EMERGING METHODS FOR EARLY DETECTION OF FOREST FIRES

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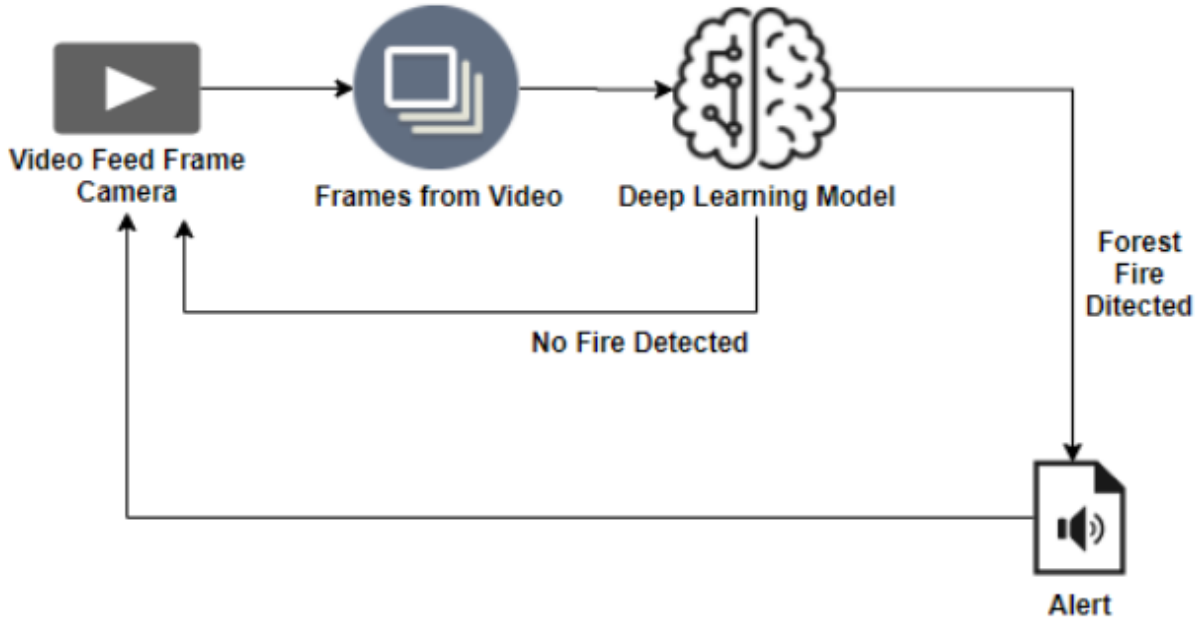
PROBLEM STATEMENT:

- Forest fires are a major environmental issue, creating economic and ecological damage while endangering human lives.
- It is difficult to predict and detect Forest Fire in a sparsely populated forest area and it is more difficult if the prediction is done using ground-based methods like Camera or Video-Based approach. Satellites can be an important source of data prior to and also during the Fire due to its reliability and efficiency. The various real-time forest fire detection and prediction approaches, with the goal of informing the local fire authorities.

AN ARCHITECTURE FOR THE SOLUTION



DEFINING THE PROBLEM:

Whom does the problem affects?	• Tribal people living in forest. • Forest department officials and local authorities. • Government of the affected country.
What is the issue?	• Forest fires are a major environmental issue, creating economic and ecological damage. • It is difficult to predict and detect Forest Fire in a sparsely populated forest area. • Thus, it causes huge damage to our precious forest cover and wildlife.
When does the issue occur?	• Forest fires are usually seasonal. • They usually start in the dry season (summer) with an increase in dead fuels and high winds. • They occur either ignited by the sun's heat or a lightning strike. • However, most wildfires are caused by human activities, including unattended campfires, discarded cigarettes, arson and more.
Why is it important that we fix the problem?	• Forest fires destroy the most valuable flora and fauna. • They lead to global warming and adverse climatic changes. • Economic loss for country is huge.
What solution to solve this issue?	• To solve this issue, early detection of forest fires is extremely important. • The proposed model should predict fire early and alarm the respected authorities for immediate action. • For this, satellite images can be used as an important source of data for accurate and efficient prediction.
What methodology used to solve the issue?	• The user interacts with a web camera to read the video. • Once the input image from the video frame is sent to the model, if the fire is detected, it is showcased on the console, and alerting sound will be generated and an alert message will be sent to the Authorities. • To achieve this, we classify images using a Convolutional Neural Network and use other open CV tools.