

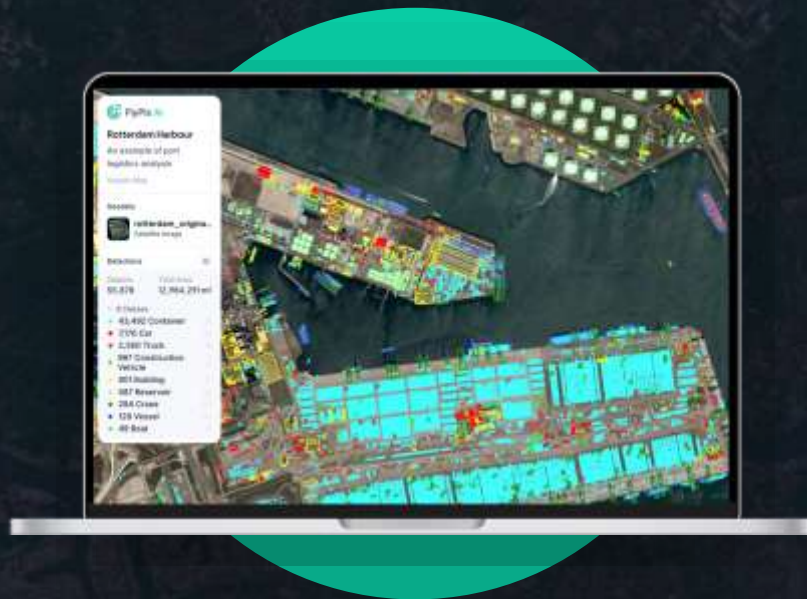


# From Pixels to Meaning



GeoAI in Action: Transforming Environment, Climate & Multi-Sector Analytics

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**We have massive geospatial data, we can now  
build reliable and transferable AI**



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**Data ≠ AI**



**We have massive geospatial data + ways to provide human input, we can now build reliable and transferable AI**



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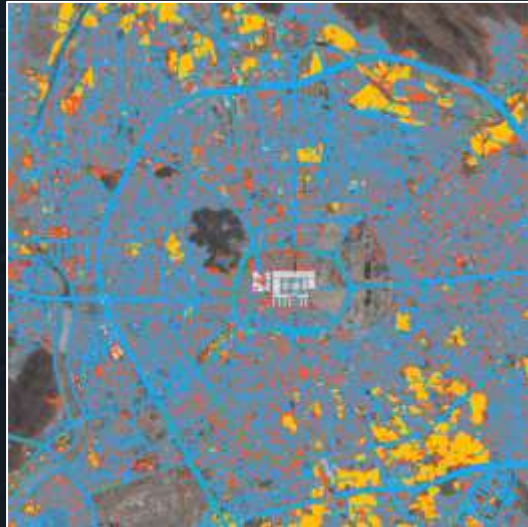
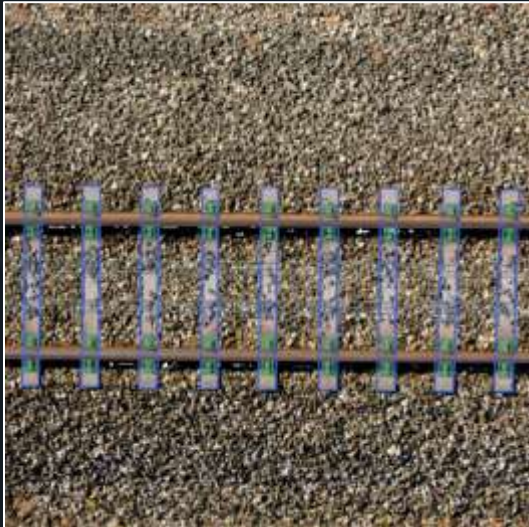
**AI ≠ meaning**



# GeoAI: The Core Problem

What does it mean to “understand” the Earth?

- Satellite/drone/aerial sensors don't see objects/events
- They measure physical signals
- We want: “missing bolts”, “urban growth”, “any change in military equipment”



**There is a gap between physical measurements and human concepts**



# How do we solve it

Signal

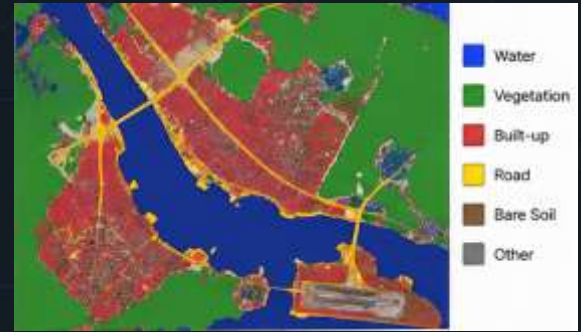
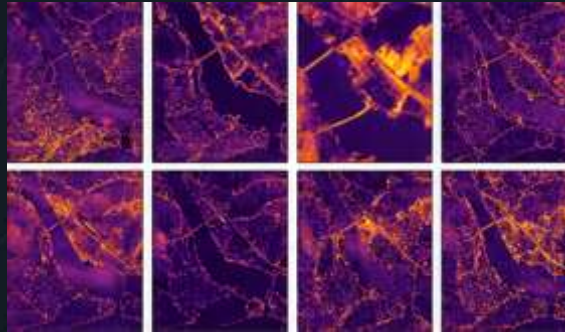
Representation

Semantics

What is measured?

What patterns exist?

What is detected?



# Semantics

is what the model sees, model outputs (“water”, “building”)



**Context** turns semantics into meaning

# Same data, different meaning

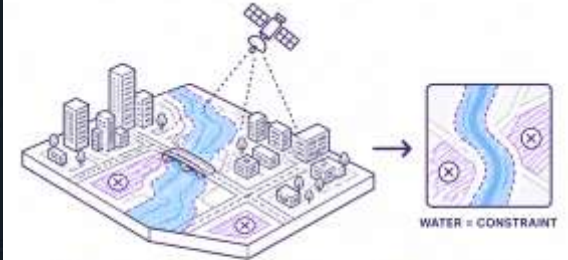
Meaning depends on context



Flood mapping



Agriculture



Urban planning

Signal → Representation → Semantics + Context → **Meaning**

 **Semantics as a Service**

Context-aware

 **Backbone AI**

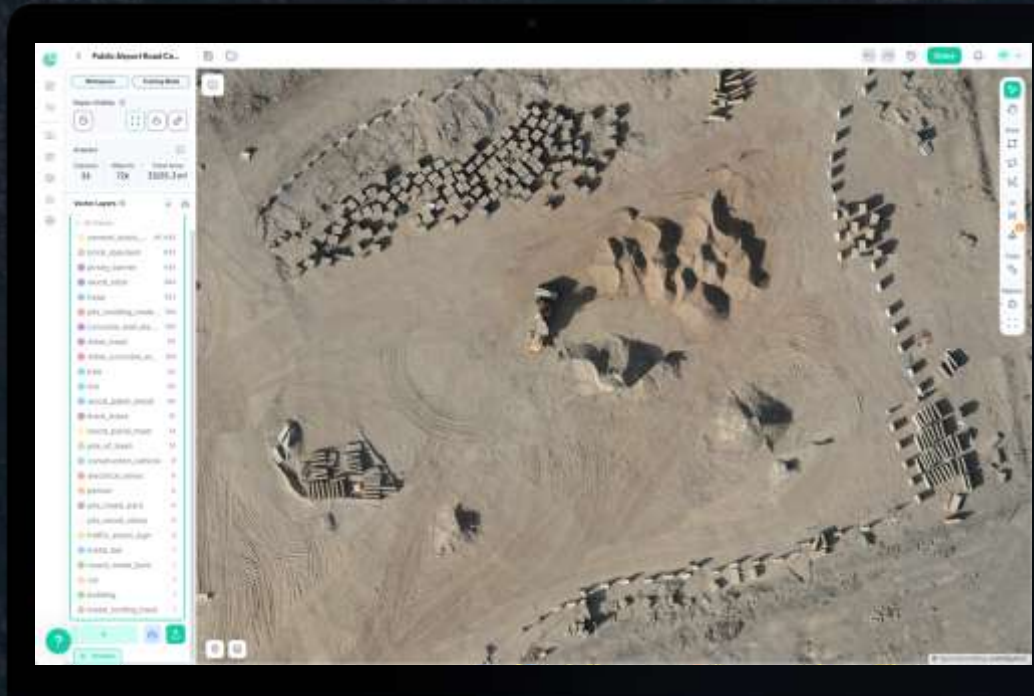
Trained on unique dataset: **millions of images** and **domain expert inputs**

 **End User Friendly**

No GeoSpatial or AI expertise required

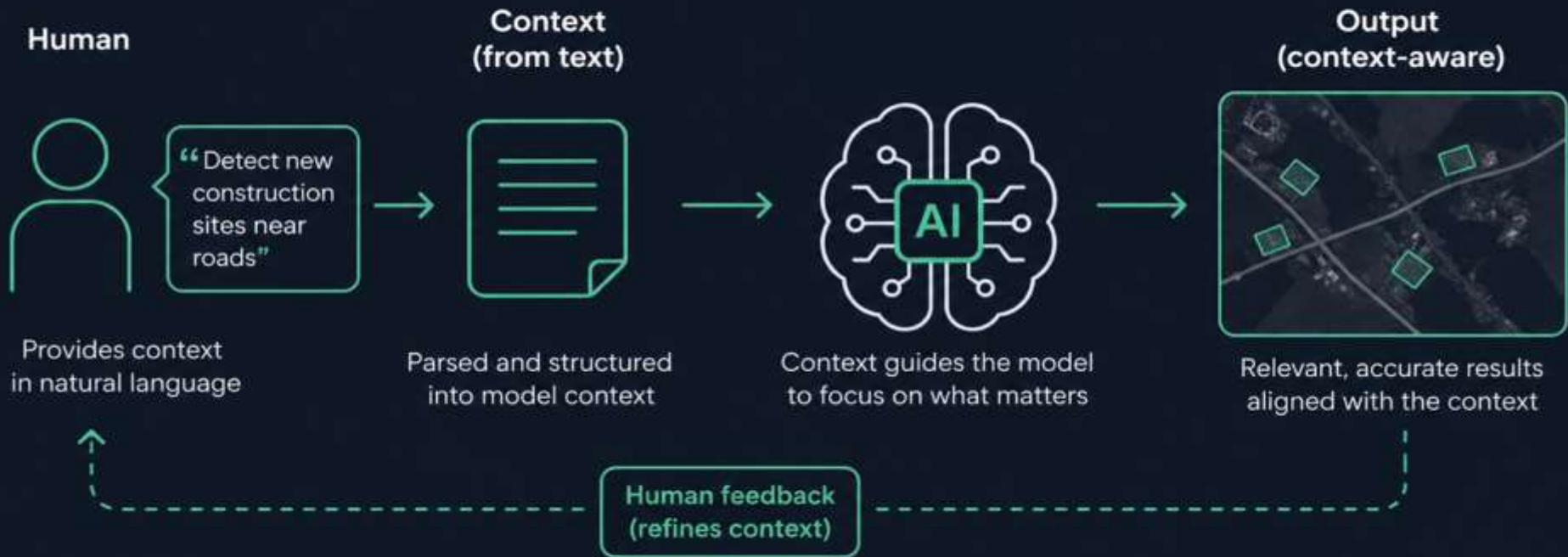
 **What users get**

Monitor, detect, inspect, predict





# The most natural way to incorporate context is ... **text**





# FlyPix AI - Context-aware Semantics

Provide context to your semantics and build workflows

The screenshot displays the FlyPix AI interface for a 'Railway' project. The main view is an aerial photograph of a railway track with semantic overlays. The left sidebar contains a 'Vector Layers' panel with a table of classes:

Class	Count
bolt	144
clip	72
railway_sleeper	18
rail	2

An 'Agent Chat' window is open in the foreground, showing a conversation:

Unnamed Session

Active Layer: Default (144 bolts, 72 clips, 18 sleepers, 2 rails)

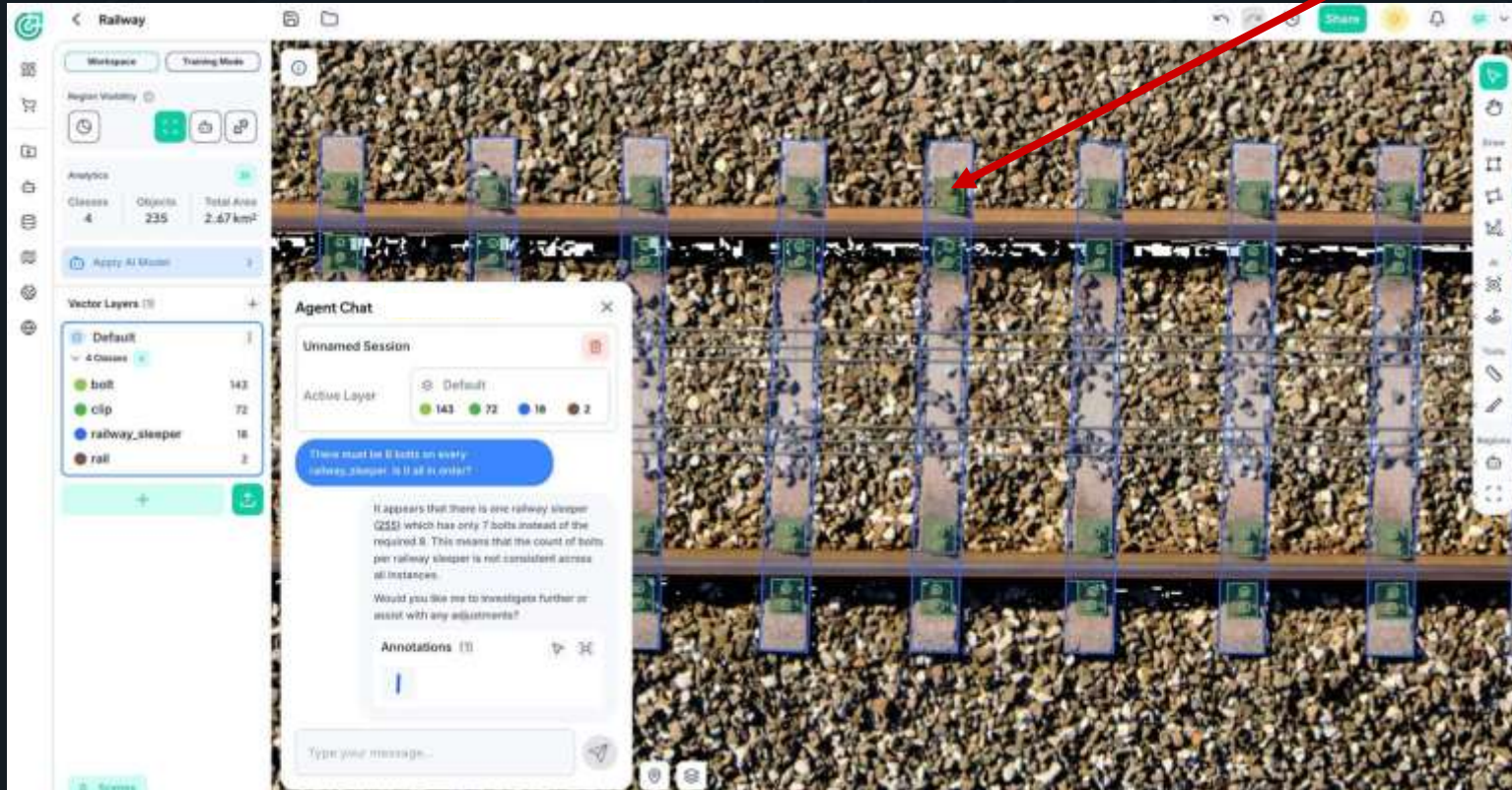
There must be 8 bolts on every railway\_sleeper. Are there any others too?

No railway sleepers with fewer than 8 bolts were found. This indicates that every railway sleeper has at least 8 bolts associated with it. If you have any further questions or need additional checks, feel free to ask!

Type your message...

# FlyPix AI - Context-aware Semantics

Provide context to your semantics and build workflows





# FlyPix AI - Context-aware Semantics

Provide context to your semantics and build workflows

The screenshot displays the FlyPix AI interface for a project named "Public Airport Road Co...". The main view is an aerial satellite image of a construction site, heavily annotated with yellow bounding boxes representing identified debris. A blue construction vehicle is visible on the right side of the image.

On the left side, there is a sidebar with various controls and a "Vector Layers" list. The "Vector Layers" list shows the following items:

- Construction (26 Classes)
- cement\_block\_... (99,445)
- brick\_standard (503)
- jersey\_barrier (435)
- wood\_stick (184)
- heap (323)
- pile\_building\_mat... (183)
- concrete\_wall\_ele... (180)
- other\_trash (119)
- other\_concrete\_el... (104)
- tree (42)
- tire (30)
- wood\_pallet\_stand (20)
- brick\_holes (15)
- wood\_panel\_trash (14)
- pile\_of\_trash (10)
- construction\_vehicle (8)
- wires (8)

An "Agent Chat" window is open in the foreground, showing a conversation:

**Agent Chat**

Unnamed Session

Active Layer: Construction

Layer: 69445 (99445), 503 (503), 435 (435), 1536 (1536)

**is the area free from debris?**

The area contains debris, with a total of 70,195 debris-related objects identified. These include items such as heaps, tires, trash piles, and other debris types. If you need further details or assistance, feel free to ask!

Type your message...



# FlyPix AI - Context-aware Semantics

Provide context to your semantics and build workflows

The screenshot displays the FlyPix AI interface for a project titled "Railway vegetation ma...". The main map shows an aerial view with several semantic classes overlaid: "forest\_rail" (green), "trees\_on\_rail" (red), and "rail\_line" (blue). The "Agent Chat" window is open, showing a query: "Is there vegetation next to the train line?". The response states: "Yes, there is vegetation, specifically trees, located near the train lines. The query identified several trees (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11) that are in close proximity to a rail line (1). This indicates that vegetation exists next to the train line." Below the chat, there are 10 annotations, each represented by a small green icon. A "10 Annotations" panel is also visible, showing the class "trees\_on\_rail" with a total area of 598 m² and an average confidence of 100.0%.

**Workspace** | Training Mode

Region Visibility

Analysis

Classes	Objects	Total Area
3	175	13500 m²

Apply AI Model

Vector Layers (1)

- forest\_rail
  - 3 Classes
  - Trees: 154
  - trees\_on\_rail: 20
  - Rail\_line: 1

**Agent Chat**

Unnamed Session

Active Layer: forest\_rail (154, 20, 1)

Is there vegetation next to the train line?

Yes, there is vegetation, specifically trees, located near the train lines. The query identified several trees (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11) that are in close proximity to a rail line (1). This indicates that vegetation exists next to the train line.

Annotations (11)

Type your message...

**10 Annotations**

Class: trees\_on\_rail

Merge | Simplify

Total Area: 598 m²  
Avg. Confidence: 100.0%  
Centroid: 55.29°N, 5.91°E



# FlyPix AI Enables Both Head & Long Tail

Head - primarily served to/accessible by

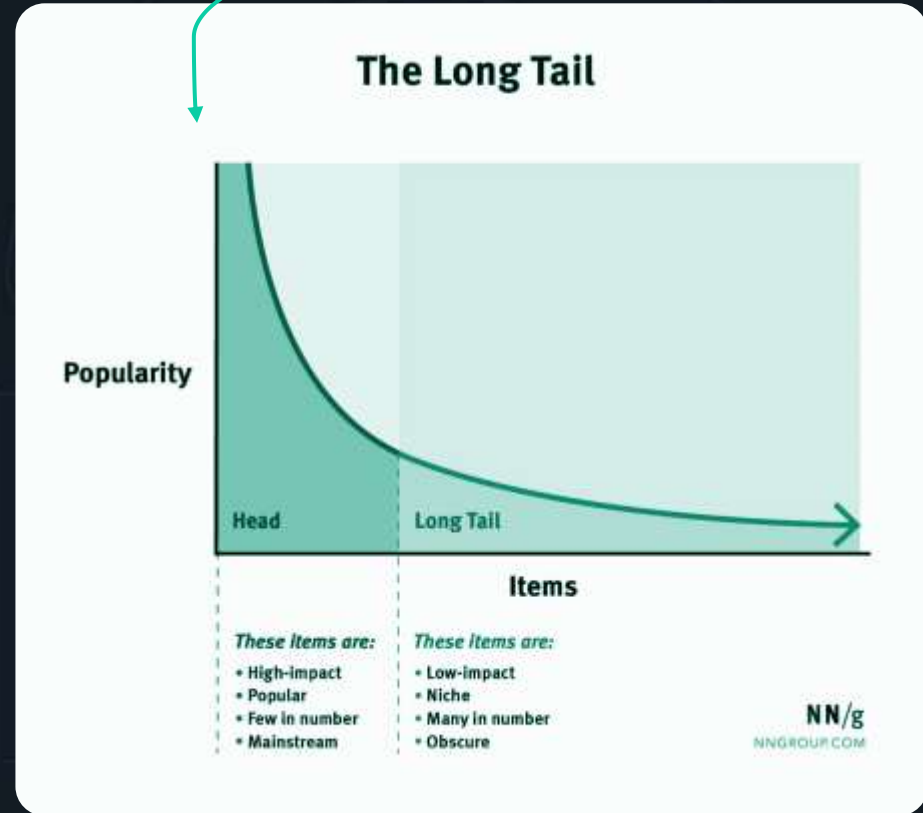
1. Large organizations
2. Institutional users

## Long Tail

1. Niche use cases
2. Low impact
3. Require significant customization

accounts for 65% of all use cases

Defense, insurance, government





# Our Customer Segments



**Inspection & Asset Management**

60%

**Insurance**

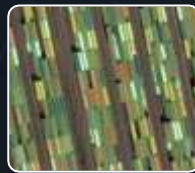
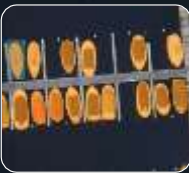
20%

**Agritech**

5%

**Sustainability**

5%



- Many micro-customers/users
- Every request is unique (AI provides flexibility)



**We have massive geospatial data + ways to provide human input and context, we can now build reliable and transferable AI**

Try online



[www.flypix.ai](http://www.flypix.ai)

Visit booth 29 to see the platform and try it out



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