



Visualization Methods

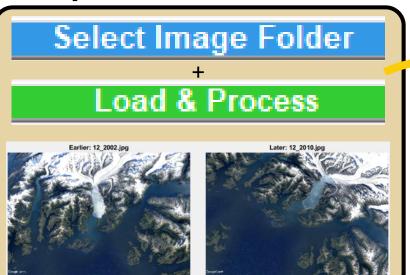
) Side-by-Side Overlay

COMPARE SATELLITE IMAGES OVER time to track climate warming





Pipeline and results

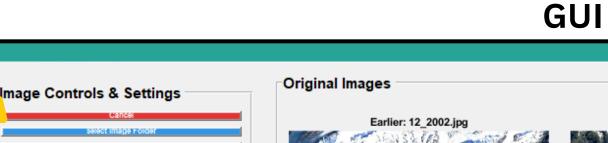




Align Images

Detect Changes

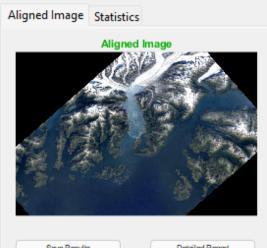






Detailed Analysis & Comparisons





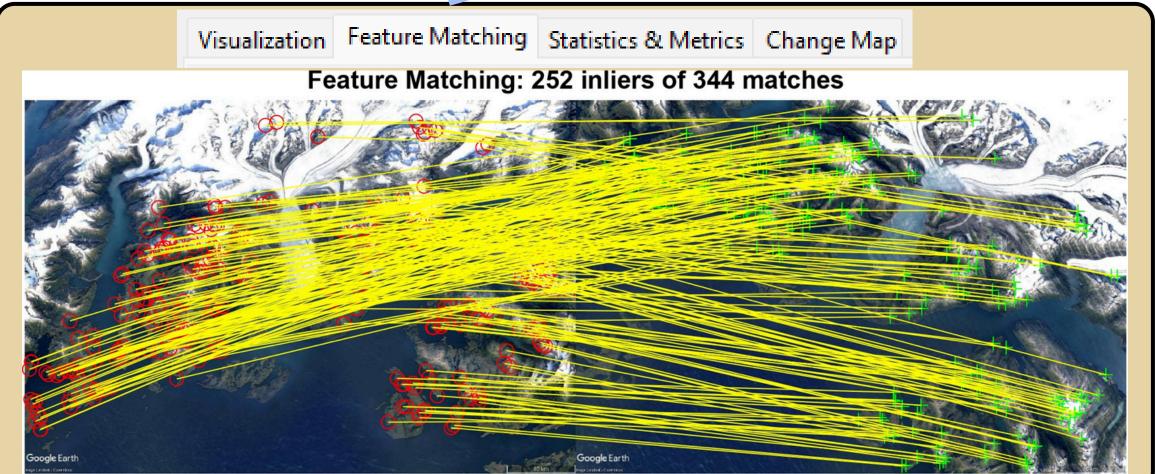
Results

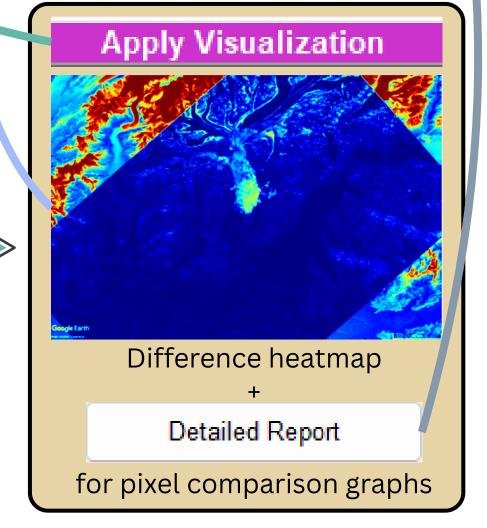
Visualization | Feature Matching | Statistics & Metrics | Change Map

Features









Methods

- 1. Image preprocessing: median filter (optional)
- 2. **Alignment**: SURF, feature matching, RANSAC, imwarp
- 3. Change detection: pixel difference, Gaussian filter (optional), thresholding
- 4. Focus: geometric changes or structural changes

Problems

- Robustness of the image alignment, especially for images with low texture, strong brightness differences, or complex transformations
- → Solution: The parameters of the estimateGeometricTransform2D algorithm were adjusted:
- MaxNumTrials (maximum number of RANSAC trials) was increased from 1000 to 2000
- MaxDistance (maximum distance for inlier points) was increased from 1.5 to 3
- (a picture of a problem here would be better)

References