

Change Detection Methods Comparison Report

Executive Summary

This report compares 3 change detection methods: Basic Computer Vision, Advanced Computer Vision, Deep Learning Inspired. The fastest method was Basic Computer Vision (2.450s), while Deep Learning Inspired detected the most changes (22,000 pixels). The overall agreement between methods is medium.

Methods Overview

Method	Change Pixels	Regions	Processing Time (s)	Avg Confidence
Basic Computer Vision	15,000	25	2.450	0.783
Advanced Computer Vision	18,500	32	4.120	0.777
Deep Learning Inspired	22,000	28	8.750	0.760

Performance Comparison

Method	Speed Rank	Change Detection Rank	Overall Score
Basic Computer Vision	#1	#3	2.0
Advanced Computer Vision	#2	#2	2.0
Deep Learning Inspired	#3	#1	2.0

Accuracy Comparison

Method	Precision	Recall	F1-Score	IoU
Basic Computer Vision	0.820	0.750	0.780	0.640
Advanced Computer Vision	0.880	0.810	0.840	0.720
Deep Learning Inspired	0.910	0.850	0.880	0.780

Inter-Method Agreement

Overall Agreement Metrics:

- Mean IoU: 0.680
- Mean Jaccard Similarity: 0.710
- Agreement Level: Medium

Consensus Analysis:

- Full Agreement: 72.5% of pixels
- Partial Agreement: 45,000 pixels
- Consensus Mean: 0.150

Recommendations

For fastest processing, use Basic Computer Vision. For maximum sensitivity, use Deep Learning Inspired. For best overall accuracy, use Deep Learning Inspired (F1-score: 0.880).

Comparison Visualizations

Change Detection Methods Comparison

