



# Geospatial ML with Amazon SageMaker

Amit Modi

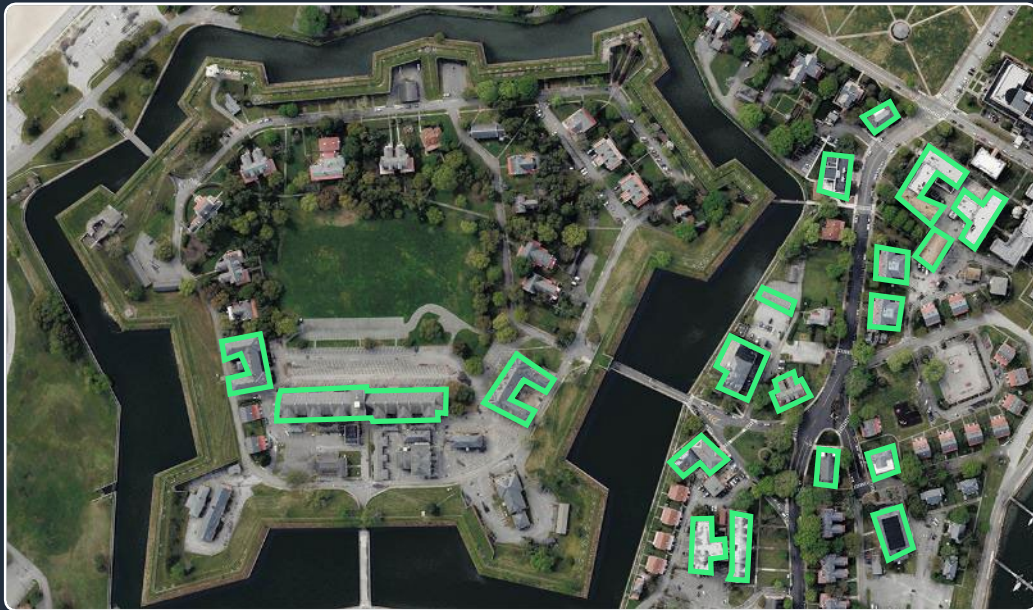
Principal Product Manager  
Amazon Web Services

# Agenda

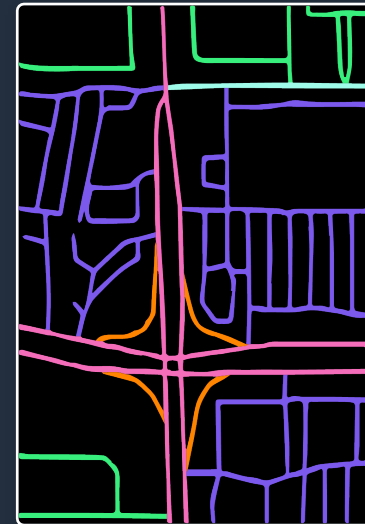
1. Why Geospatial ML?
2. How can Amazon SageMaker help?
3. Live Demo on Emergency Disaster Response
4. Q&A

# What is Geospatial Data?

## Aerial and satellite imagery



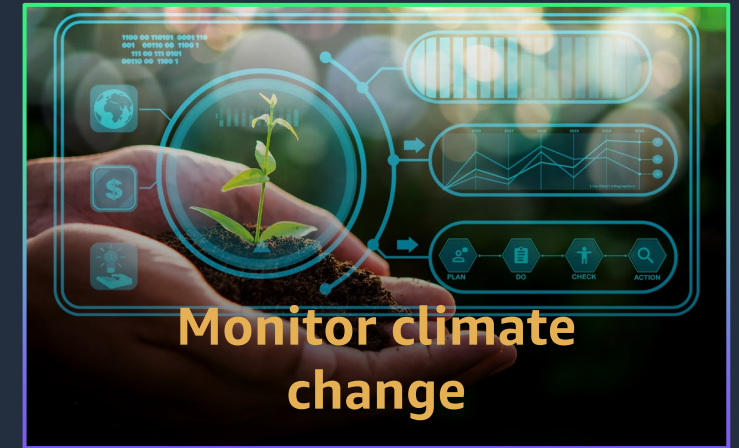
## Mapping data



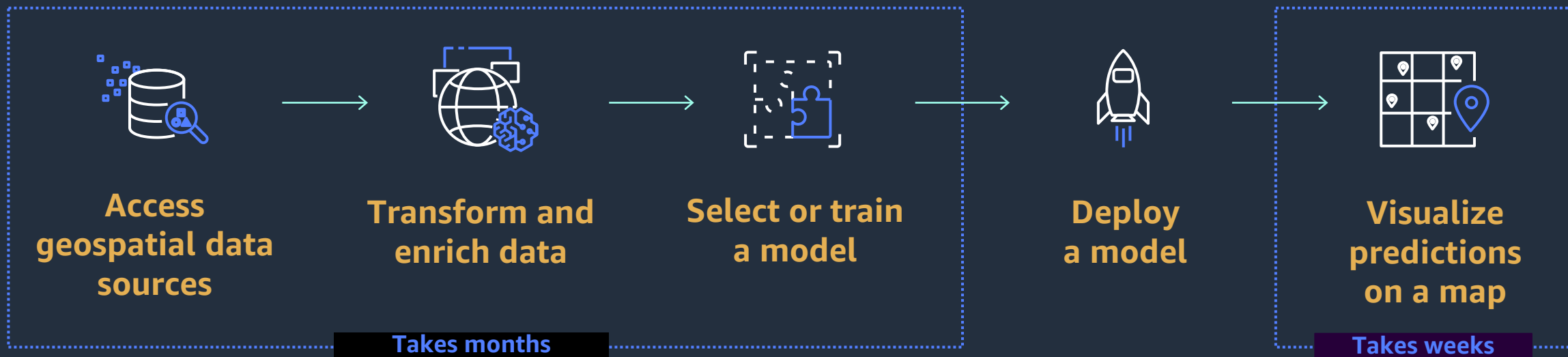
Road mask  
(color as speed)



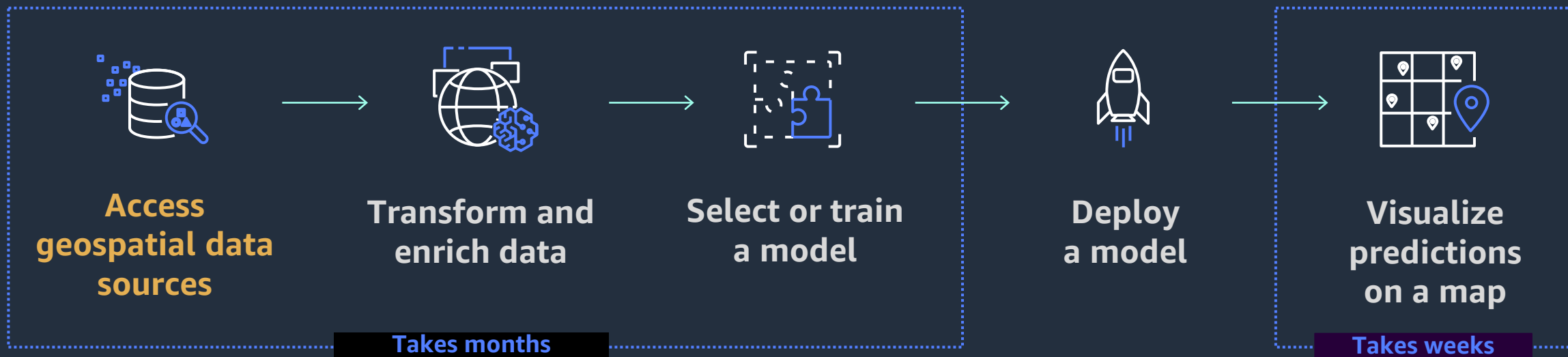
# Unlocking New Geospatial ML Use Cases



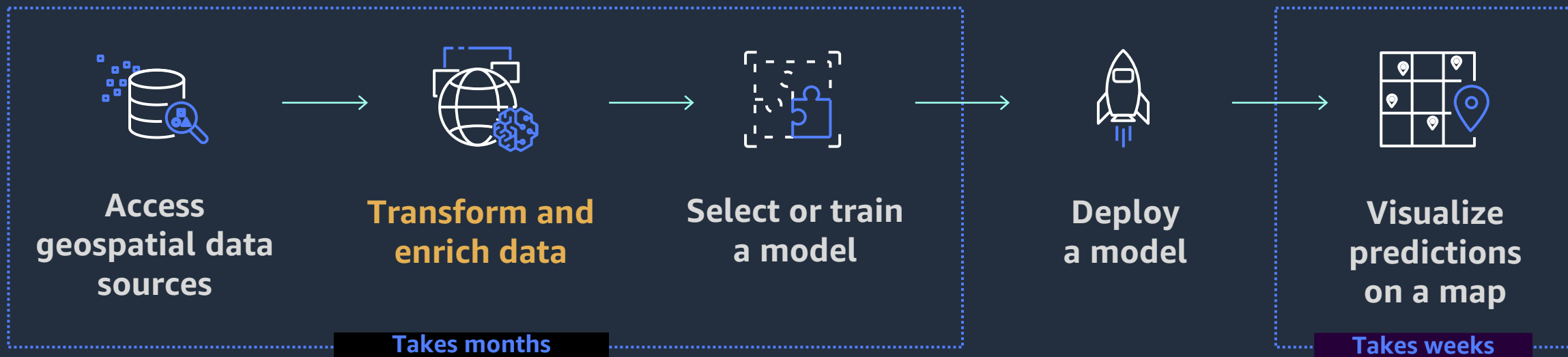
# How Geospatial ML Works



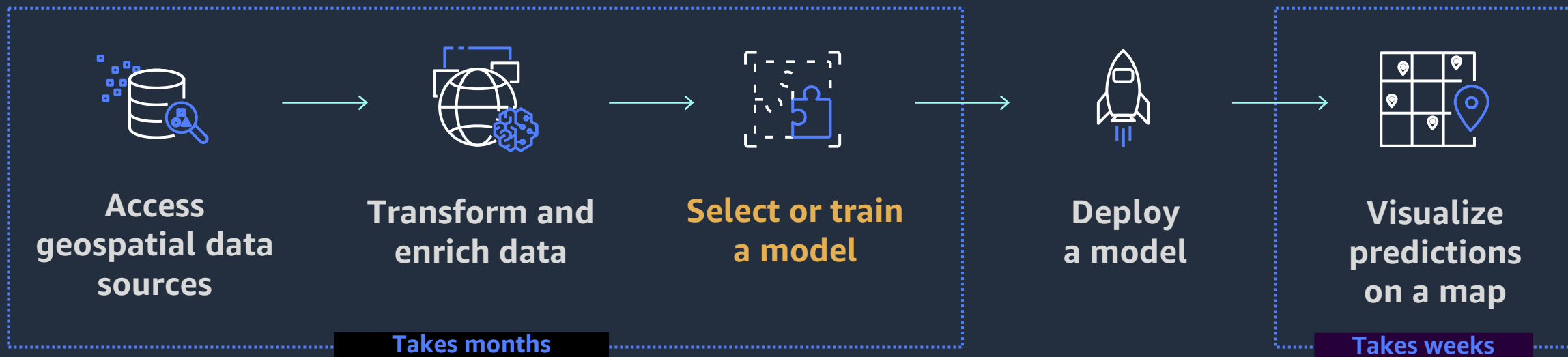
# How Geospatial ML Works



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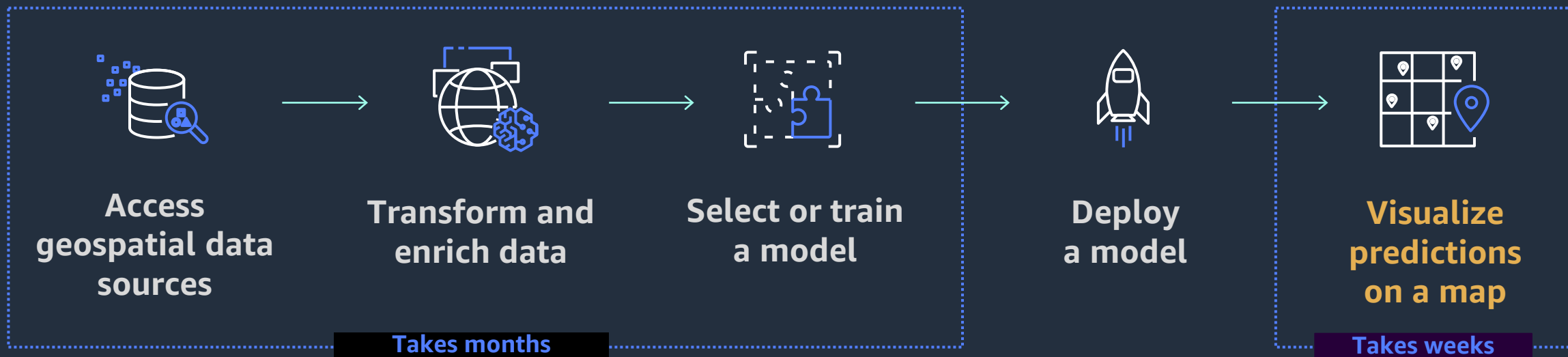


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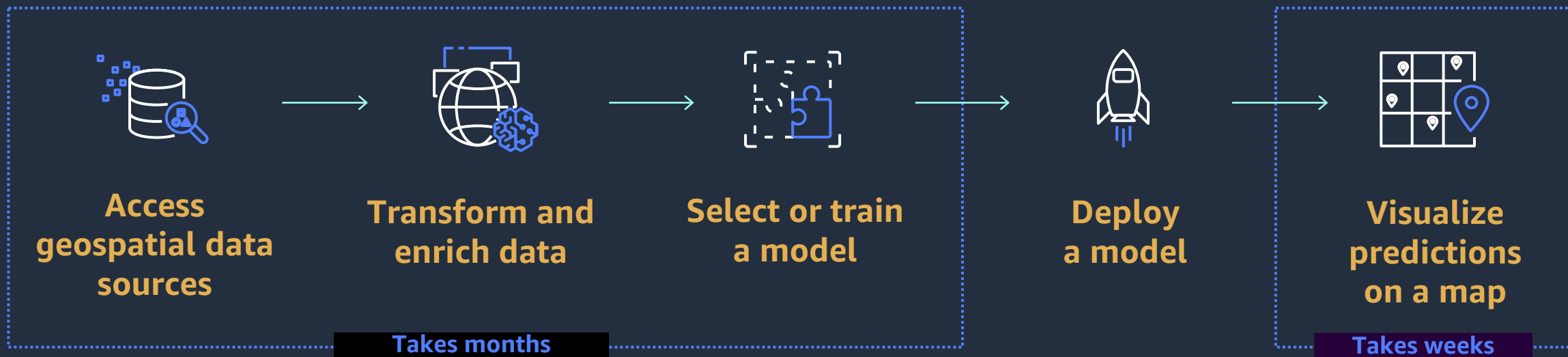




# How Geospatial ML Works



# How Geospatial ML Works



NEW

# 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

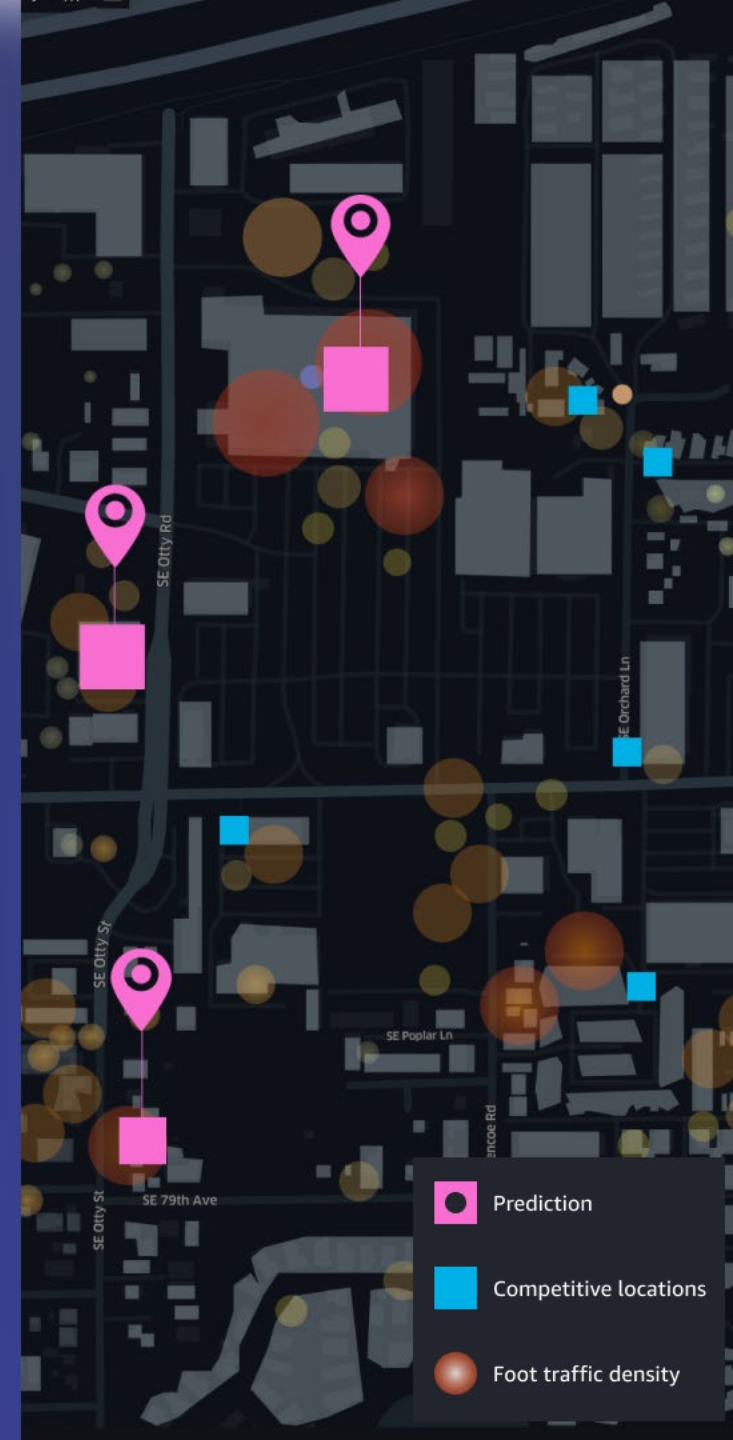
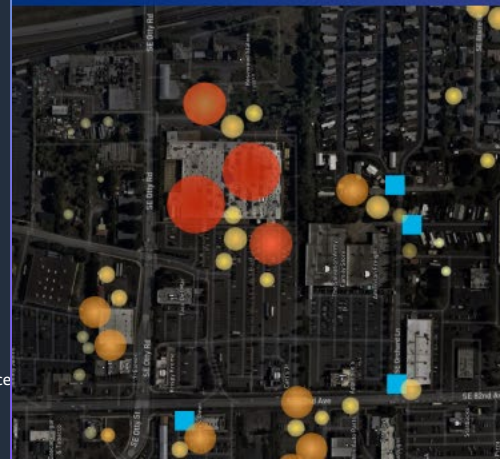
# Access Geospatial Data

1. Open Data on AWS, such as Landsat 8, Sentinel 2
2. Bring your own satellite imagery or mapping data
3. Make your data set accessible to everyone in your organization

The screenshot displays the Amazon SageMaker Studio interface for the Geospatial application. The main window is titled "Create an Earth Observation job" and is in "Step 2: Define input data". The instructions state: "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." The map shows a blue polygon defining an Area of Interest (AoI) over the Pacific Northwest region, covering parts of Washington (WASH.), Oregon (ORE), Idaho (IDAHO), Montana (MONT.), and Wyoming (WYO.). A search bar above the map contains the text "Edmonton" and a green box indicates "72 images found". A sidebar on the right contains various filters and controls. An inset window at the bottom left shows a detailed satellite image of a mountainous region with a river valley.

# Transform & Enrich

1. Standardized environment with easily available open-source libraires
2. Process with purpose-built earth observation jobs
3. Enrich map data with vector enrichment jobs



# Select or Train a Model

1. Use state of the art pre-trained models
2. Create high-quality labels for geospatial datasets
3. Bring your own model or container



# Visualize Predictions

1. Analyze and explore predictions on a map with 3D accelerated graphics
2. Visualization scales to render millions of points in the browser
3. Share predictions and map data across teams









# Predict dangerous road conditions due to rising water levels

# Get Started Today





# Thank you!

Amit Modi

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