Forest Wildfire Detection from Satellite Images using Deep Learning

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Abstract*: Forest wildfires pose a significant threat to ecosystems, human lives, and infrastructure, and this project presents a deep learning-based approach for the early detection of forest wildfires from satellite images, employing data preprocessing, model training, and inference steps, where satellite images are pre-processed to enhance features and reduce noise, a deep learning model is trained using convolutional neural networks on a large dataset of labelled images, and the trained model is applied to new images in a sliding window manner to detect potential wildfire regions and generate a heatmap for visualization, resulting in a high accuracy detection system that surpasses traditional methods and aids in early warning and decision-making for fire management authorities*

Keywords: Machine learning, deep learning, convolutional neural network, forest fire detection

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