



Example of Explainable AI
for Copernicus data:

Multivariate analysis gives better utilization of satellite InSAR data

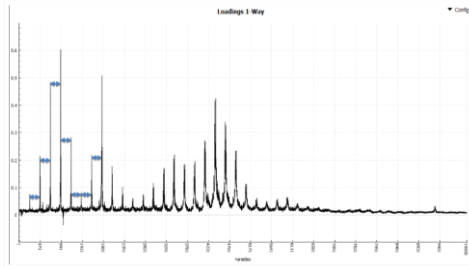
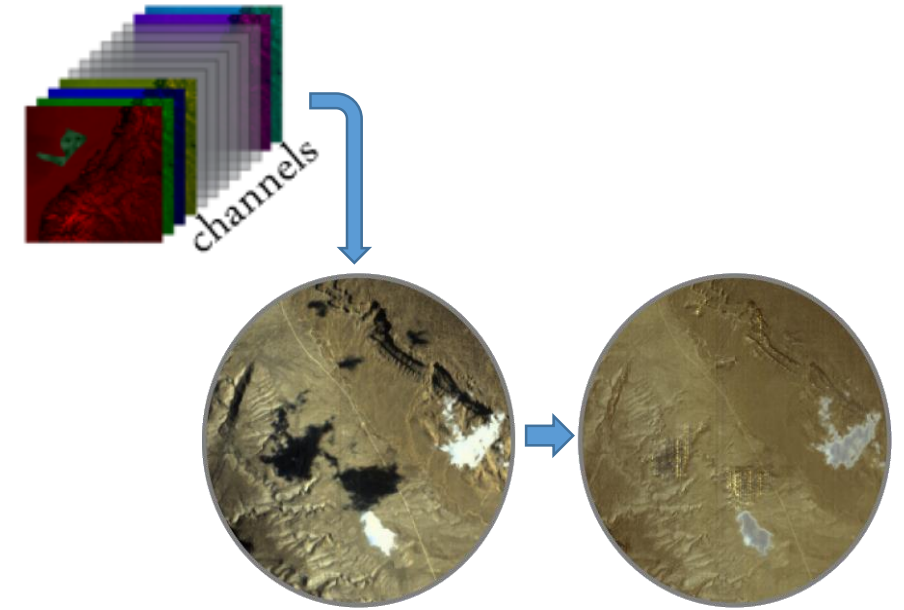
Harald Martens and Ping Zhao

Idletechs AS

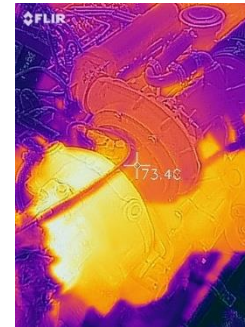
Types of Data for IDLE modelling

$$I = D(L) + E$$

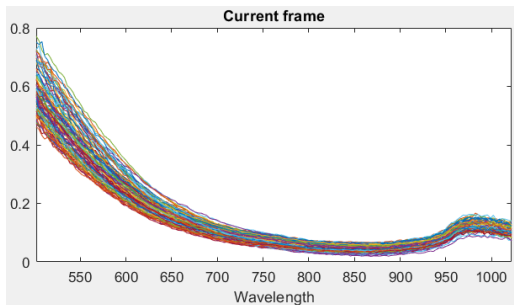
Intensity measured = **D**isplacement structure(**L**ocal structure) + **E**rror



Vibration Data Streams



RGB & Thermal Data Streams

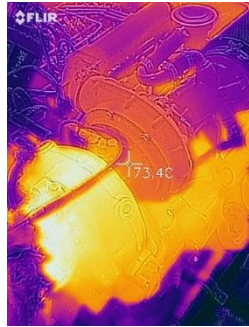


Spectral Data Streams

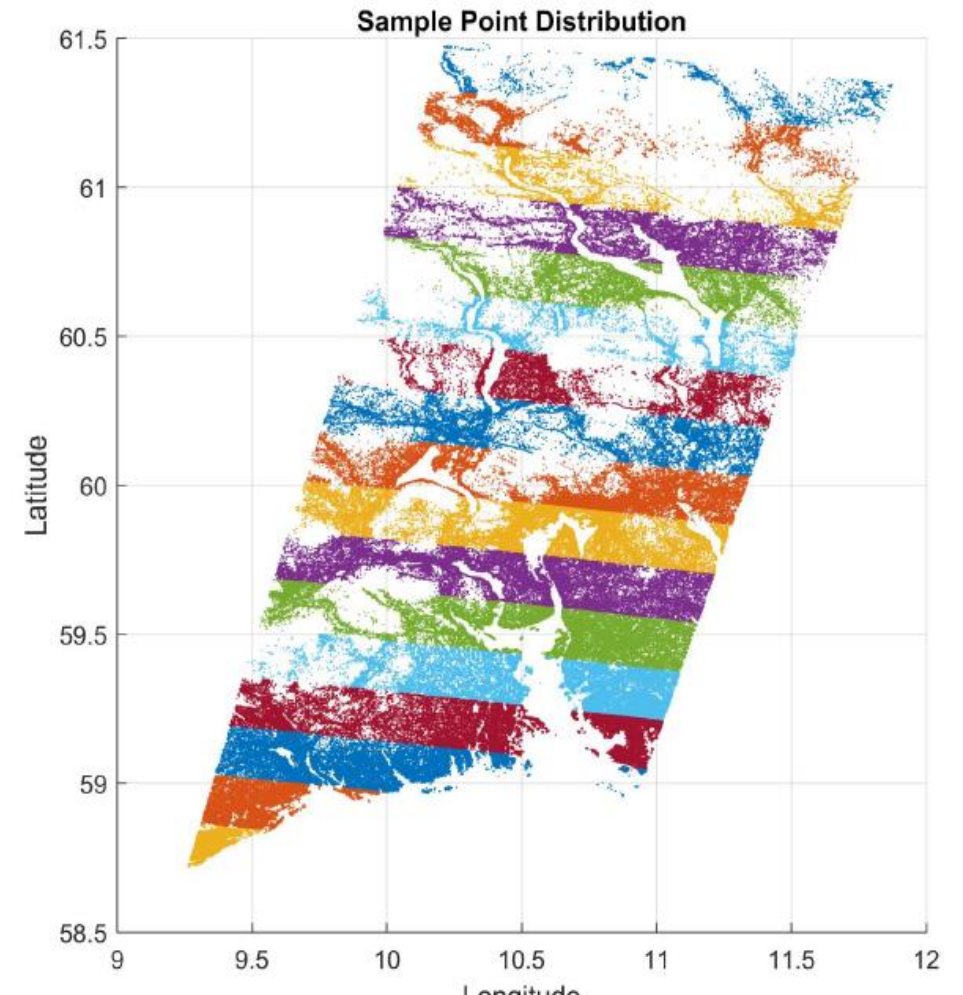
Many more types of data:

- Medical imaging data streams
- Sound data streams
- Computer simulation data streams
- Logistic & Trading data streams
- ...

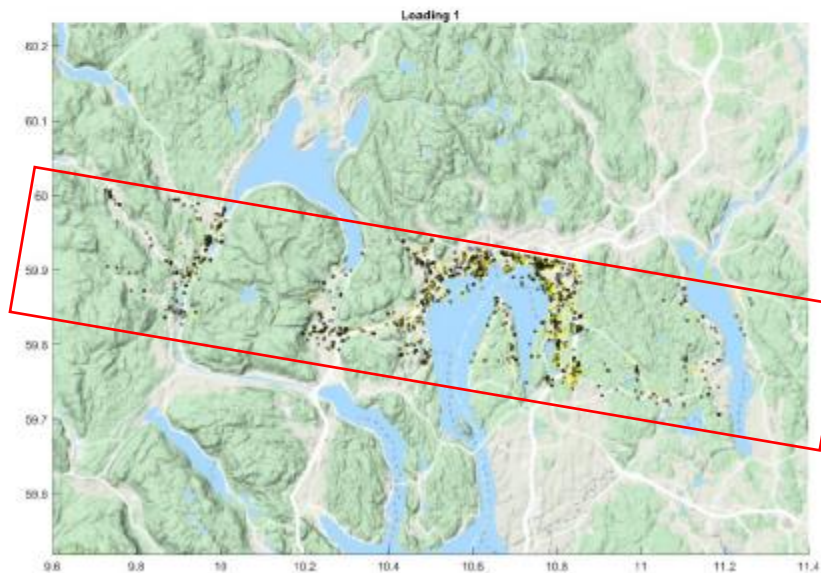
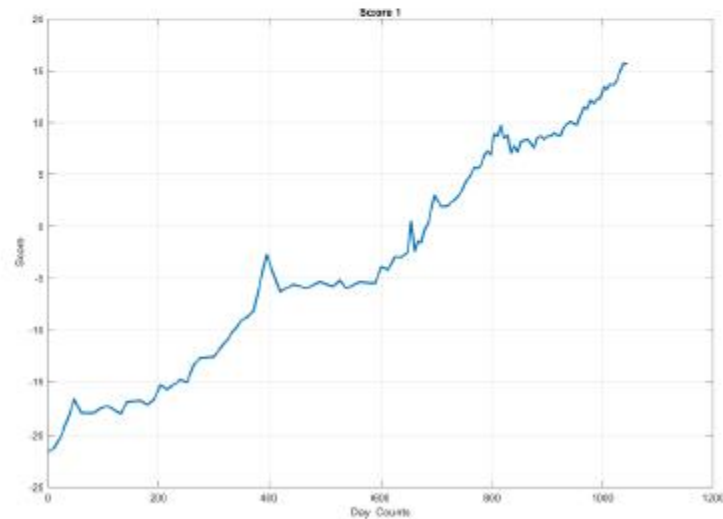
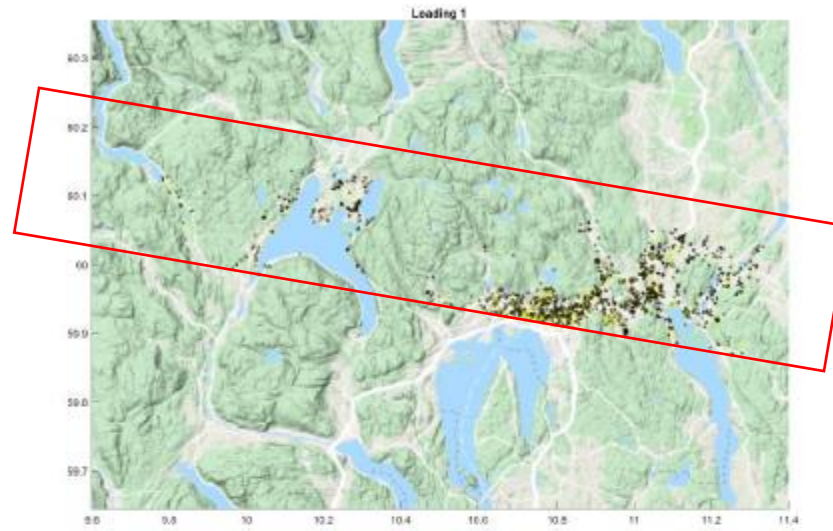
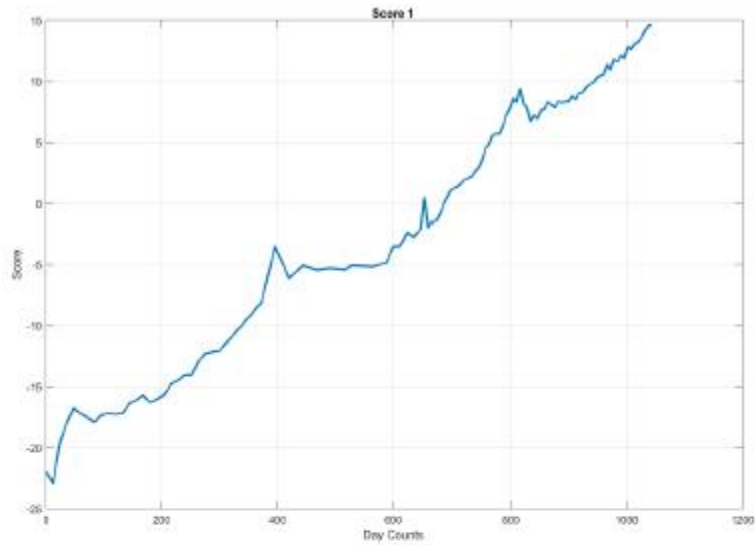
Use Idletechs' Big Data Cybernetics software for «global» analysis of patterns in InSAR data?



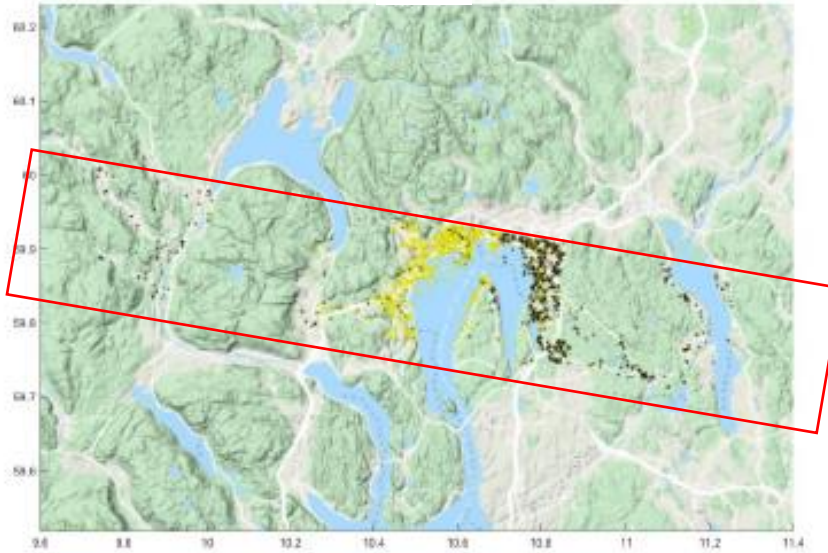
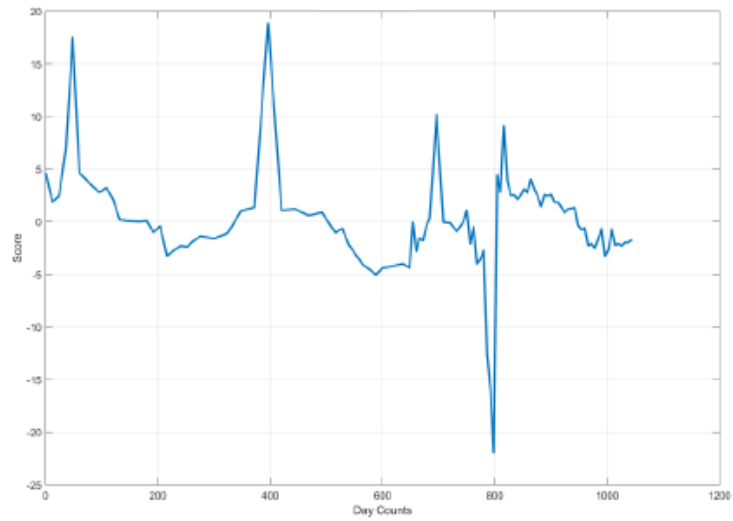
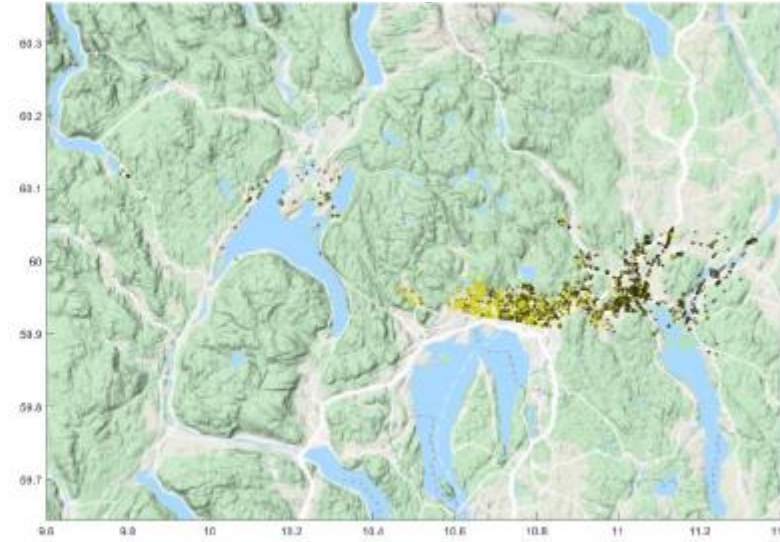
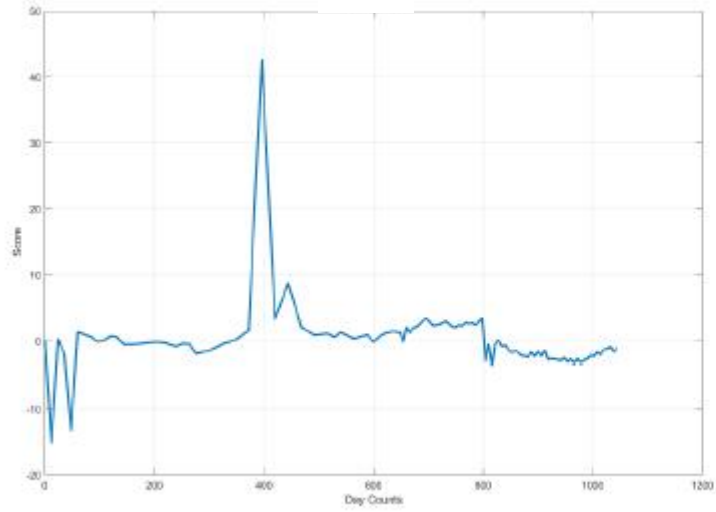
Idea: Jan Otto Reberg
Analyses: Ping Zhao

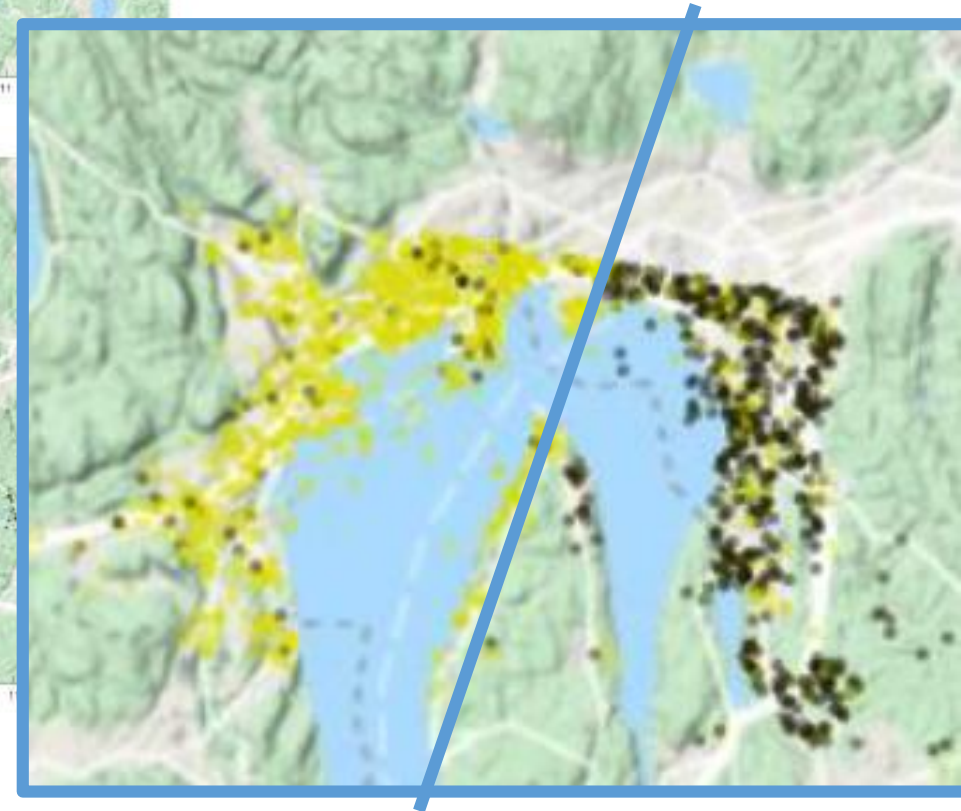
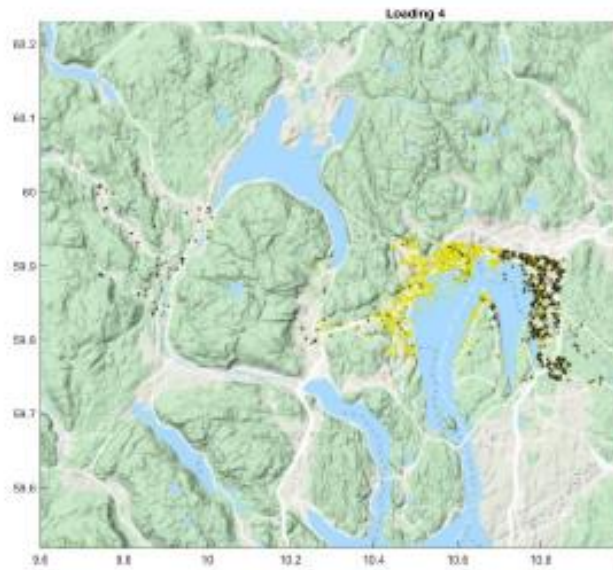
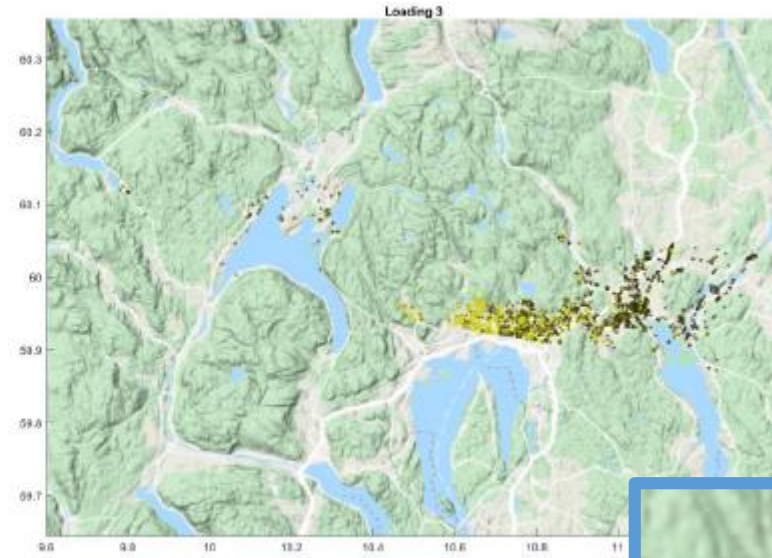
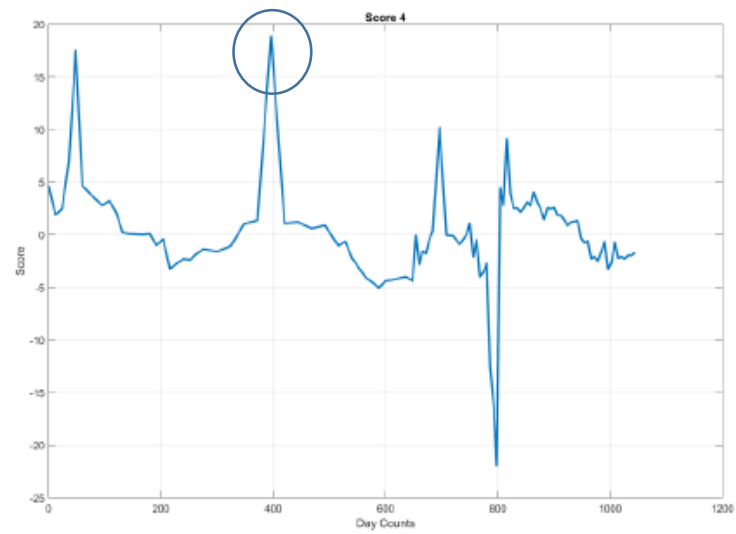
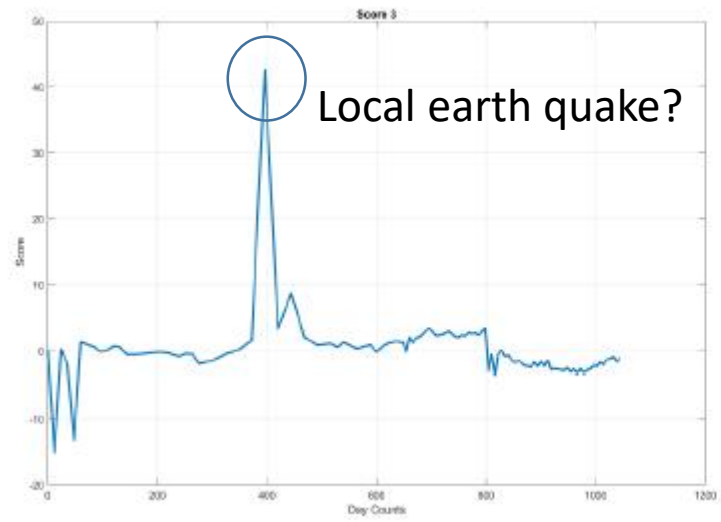


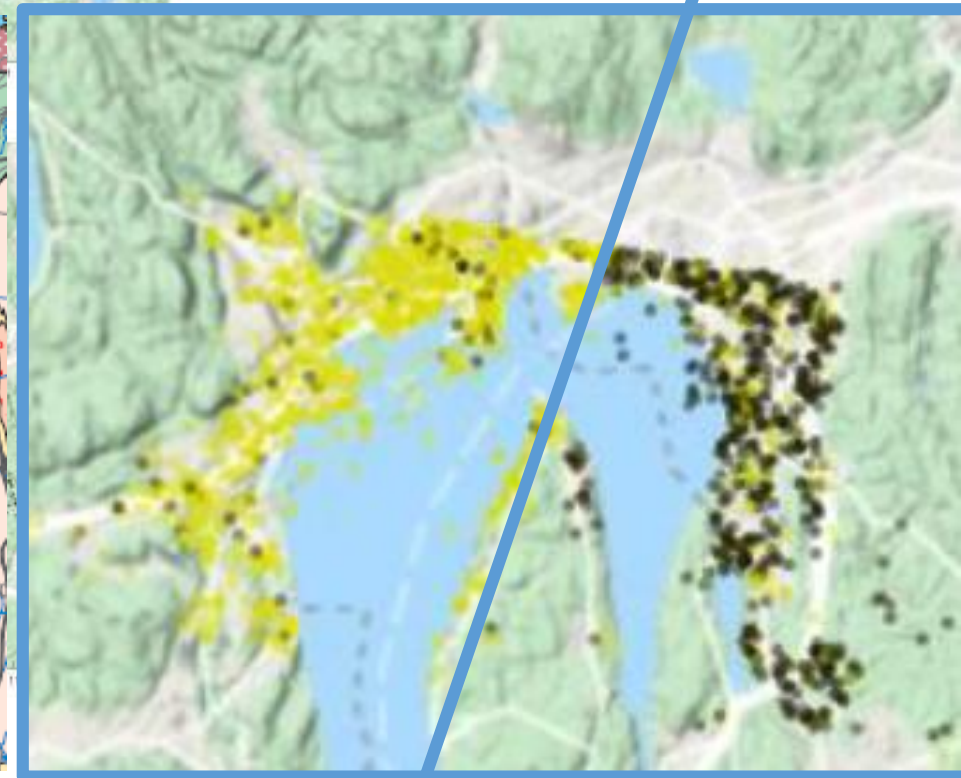
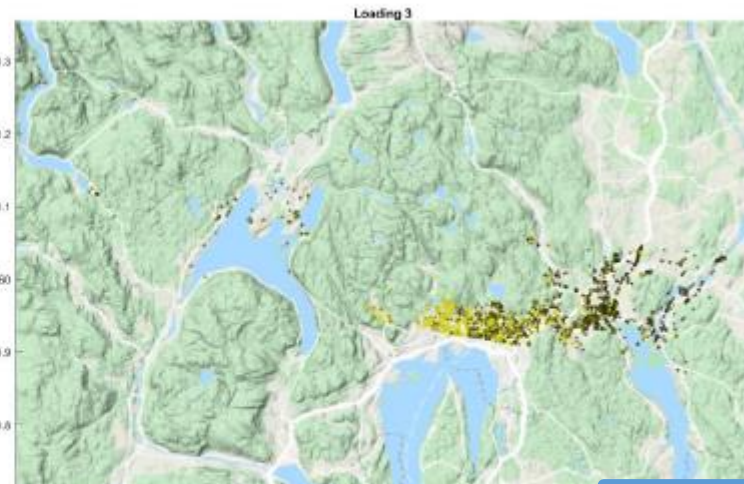
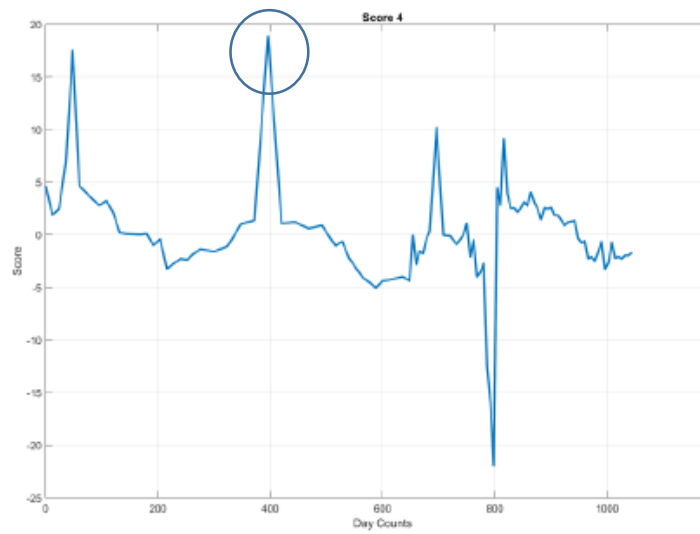
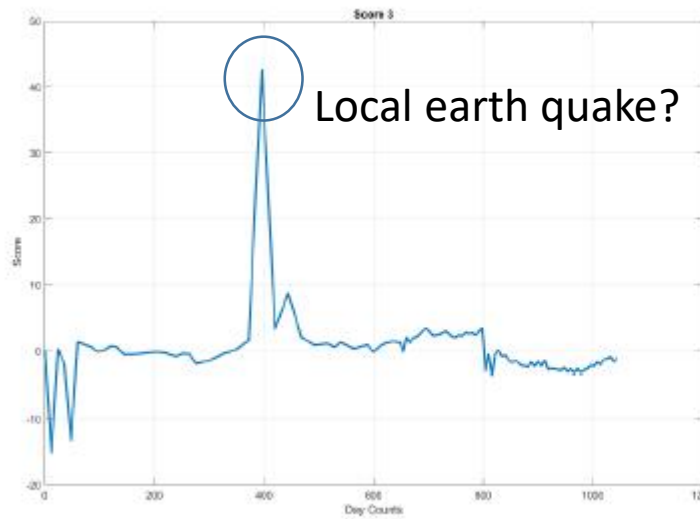
Pattern # 1 found



Pattern # 4 found







≈ Geological fault line ?

Big Data streams from satellites:

- Find the essence in the data and compress the data at the same time
- Combine data-driven and knowledge-driven modelling
- Keep people in the loop, make good people better:
 - Generic Explainable AI
 - Fast («Big Data on a Lap Top»)
 - Specific domain knowledge employed
 - Quantitative discovery tool
 - Simple to use