# Deep Learning Inspired Change Detection Report

## Executive Summary

The Deep Learning Inspired method processed satellite imagery and detected 202,165 pixels of change across 208 distinct regions, representing 23.14% of the total image area. Processing completed in 0.313 seconds. The average confidence score for detected changes was 0.440.

## Method Description

This method incorporates deep learning-inspired techniques including feature extraction using convolutional operations, multi-level analysis, and confidence scoring. It applies learned patterns and statistical modeling to identify changes while providing confidence estimates for each detection. The approach balances computational efficiency with the sophisticated pattern recognition capabilities inspired by neural network architectures.

## Results Summary

| Metric | Value |
|---|---|
| Total Change Pixels | 202,165 |
| Number of Change Regions | 208 |
| Total Change Area | 202165.00 sq units |
| Processing Time | 0.313 seconds |
| Image Dimensions | 1024 x 853 |
| Average Confidence | 0.440 |

## Change Statistics

### Region Size Analysis:

- Largest region: 28,146 pixels
- Smallest region: 100 pixels
- Average region size: 887 pixels
- Median region size: 264 pixels

### Top 5 Largest Change Regions:

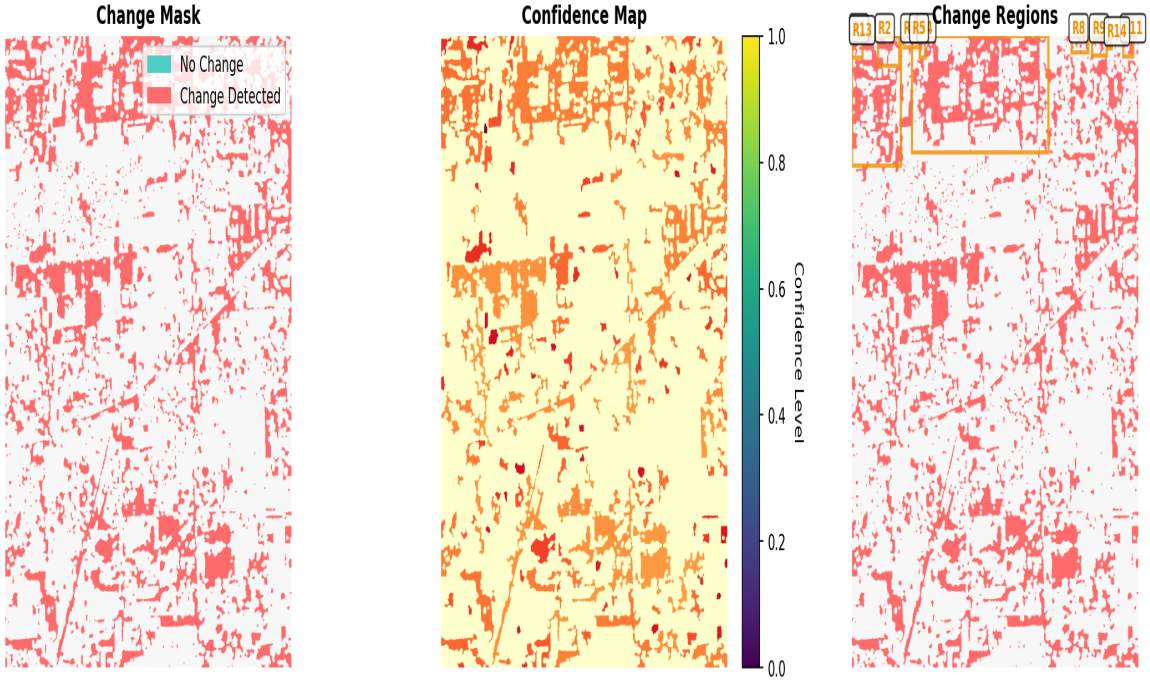
| Region ID | Area (pixels) | Confidence | Center (x, y) |
|---|---|---|---|
| 5 | 28,146 | 0.391 | (377, 78) |
| 349 | 14,862 | 0.356 | (192, 411) |
| 1 | 10,595 | 0.409 | (64, 103) |
| 191 | 8,701 | 0.383 | (738, 312) |
| 690 | 7,907 | 0.354 | (503, 822) |

## Technical Details

| Parameter | Value |
|---|---|
| Implementation | Deep Learning Inspired |
| Version | 1.0 |
| Timestamp | 2025-08-24 20:13:47 |
| Input Image 1 | lv2010.png |
| Input Image 2 | lv2022.png |
| normalization | histogram_equalization |
| filtering | bilateral |
| threshold_methods | ['otsu', 'percentile_95'] |
| morphology_kernels | [(3, 3), (7, 7)] |
| min_area | 100 |
| confidence_factors | ['intensity', 'shape_compactness'] |

## Visualizations

## Deep Learning Inspired - Change Detection Results




Report generated on 2025-08-24 20:13:49