See your business differently.

SPRINT Showcase
Chris Nix
VISUAL INTELLIGENCE
MAKE BETTER BUSINESS DECISIONS

Drones, Satellites, Aerial and Social Media + Geospatial & Machine Learning Expertise = ACTIONABLE BUSINESS Insights
CATASTROPHIES

- What happened?
- What will it cost?
- How to respond?
- What resources should be deployed?
COMMODITIES

- Monitoring global oil reserves by satellite
- Monitoring US oil reserves by drone
- Early insight for traders

#WeKnow
RETAIL

- Daily monitoring of retail locations around Europe
- Machine learning to count cars
- Insight for analysts and investors
Geospatial Insight have embraced machine learning for automating the generation of intelligence, and have successfully applied it to geospatial challenges including:

- Car detection and counting
- Building and roof detection
- Roof type classification
- Building height determination

(fortuitous stereo)

**BUILDINGS**

- Automated extraction of building features from satellite images
- Currently extracting building area, height, roof shape and roof material
BUILDINGS

- Automated building damage assessment
- Insight to insurers following natural disasters

TOTAL LOSS OF 453 PROPERTIES

PARTIAL LOSS OF 367 PROPERTIES

#WeKnow
SPRINT

- University of Leicester (Hartmut Boesch, Rocio Barrio Guillio, Robert Parker)
- Ability to use WorldView-3 to make site-specific observations of methane leakage
- Low cost global monitoring from existing satellites
THE PROBLEM

- Large global natural gas infrastructure
- Site leaks from tanks and pipes etc
- Detection by remote sensing
THE PROBLEM

- Methane absorption spectrum has narrow bands
- But... requires detection amongst ground reflected solar radiation
- Hindered by surface albedo
SATCHELITES

- Tropomi
- GHGSat
- GOSAT-2
- MethaneSAT
- WorldView-3
AERIAL - AVIRIS

- Operated by NASA
- High resolution hyperspectral sensor
- Available benchmark methane detection dataset curated by domain experts
DETECTION

- Methane can be detected from the spectral information within the hyperspectral image alone.
DETECTION

- Simulate the multispectral bands of WorldView-3 from the AVIRIS-NG hyperspectral image
- Perform the same processing
PHASE 2?

- Can we automate the processing?
- Can we use real WorldView-3 images for a known emission site?
THANK YOU