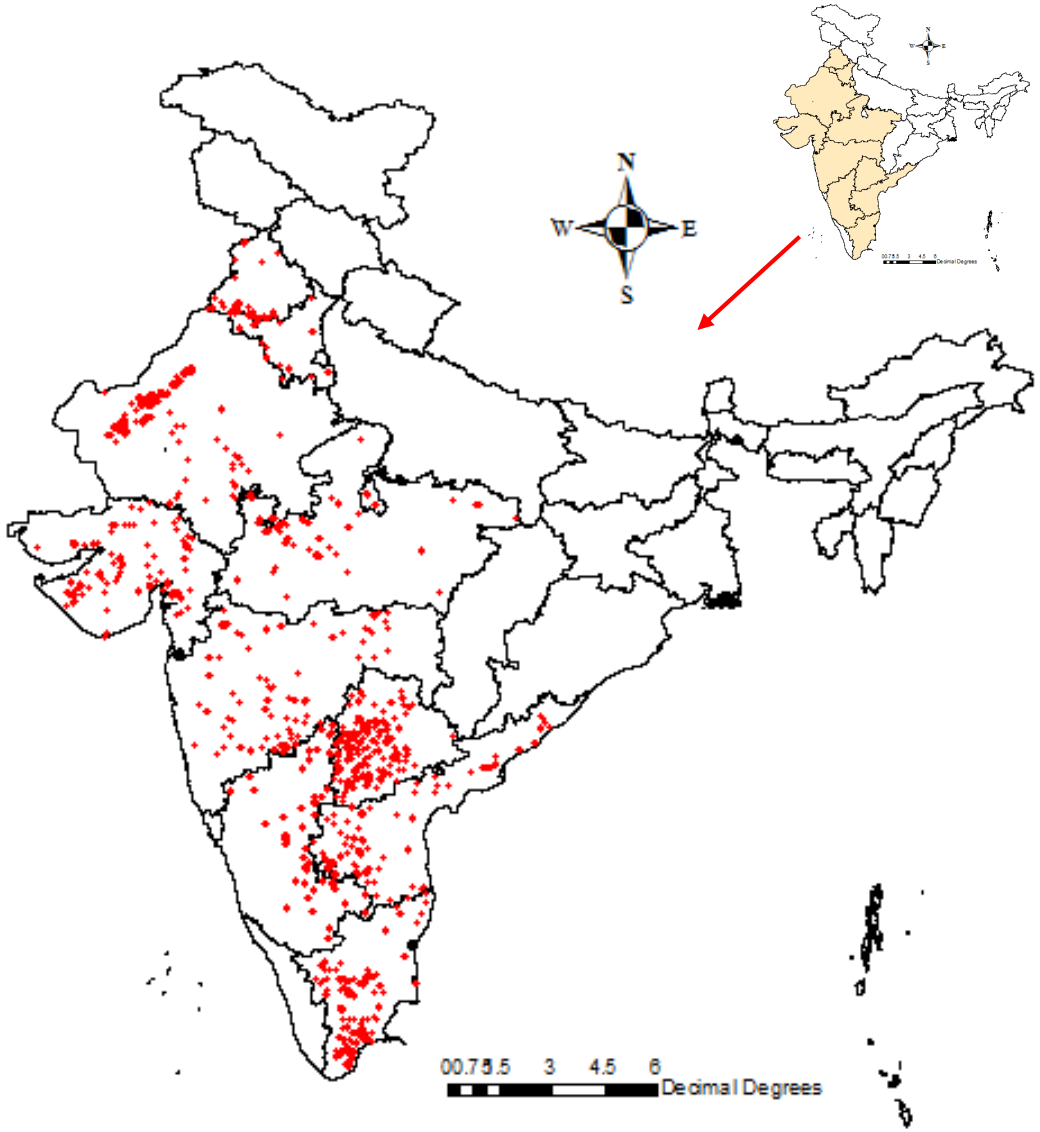
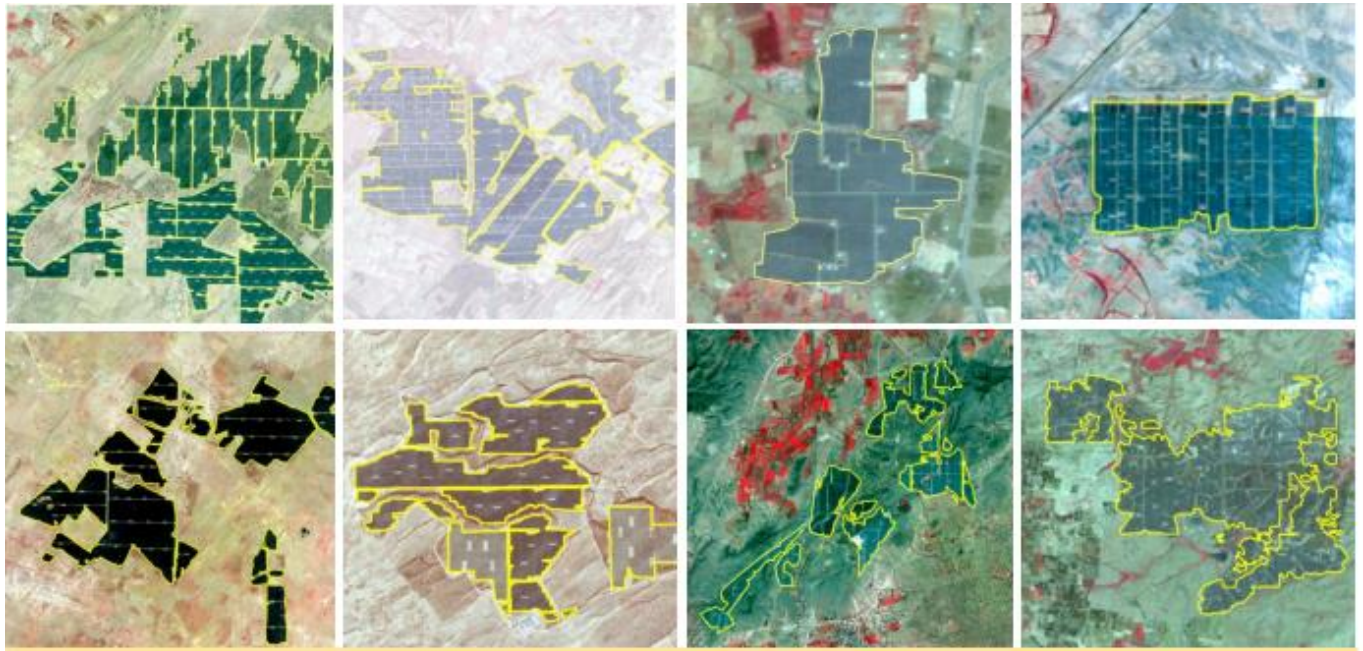
AI based Solar Plants Extraction for Indian states from Resourcesat-2 LISS IV Data



Solar power plants extracted from R2A LISS IV data for year Jan-April, 2023.



Solar power plants extracted across Rajasthan from R2A LISS IV data using Artificial Intelligence model

Description

Solar power plants are extracted for ten Indian states (Punjab, Haryana, Gujarat, Madhya Pradesh, Rajasthan, Maharashtra, Karnataka, Telangana, Andhra Pradesh and Tamil Nadu) using artificial intelligence based deep learning neural network for year (Jan-April) 2023. Indian Remote sensing (IRS) Resourcesat-2A LISS IV satellite data is used with 5m ground spatial resolution and three spectral bands green, red and NIR. This work is carried under TDP- 202302021, title “Deep learning Based Solar Plants Identification using high resolution remote sensing data”. It is available in “New and Renewable Energy Applications” under VEDAS. Available at https://vedas.sac.gov.in/renewable-energy

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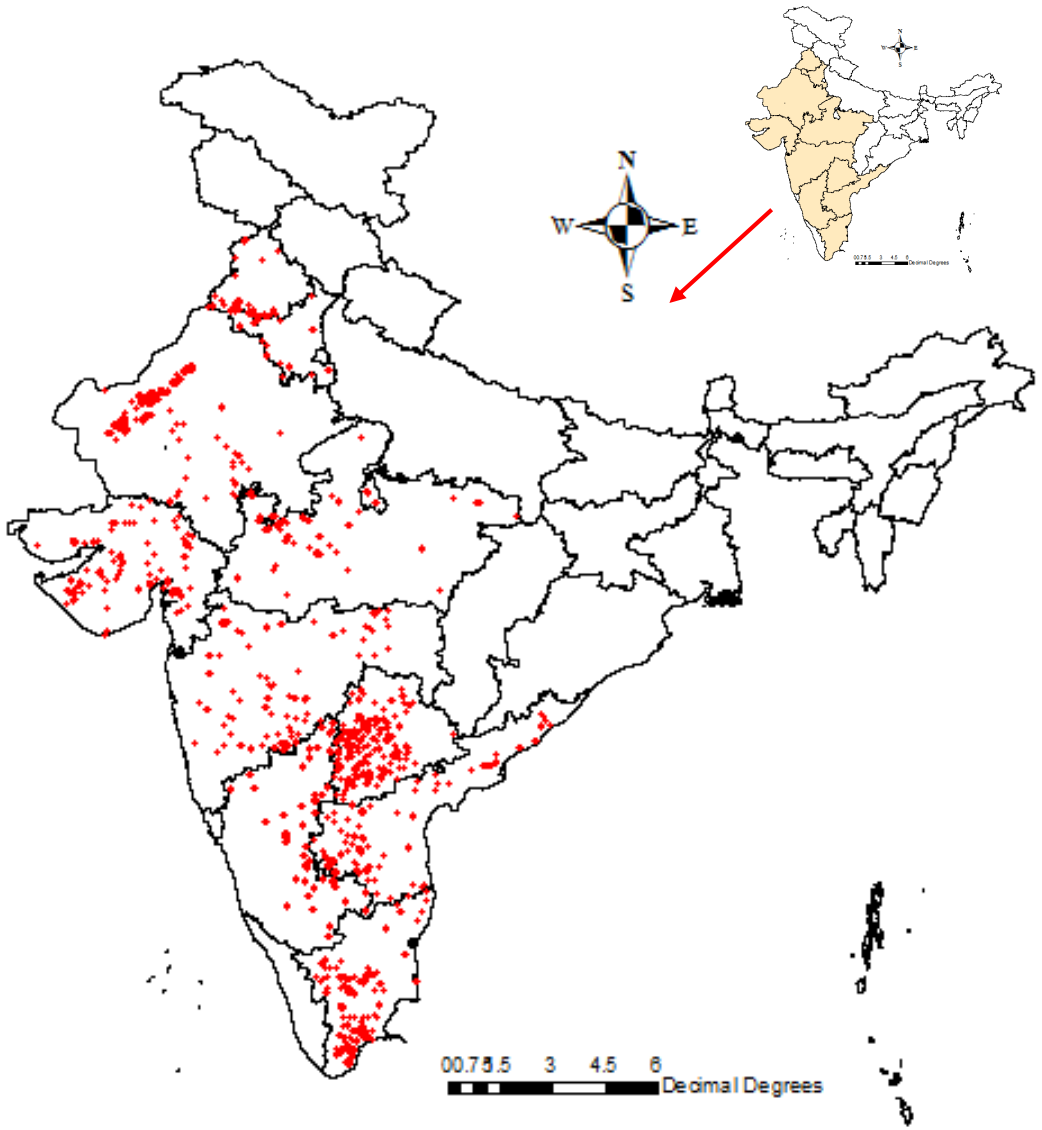
AI based Solar Plants Extraction for Indian states from Resourcesat-2 LISS IV Data



Resourcesat-2A LISS-IV FCC satellite data, 24th April, 2023

Solar Panels extracted using AI-Deep learning, 24th April, 2023

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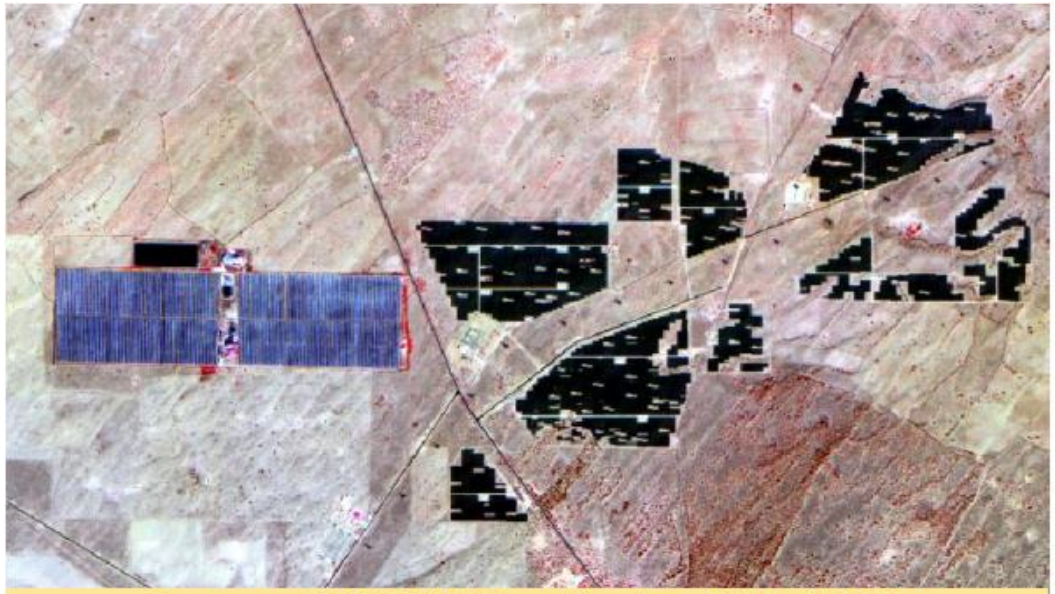
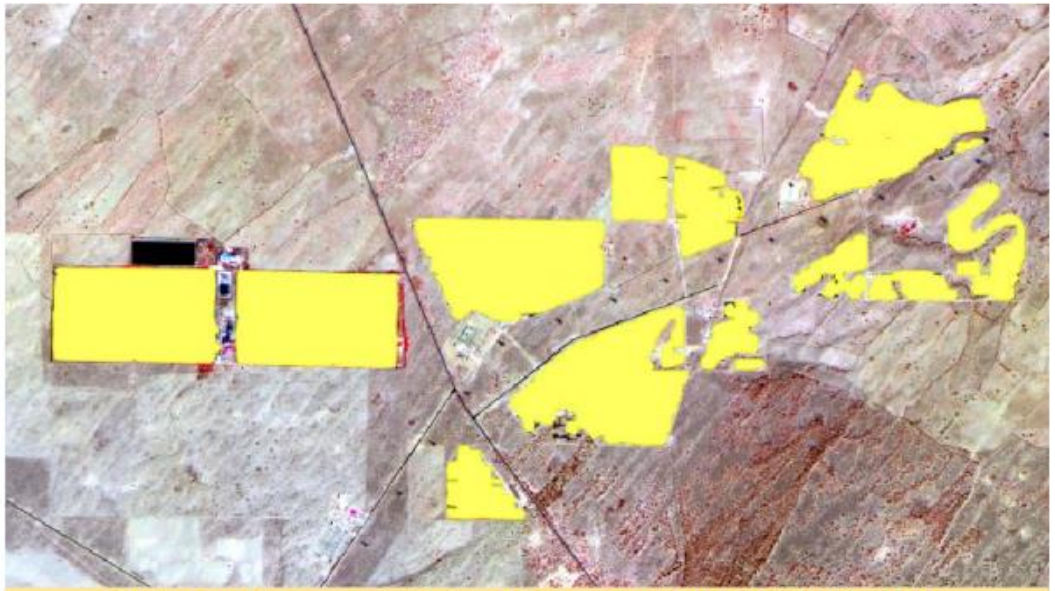


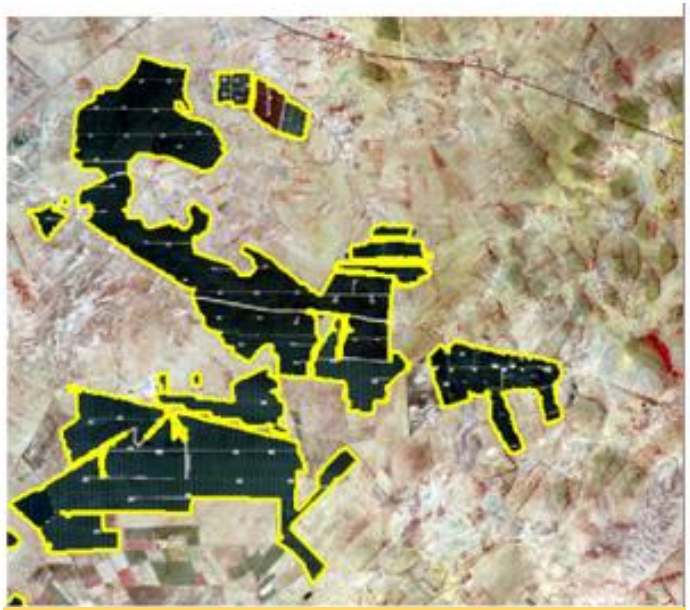
Resourcesat-2A LISS-IV FCC satellite data, 24th April, 2023



Solar Panels extracted using AI-Deep learning, 24th April, 2023

Temporal Change of Solar Plants across various states from year 2018 to 2023

Extracted Solar Panels in 16th March, 2018



Extracted Solar Panels in 24th April, 2023

Temporal change analysis of Solar Plants for the Rajasthan state from year 2018 till 2023 is done using Resourcesat-2A LISS-IV data. It is found that in the past five years solar power plants inventories have increased nearly 6.3 times in Rajasthan, 2.5 times in Gujarat, 1.5 times in Madhya Pradesh, 1.57 times in Maharashtra, 1.25 times in Karnataka, 0.3 times in Telangana, 1.87 times in Andhra Pradesh and 2.31 times in Tamil Nadu.

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Area-wise distribution of Solar Plants extracted via AI Deep Neural Network