**Title of Project:** MODERN FOREST FIRE DETECTION SYSTEM

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**PROGRESS REPORT**

**Project Objective:**

Detection of forest fire using advanced sensors and cameras. Along with that It also aims to reduce human efforts by using artificial intelligence like image classification algorithm.

**Project planning:**

Considering a real-world scenario, the forest will be divided into some number of sections. Then revolving cameras and fire detection sensors will be installed in each section. All real time data will be collected and stored in hard drive. A fire detection algorithm will be developed. Then a model is created. It is trained with training dataset and tested with testing dataset. After the model is tested fine, it is deployed for real time application. The resultant dataset form the model will be transferred to Arduino. There are four LEDs (Red, Orange, Yellow, Green) connected to Arduino. According to that data Arduino will blow the buzzer. As we have already divided the forest into sections, it will be easier to get the exact location of fire.

**Status of work completed:**

Our main project revolves around building a system which makes inference from visual representation and the weather parameters. To create a fire detection model, we collected many images of forest containing fire and green forest and trained it using convolutional neural network to predict whether the image contains fire or not. The model is prepared now and making correct inference in real time. Also we have built a weather parameters simulation which gives real time weather data(like temperature ,pressure and humidity) for a particular place .We could say that one kind of POC(proof of concept) has been accomplished. Now we are building all the circuits using Arduino. About 60% to 70% work is completed. In coming months if all situations remain alright then we will present a hardware prototype of our project otherwise we will present a simulation using MATLAB or Proteus or Python.

**Keywords:**

Machine Learning, Deep Learning, Classification, Image Processing, Fire Detection, Arduino,

Python, Convolutional Neural Network

**References:**

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Signature of Supervisor Signature of Students