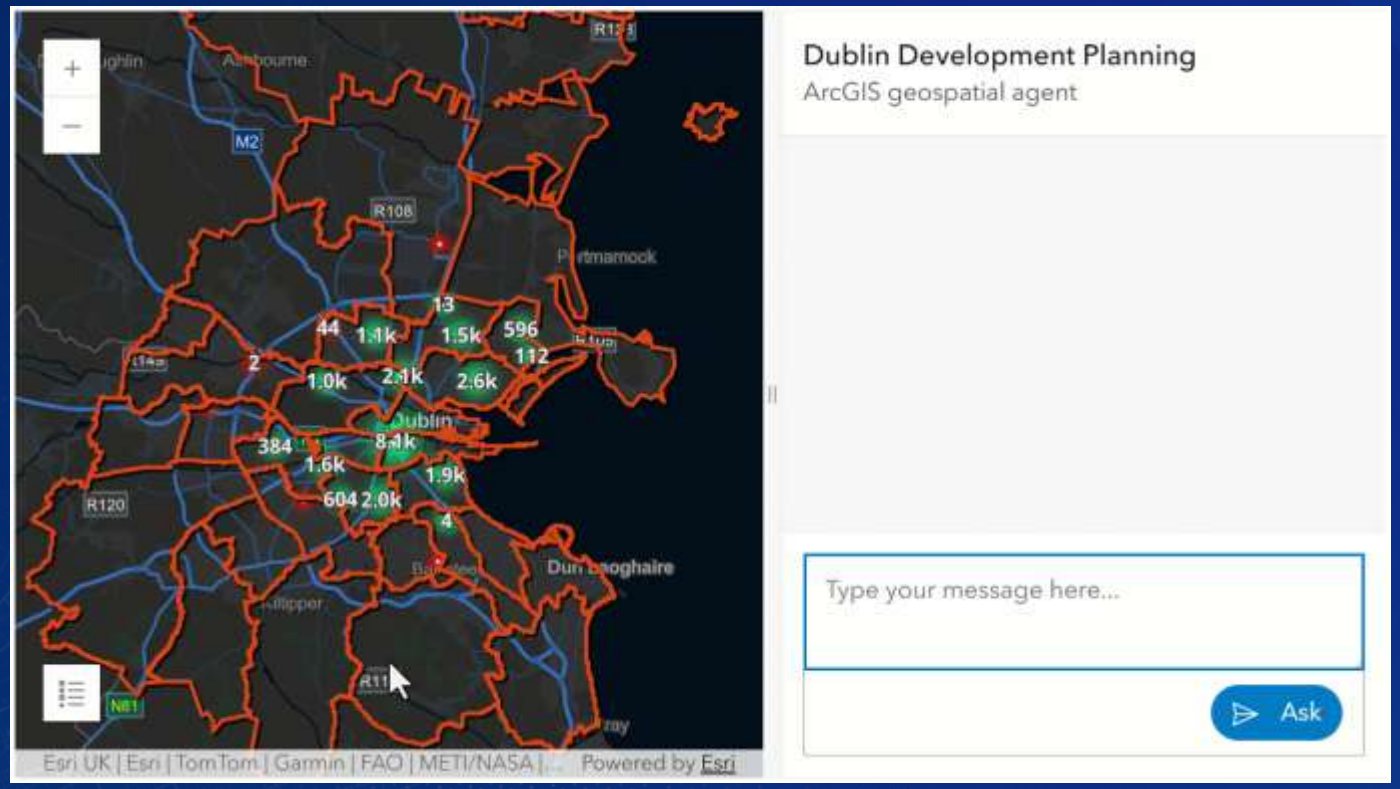
Supporting Geo-Enabled and Geo-Centric Workflows

GEO-**ENABLED**
"Bringing GIS to Agentic Ecosystems"

GEO-**CENTRIC**
"Bringing Agentic AI to GIS Workflows"

Building Agentic Mapping Apps

Streamline Workflows and Simplify Access to Geospatial Knowledge

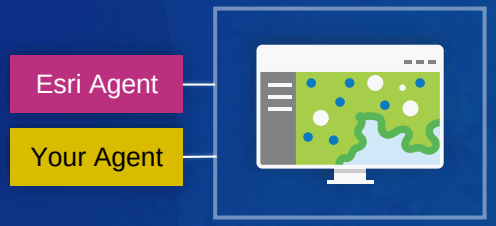


Natural language UX powered by geospatial agents

Configure apps (No Code)

Data Explorer
Instant App
Experience Builder

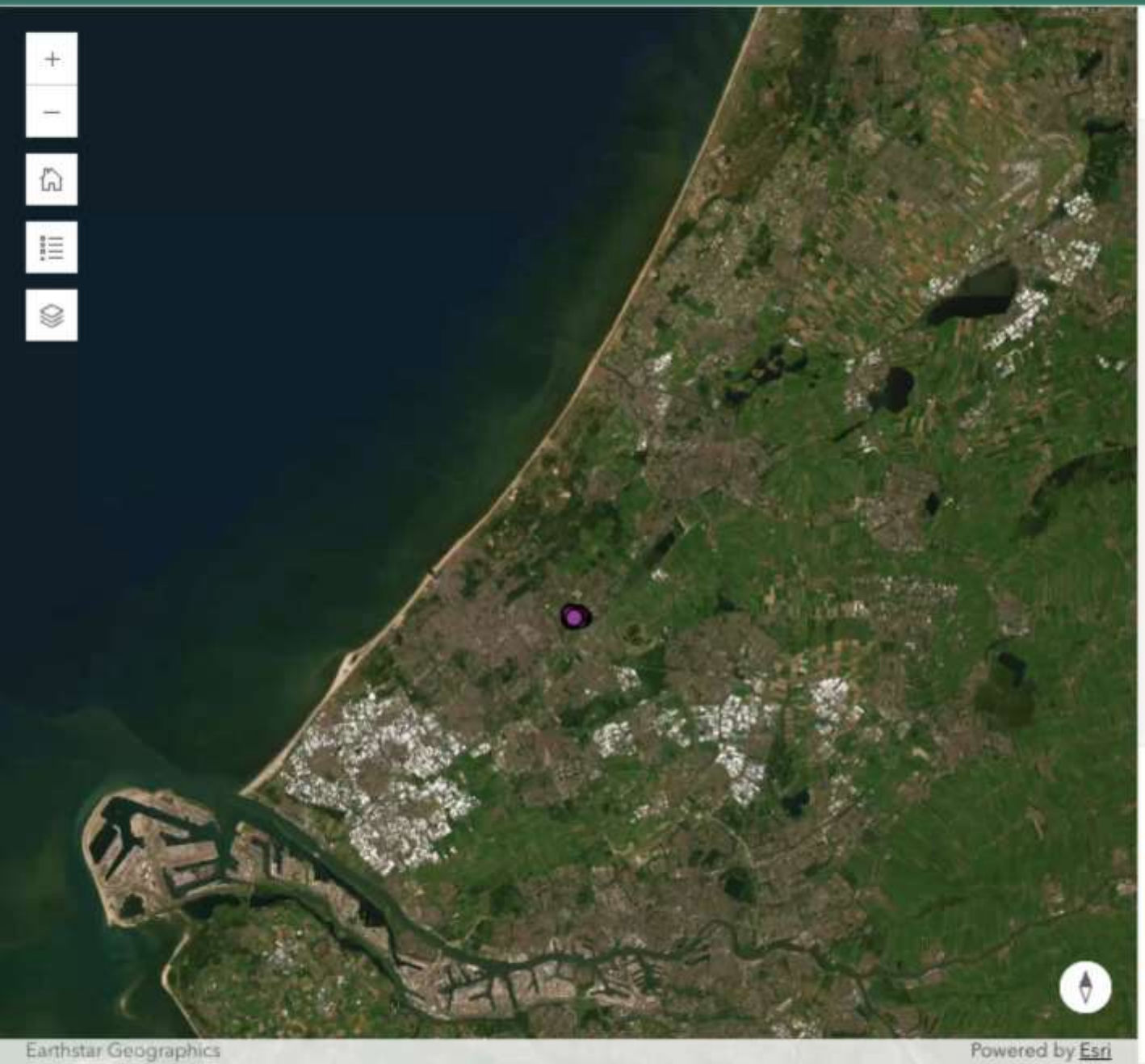
Code custom apps



ArcGIS Maps SDK
for JavaScript

Expanding the reach of GIS

RA
Rami Alouta
ralouta_arcdev



Map Assistant

Ask questions about the map and its data.

Summarize the plant identification review status

Show oak trees

Show approved plants

Hello! Ask me anything about this map.

Type your message here...

Ask

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ArcGIS AI Assistants

Streamlining Your Work and Making ArcGIS Easier

Arcade (Code Generation)

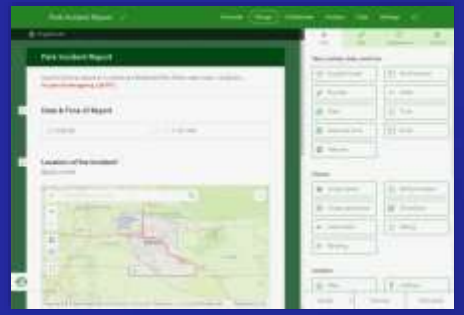
Solutions (Discover and Deploy)

Documentation (All Products)

Business Analyst (Analysis & Mapping)

ArcGIS (Copilot Integration)

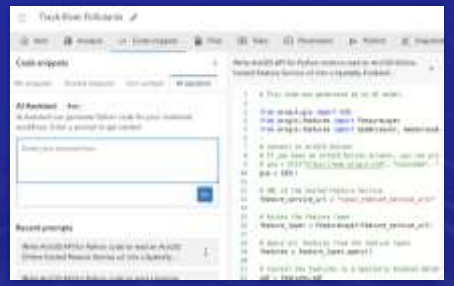
Survey123 (Survey Creation)



Pro (User Productivity)

StoryMaps (Storytelling, Writing)

Notebooks (Code Generation)

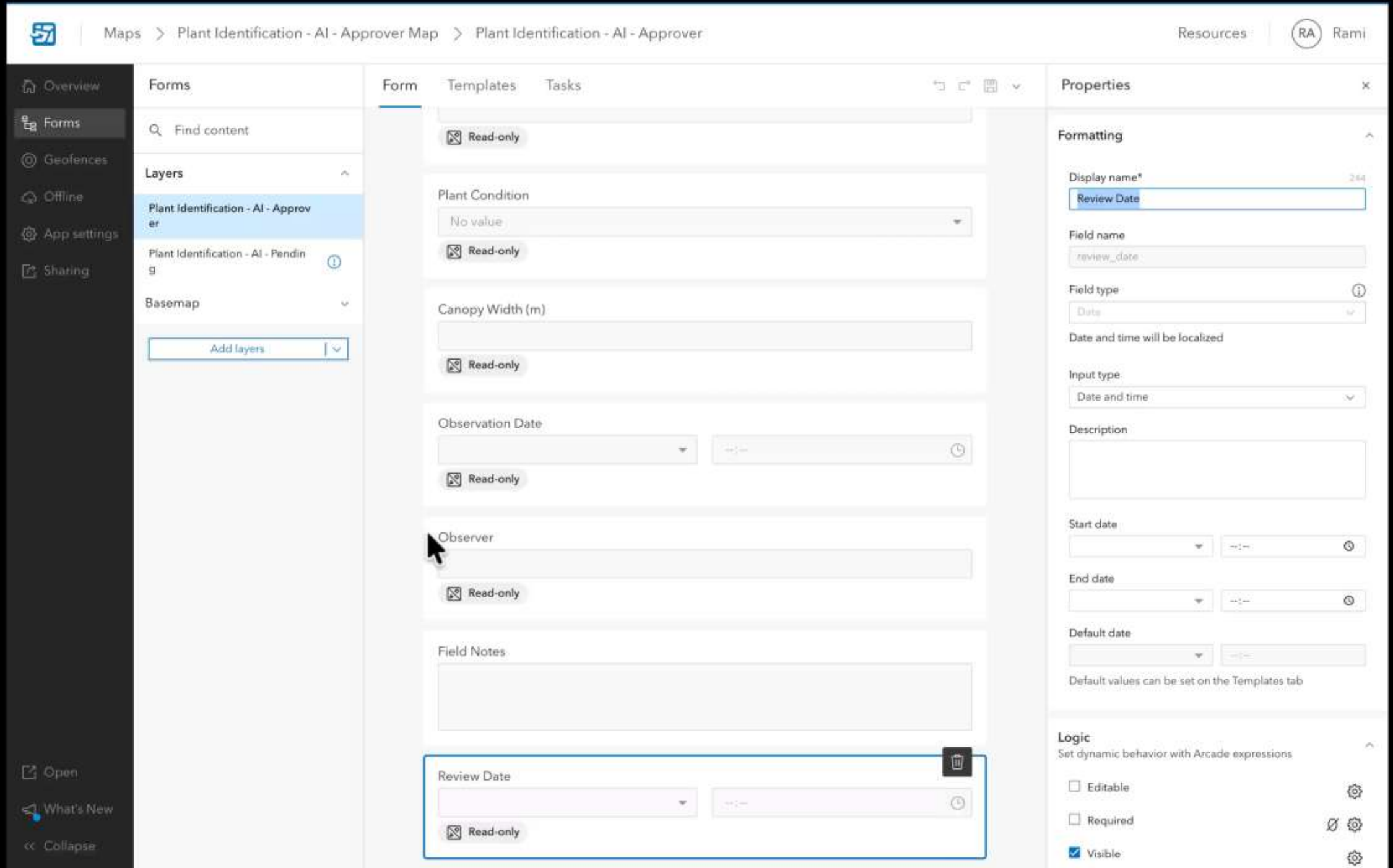


Apps

- Pro
- StoryMaps
- Hub
- Business Analyst
- Instant Apps
- Survey123
- Field Maps
- Drone2Map
- Microsoft Teams
- Notebooks
- ArcGIS Solutions
- . . .

Powered by Natural-Language and Generative AI

. . . Helping users be more productive


Maps
Plant Identification - AI - Approver Map
Plant Identification - AI - Approver
Resources
RA
Rami
Overview
Forms
Geofences
Offline
App settings
Sharing
Open
What's New
Collapse
Forms
Find content
Layers
Plant Identification - AI - Approver
Plant Identification - AI - Pending
Basemap
Add layers
Form
Templates
Tasks
Read-only
Plant Condition
No value
Read-only
Canopy Width (m)
Read-only
Observation Date
Read-only
Observer
Read-only
Field Notes
Review Date
Read-only
Properties
Formatting
Display name*
Review Date
Field name
review_date
Field type
Date
Date and time will be localized
Input type
Date and time
Description
Start date
End date
Default date
Default values can be set on the Templates tab
Logic
Set dynamic behavior with Arcade expressions
Editable
Required
Visible

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GeoAI Tools and Models

AI-Driven Geospatial Data Extraction & Analytics

Data Types:

- Imagery, 3D, Text, Vector and Time Series

Workflows:

- Feature Extraction, Change Detection, Text Entity Extraction . . .
- Feature Classification, Pixel Classification, Image Interrogation
- Similarity Search, Predictive Analysis, Anomaly Detection . . .

GeoAI Models:

- Ready-to-Use, ArcGIS Living Atlas of the World
- Train Your Own, Deep Learning Studio, Pro or Python
- AI Services, Wide Range of LLMs Integration

Coming:

- Location Embeddings

Object Detection

3D Feature Extraction

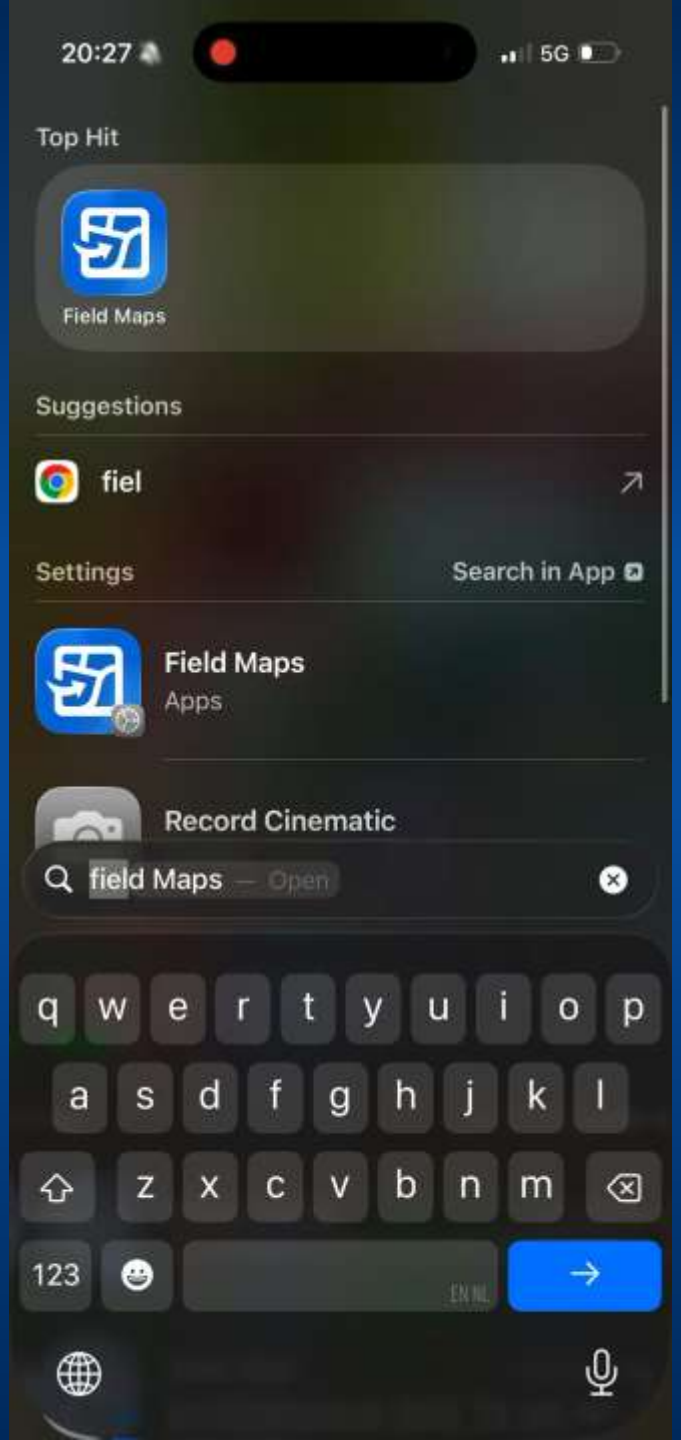
Change Detection

Time Series Forecasting

Entity Extraction

Building Footprint Detection

Landcover Classification


20:27
5G
Top Hit
Field Maps
Suggestions
fiel
Settings
Search in App
Field Maps
Apps
Record Cinematic
field Maps — Open
q w e r t y u i o p
a s d f g h j k l
z x c v b n m
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AI-Powered Plant Identification

Collector view → AI enrichment → In Review

This notebook is the AI enrichment step in the field collection workflow. All the mechanics live in the `plant_identification/` package — the notebook itself stays short and readable.

Four steps:

1. Load the Collector view layer
2. Query pending features with photo attachments
3. Analyse photos with AI (shot-type-aware merge)
4. Apply the enriched attributes and flip status to `In Review`

Empty markdown cell, double-click or press enter to edit.

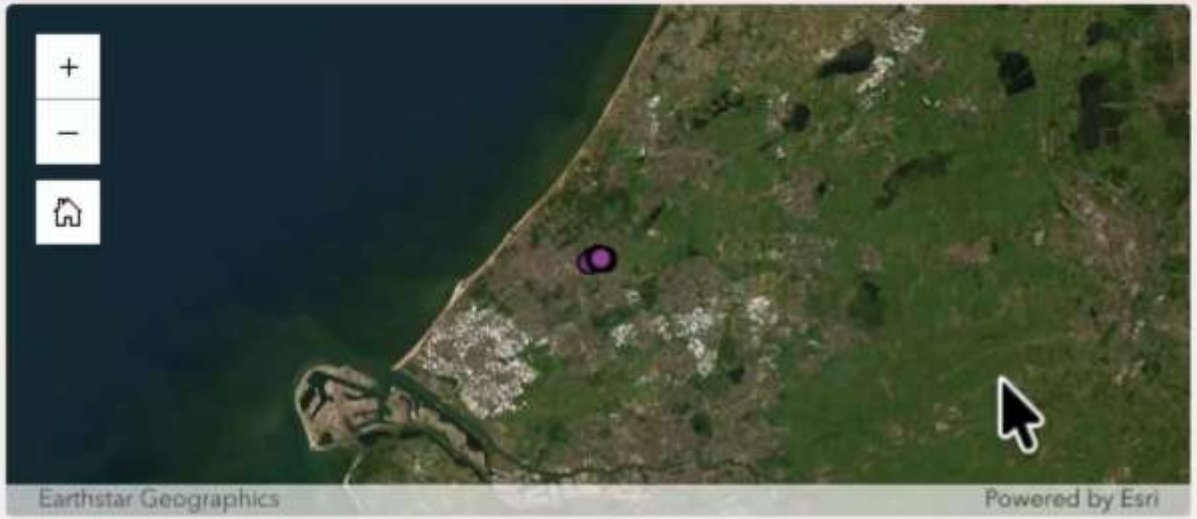
Keep Undo

```python
import sys, os
sys.path.insert(0, os.path.abspath(".."))

import plant_identification as pi

cfg = pi.load_config("../configs/plant-identification.example.json")
gis = pi.connect(cfg.portal_url, username=cfg.username)
```

[1] ✓ 8.2s Python

```
Setting `verify_cert` to False is a security risk, use at your own risk.
Signed in as: ralouta.aiddev (ArcGIS Online)
```

REVIEW PLANT SUBMISSIONS



Select a Submission | Approve Submission

Search

Rose | Rosa
Date of Submission: 4/21/26, 6:35 PM
Observer: Rami Alouta
Status: Needs Revision
Select to Approve

Tree |
Date of Submission: 4/23/26, 8:08 AM
Observer: Rami Alouta
Status: In Review
Select to Approve

Linden | Tilia
Date of Submission: 4/21/26, 7:42 PM
Observer: Rami Alouta
Status: In Review
Select to Approve

Approved | Pending Review | Needs Revision | In Review | Rejected

< 11 of 44 >

No plant name recorded - In Review

Plant Observation Summary

Common Name	N/A
Latin Name	N/A
Family	N/A
Plant Type	Tree
Plant Condition	Healthy
Height (m)	5.00
Canopy Width (m)	1.75
Observation Date	23 Apr 2026
Observer	Rami Alouta

Detect Objects Using Deep Learning

Imagery → Model → Features

This notebook runs a deep-learning object-detection model over a patch of imagery, cleans the raw detections, and publishes them as a hosted feature layer. All the mechanics live in the `detect_objects/` package — the notebook itself stays short and readable.

Five steps:

1. Load imagery
2. Draw the analysis area on the map
3. Pick a deep-learning model
4. Detect objects
5. Clean and publish the results

Setup — sign in and load the run configuration

```
import sys, os
sys.path.insert(0, os.path.abspath(".."))

import detect_objects as do

cfg = do.load_config("../configs/detect-objects.example.json")
gis = do.connect(cfg.portal_url, username=cfg.username)
```

[17] ✓ 10.7s Python

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