

Evolving Geospatial Data – the role of AI

GGSC

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Evolution of Geospatial data



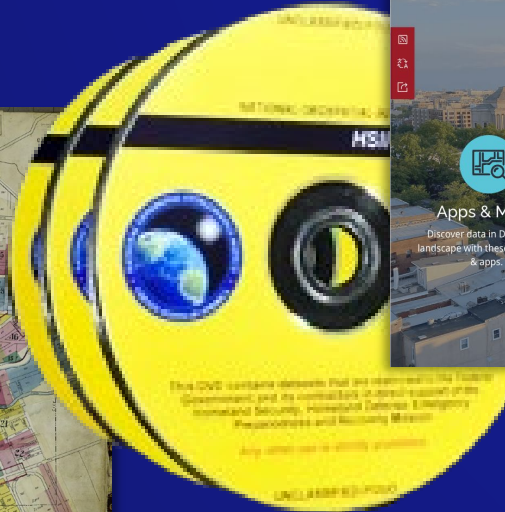
Tablets



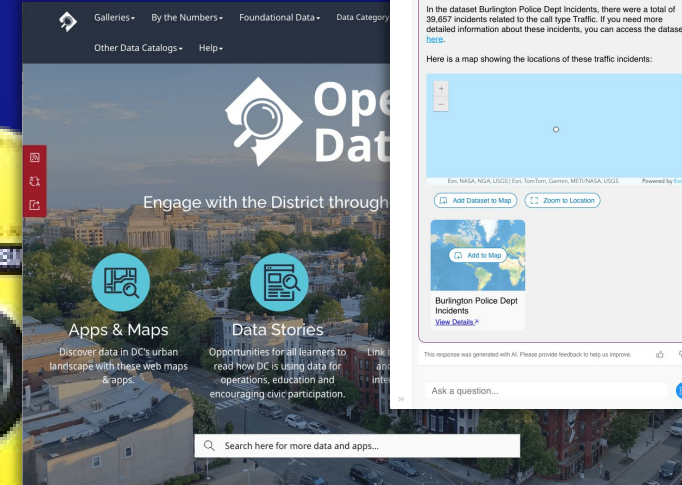
Papyrus



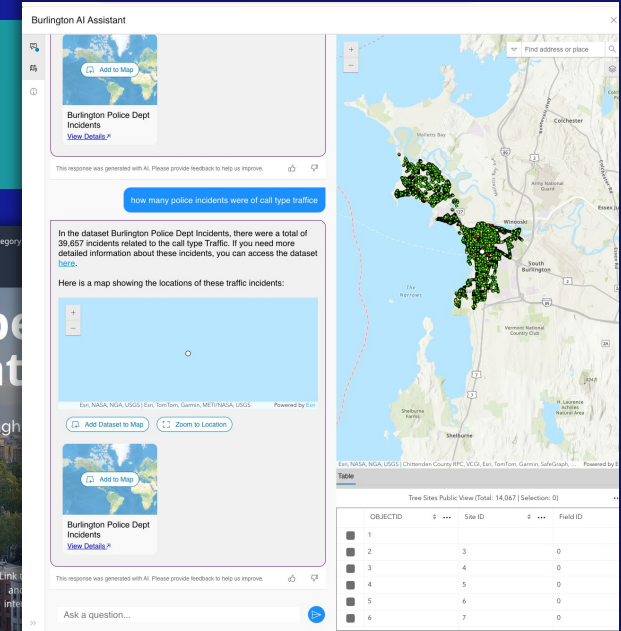
Paper



Discs



Web



AI



Millions of Authoritative Services
(accessible with open standards + metadata*)

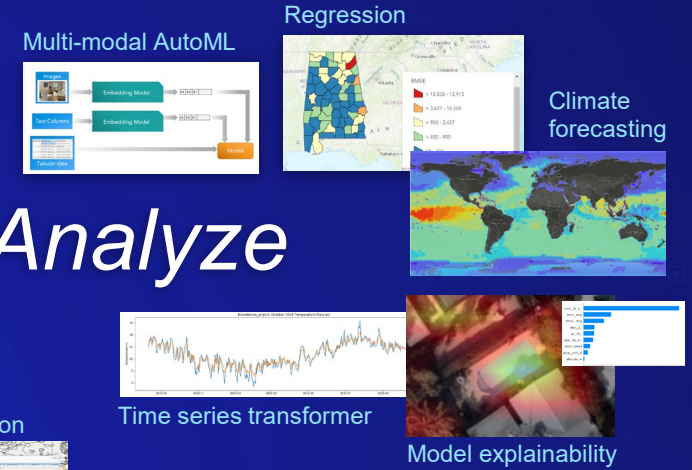


GeoAI

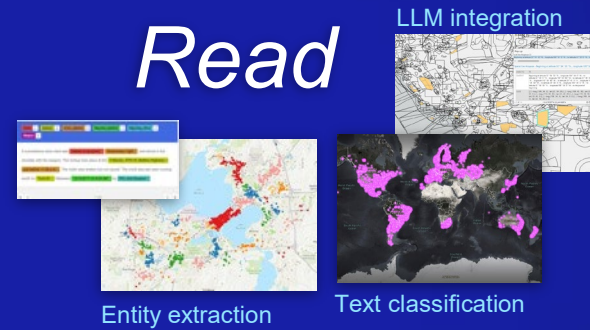
See



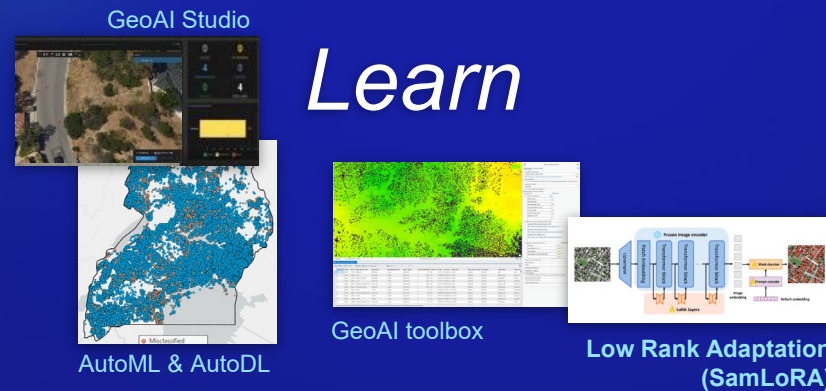
Analyze



Read



Learn



Create



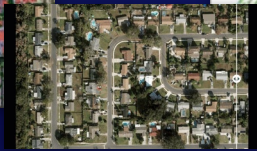
Task-specific Pretrained models

Focused on industry specific use cases

State & Local Government



Land Cover Classification



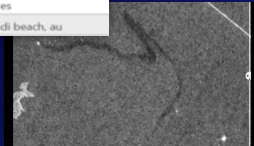
Pool Segmentation (SAM)



Optical Character Recognition

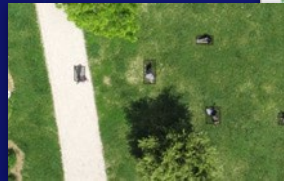
10, cl gujarrak, 21668, es	10, cl gujarrak, 21668, es
26, cl palmitos, 4130, es	26, cl palmitos, 4130, es
campbellparade, bondi beach, au	campbell parade, bondi beach, au

Address Correction



Oil Spill Detection (SAR)

Public Safety



Human Detection (Drone Imagery)

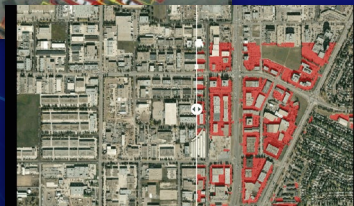


Optical Character Recognition

Transportation



Parking Spot Detection



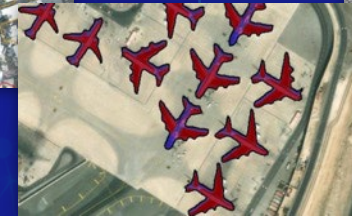
Parking Lot Detection

Parking Lot Detection

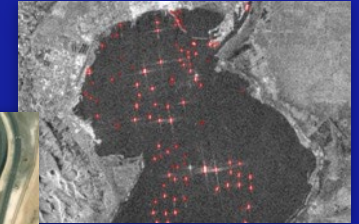
Defense & Intel



Situational Awareness

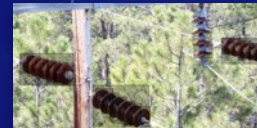


Detecting Aircrafts



Ship Detection

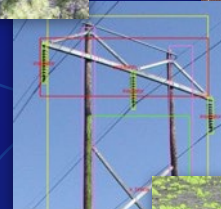
Utilities



Insulator Defect Detection



Solar Photovoltaic Park Classification



Transmission H-Structures



Tree Point Classification

Natural Resources



Oil Spill Detection (SAR)

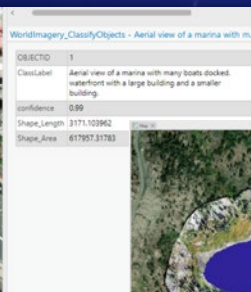


Agricultural Field Boundary



Generalized Pretrained Models...

Leveraging Vision- & Textual-language models



“What do you see?”



“Delineate water”



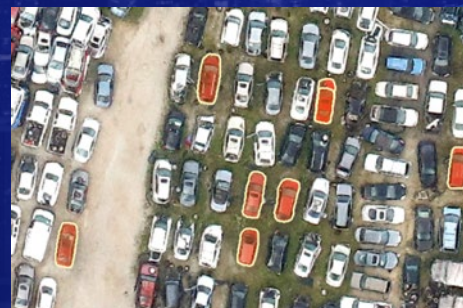
“Classify damage
– from this aerial
image”



“Fire”



“Flood”



“Red cars”



Generative AI: LLMs & Foundation models for Geospatial Data

Leverage natural language & computer vision

General purpose models – multiple tasks

Models learn using prompts and examples

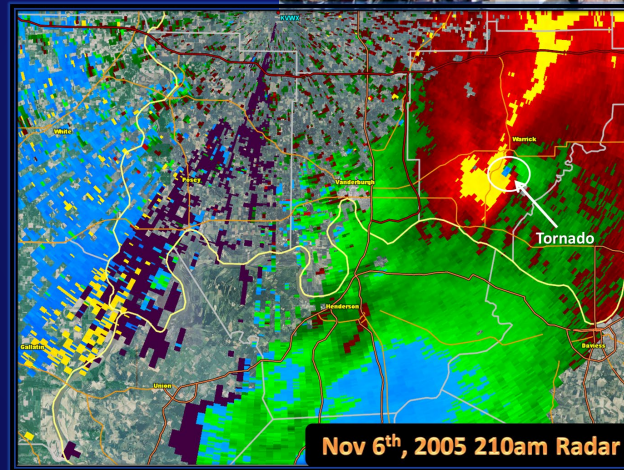
- Text
 - LLM support
 - Embedded (Mistral)
 - External (3rd party)
- Imagery
 - Vision-language models
 - Classification & segmentation
- Tabular & Time series
 - TabPFN by PriorLabs
 - TimesFM, Time-MOE*



"I believe that a key reason we fail to achieve progress is that we choose to either ignore information we have, or we don't use it enough.

Important knowledge ends up [being] stored in complex interfaces and inaccessible databases."

– Dr. Olga Lucía López Morales,
Director General at IGAC
(Colombia Geographic Institute)





Open Data Hub

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Data Maps and Apps



Zoning + Planning



Welcome to the District of Columbia Zoning Handbook

Zoning is a technical subject, but it affects everyone. To make the District of Columbia's zoning law and processes more understandable and accessible we have developed this handbook. The Handbook is intended to help the citizens of Washington, DC understand and participate in the zoning process. **Please be advised, however, that it is not intended as a substitute for the Zoning Regulations and the Zoning Regulations should be consulted if there are any questions.**

This Zoning Handbook contains a description of all the zone districts and describes several important zoning concepts and recently enacted changes to the Zoning Regulations. The Handbook was developed to give explanations and illustrations for key elements of the Zoning Regulations. We hope that it proves useful to aid in everyone's understanding of the ordinances and participation in the zoning



DC Zoning AI Assistant

What questions can I ask about Zoning?

You can ask questions about new zones lookups, comprehensive planning areas, single member districts, historic zones, and other related zoning information.

Sources: [Interagency Data Team Presentation March 13, 2019](#) - on page 25 [Interagency Data Team Presentation February 17, 2022](#) - on page 42 [Interagency Data Team Presentation July 26, 2023](#) - on page 19 [Interagency Data Team Presentation July 26, 2023](#) - on page 19

Interagency Data Team Presentation March 13, 2019
[View Details](#)

Interagency Data Team Presentation February 17, 2022
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Interagency Data Team Presentation July 26, 2023
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This response was generated with AI. Please provide feedback.

DC Zoning AI Assistant

what is the zoning for 800 east capitol st ne

The zoning for 800 East Capitol St NE falls within the following overlay areas:


1. Capitol Interest Overlay Area: This area promotes and protects the public health, safety, and general welfare of the U.S. Capitol precinct and the adjacent area. Zoning includes RF-1/CAP, RA-2/CAP, MU-2/CAP, MU-4/CAP, MU-4/CAP/CHC, and PDR-1/CAP. [More Info](#)
2. H Street Northeast Neighborhood Mixed-Use Housing Sub-District: Intended to encourage residential uses along the H Street, NE, corridor and establish design guidelines for new and rehabilitated buildings. Zoning includes NMU-4/H-H, NMU-5A/H-H, NMU-6B/H-H, NMU-7B/H-H, and NMU-8B/H-H. [More Info](#)
3. Capitol Hill Commercial Mixed-Use Area: Encourages adaptive use and reuse of existing buildings, concentrating non-residential uses in commercial zones in certain areas of Capitol Hill. Zoning includes MU-4/CHC and MU-4/CAP/CHC. [More Info](#)
4. Eighth Street Southeast: Encourages new neighborhood-serving retail and service businesses and office development in close proximity to the Navy Yard. Zoning includes NMU-7B/ES. [More Info](#)
5. H Street Northeast Neighborhood Mixed-Use Retail Sub-District: Intended to encourage retail uses and a scale of development compatible with existing buildings. Zoning includes NMU-4/H-R and NMU-5A/H-R. [More Info](#)

You can find more details about these overlay areas in the Overlay Areas 2016 dataset [here](#).

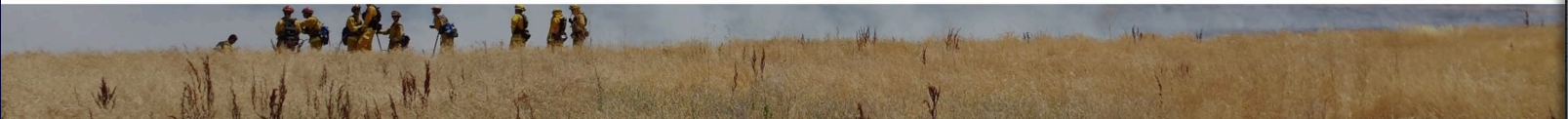
Here is a map showing the location and the overlay areas:

Ask a question...

Emergency Preparedness & Response




HomePrograms




The Department of Forestry and Fire Protection is committed to data transparency and data sharing, to increase access to public data by making it more visual and accessible

Data Categories


Learn about the data that drive the different CAL FIRE datasets



Biology



Boundaries and Ownership



Climate



Hydrologic



Imagery



Infrastructure


CAL FIRE AI Assistant

make a map of wildfires in the sierra nevadas

Here are some of the recent wildfires in the Sierra Nevada area:

- SUMMIT Fire**
 - Location: Near Kings Canyon National Park
 - Size: 19.7 acres
 - Cause: Undetermined
 - [More Info](#)
- HAPPY Fire**
 - Location: Monarch Wilderness North of the Kings River
 - Size: 6303 acres
 - Cause: Natural
 - [More Info](#)
- Coffee Pot Fire**
 - Location: Eight miles east of Three Rivers in Sequoia National Park
 - Size: 14103 acres
 - Cause: Natural
 - [More Info](#)
- Sentinel Fire**
 - Location: Below Sentinel Ridge in Cedar Grove, Kings Canyon National Park
 - Size: 282 acres
 - Cause: Natural
 - [More Info](#)

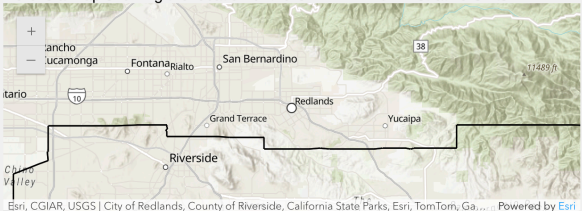
Here is a map showing the location of these wildfires:



CAL FIRE AI Assistant

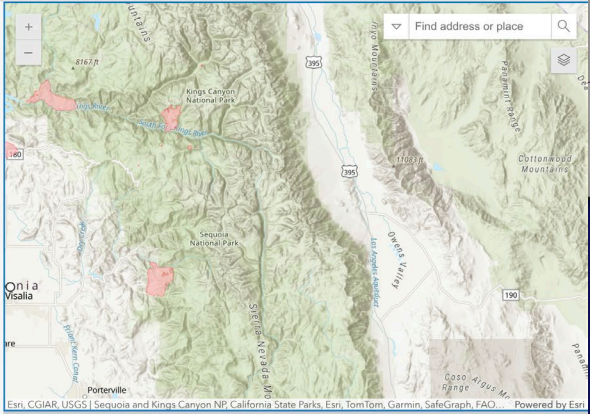
The fire risk near Redlands, California is associated with the San Bernardino Unit and the Riverside Unit. These units are part of the CAL FIRE Administrative Units and are designed to address fire suppression over a certain geographic area. You can find more information about these units in the [CAL FIRE Administrative Units dataset](#).

Here is a map showing the location of the CAL FIRE Administrative Units:



[Add Dataset to Map](#) [Zoom to Location](#)

[Add to Map](#)



	OBJECTID	poly_SourceOID	poly_IncidentNa...	poly_Fes
	23651	13	Morrow Rd	Wildfire D
	23656	14	RX DFG-Frances Crane W...	Prescribe
	23768	18	COUNTY RD 251 & COUN...	Wildfire D
	23773	21	TL 644 Tree Two	Wildfire D
	23802	19,921	KAHILI 2024a FIRE	Wildfire F
	23812	43	Seegmiller	Wildfire D



June 2025