kadaster

GeoAI Kadaster

Tony Beving
26-11-2026

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Geo Expertise Center

- Team of 16 people
- ERM/ECRM
- Image recognition

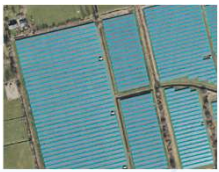


2

Image recognition

- Aerial imagery
  - 8 cm winter (Ortho and True Ortho)
  - 25 cm summer (Ortho)
- Features
  - Storage tanks (topographic map)
  - Greenhouses (topographic map)
  - Solar panels (energy regions)
  - Solar farms (energy regions)



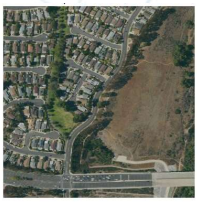
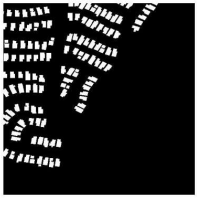




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Image recognition

- Object detection
  - Yolo
- Pixel-level classification
  - Ternausnet
  - U-net MIT-B2
- Finetuning
- Postprocessing



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Image recognition

- **Satellite imagery**
  - Buildings, road and water (MUVD)
  - Construction sites
- **Satellite dataportal**
  - Satellite data of the Netherlands
  - 6 times per year

09-06-2024



29-06-2024



28-08-2024



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Image recognition

- **Panorama images**
  - parking garage entrances (CBS)
  - town entry signs









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Town entry signs

- Town entry signs are detected across multiple panorama images
- Determine the actual location of each sign
- Next steps
  - Determine the orientation of each sign,
  - Use OCR to extract the town name from each sign



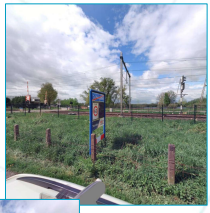


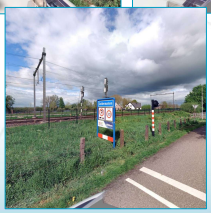
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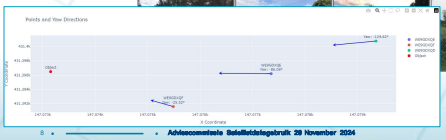
Image Recognition











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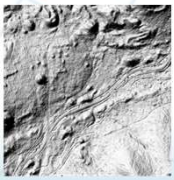
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Image recognition

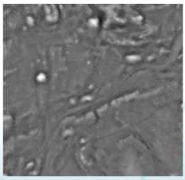
- Elevation data/pointclouds (AHN)
  - Forest trails
- Visualisations
  - Hillshade
  - Local relief model



Hillshade (VE6)



Local Relief Model (LRM)



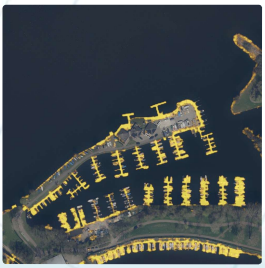
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TITAAN

- Foundation model of Waterschapshuis (The Dutch Water Authorities)
  - 8 cm aerial imagery
  - AHN
  - Satellite data
- 1 model, multiple purposes



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Detect once, use across multiple registrations

- Current process is inefficient
- The goal is a scalable and reusable approach
- In collaboration with
  - BZK (Ministry of the Interior and Kingdom Relations)
- Source holders
- (municipalities, provinces)

Three approaches

- Using our existing AI models
- Using TITAAN (collaboration Waterschapshuis)
- Generated map (collaboration University of Twente)



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Questions?

Contact:

Geo Expertise Team

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