**DEPARTMENT OF ELECTRONICS AND COMMUNICATION**

**ENGINEERING**

**IBM – LITERATURE SURVEY**

**PROJECT TITLE**

**EMERGING METHODS FOR EARLY DETECTION OF FOREST FIRES**

(2022-2023)



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| **S.no** | **Title of Paper** | **Advantages** | **Disadvantages** | **Technology Used** |
| **1** | **A review on Early Forest fire detection systems for using optical Remote sensing** | * **The global areas covered by the forest and urban woodlands** * **most overview of remote sensing can be easily analyzed the forest fire** | * **A weaknesses of fire detection systems based on optical remote sensing** | * **artificial intelligence** * **multispectral imaging system** |
| **2** | **Early wildfire smoke detection** | * **useful for the detection of smoke** * **reducing the number of problems negative detection** | * **The presence of haze and without the labeled data is difficult** * **Since it won’t work properly** | * **inception v2 on the COCO dataset**      * **RCNN architecture** * **DCNNs computer version** |
| **3** | **Artificial Intelligence for Forest Fire Prediction** | **1.It plays a major role in resource allocation**  **2.ability to accurately predict the hazard of fire occurrence.** | * **The results demonstrates the ability to predict forest fire risk with a limited amount** * **it s based only on meteorological data and independent any weather prediction mechanism** | * **index terms** * **machine learning** * **SVM** |
| **4** | **The fire as a key driver of earth biodiversity** | * **there have been few empirical tests of proportions** * **its have high level pyro diversity** | * **biodiversity loss can significant direct human health impacts** * **more plants means the better environment and lesser of green house or temperature rising** | **Monitor sensor** |
| **5** | **Pyro diversity promotes avian diversity over the decade following forest fire** | * **An emerging hypothesis in fire ecology** * **pyro diversity increases species diversity.** | * **The no change and increase in canopy covered fire** * **wildlife habitat and timber** | **USDA server** |
| **6** | **Fire and biodiversity in the Anthropocene** | * **depends on particular temporal and spatial patterns of fire** * **it improved forecast for biodiversity must also integrate the connections among people, fire and ecosystem** | * **these is no changes pose a global challenge** * **biodiversity loss can have significant direct human health impact if ecosystem service are no longer adequate to meet social needs** | * **GSI technology** * **Radar sensor optical** |
| **7** | **Real-Time Forest Fire Detection Framework Based on Artificial Intelligence** | * **the image based fire detection compared to conventional fire detectors** * **fire detectors are used to provide the earliest possible warning of a fire** | **Not applicable to the cluster are distributed over the given data** | * **Solor module** * **Support vector machines** |
| **6** | **Forest fire and climate change** | * **Including enhanced biodiversity** * **Greater long terms and more sustainable carbon storage** | * **It increases the air pollution** * **the climate changing time**   **as produces**  **more smoke** | **Satellite analyzer** |
| **9** | **Reforestation of wild fires** | * **It suggest conceptual frameworks for assessing landscape** * **Better economic growth** | * **local poverty may increase** * **less space for the important infrastructure** | **satellite imagery** |
| **10** | **The forest fires using unmanned aerial vehicles and LoRaWAN sensor networks** | * **They ware primary aimed at the early detection of the fires** | **It consumes more power and coverage range is less** | * **DJI Matrice 600 Pro rotary wing UAV** * **LoRaWAN sensor** |