



Geospatial ML with Amazon SageMaker

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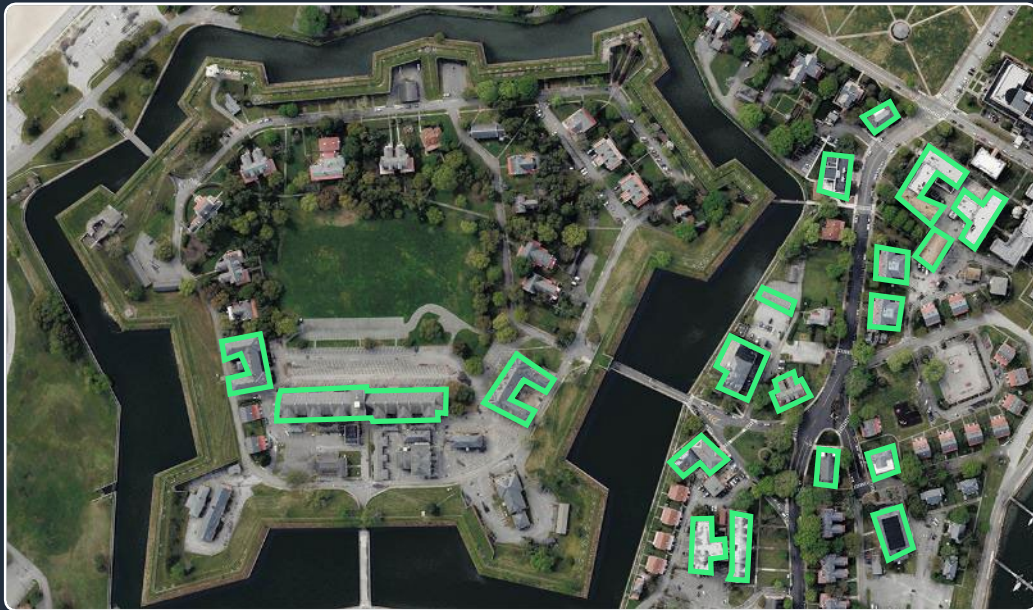
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Agenda

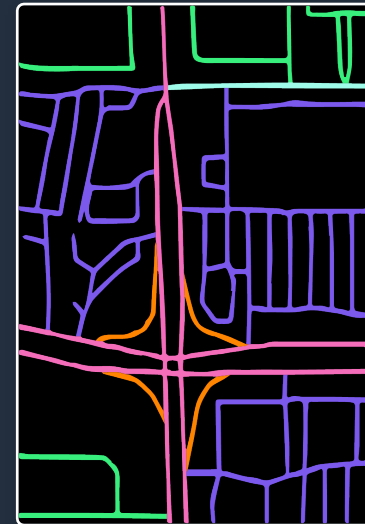
- Amazon SageMaker Geospatial capabilities overview
- Monitoring deforestation demo using geospatial data
- Measuring glacier total area demo using geospatial data
- How to get started

What is geospatial data?

Raster:
Aerial and satellite imagery



Vector:
Mapping data



Road mask
(color as speed)



Challenges with geospatial ML

- 1 — Accessing high-quality geospatial datasets requires working with multiple data sources and vendors
- 2 — Preparing massive geospatial data for training and inference can be time consuming and expensive
- 3 — Specialized tools are required to visualize geospatial data and integrate with MLOps infrastructure
- 4 — Data scientists often require geospatial expertise, and the learning curve is steep

Access geospatial data sources

Use data sources from AWS

- Landsat 8
- Sentinel-2
- Open Street Map

Bring your own licensed geospatial data

- Planet Labs

Create an Earth Observation job

Step 2: Define input data

Define an Area of Interest (AoI) by uploading a GeoJSON file or drawing a polygon on the map. SageMaker Geospatial extracts only the data within the AoI. You can also set date ranges and property filters to refine the results.

1. Define Area of Interest (AoI)

Upload Area of Interest (Format: GeoJson)

Edmonton

72 images found

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Geospatial

Overview Earth Observation jobs Vector Coordinates jobs Map visualization

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SageMaker now supports geospatial ML

Build, train, and
deploy ML models
using geospatial data



Access readily available geospatial data sources



Efficiently process or enrich large-scale geospatial datasets



Accelerate model building with pretrained ML models



Analyze and explore predictions with visualization tools

SageMaker geospatial use cases



Assess risk and insurance claims



Inform trading strategies



Monitor climate change



Support sustainable urban development



Maximize harvest yield and food security



Predict retail demand

Deforestation Monitoring Demo



<http://earthobservatory.nasa.gov/IOTD/view.php?id=40139> (Public Domain)

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Snow Pack Monitoring Demo



Get started today

[Official website](#)



[Developer guide](#)



[Example notebook](#)





Thank you!