**DEPARTMENT OF ELECTRONICS AND COMMUNICATION**

**ENGINEERING**

**IBM – LITERATURE SURVEY**

**PROJECT TITLE**

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

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| **S. No** | **PROJECT TITTLE** | **ADVANTAGES** | **DIS ADVANTAGES** | **TECHNOLOGY USED** |
| 1. | IOT-FOG ENABLED FRAMEWORK FOR FOREST FIRE MANAGEMENT SYSTEM | * The strength of trees has drastically decreased which lead to unhealthy forest environment * In recent years , few works have been carried out on forest management using wireless sensor networks. | * The most of critical catastrophes which has been initiated mostly by global warming. * Due to the environmental pollution nature can make this threat even worse by destroying themselves and mankind. | * The proposed IOT – FOG based frame work for forest fire management system is used for monitoring and alerting to safeguard the trees and wild life. |
| 2. | DATA MINING APPROACH TO PREDICT FOREST FIRE USING FOG COMPUTING | * Fast and quick prediction is the only way by which we can atleast face it with readily available fire extinguishing resources * The data transfer happens wirelessly via zig bee tools. | * Fire caused in forests are known to be one of the most hazardous environmental issues which can not be neglected. | * Fog based computing , support vector machine(SVM) * Date mining approach to predict the area prone to forest fire. |
| 3. | IOT AND IMAGE PROCESSING BASED FOREST MONITORING AND COUNTERACTING SYSTEM | * They provide us with plenty of amenities required to sustain our life.      * This system is based on the emerging technology of IOT and image processing . | * Forests are the indispensable resource of our life has they cover one third of land on earth * In 2019 Amazon rain forest wild fire destroyed thousands hectors of forest. | * Internet of things(IOT),image processing , wireless sensor network(WSN). |
| 4. | FULLY SMART FIRE DETECTION AND PREVENTION IN THE AUTHORIZED FORESTS | * The working of this system is based on IOT where networked devices are communicated based and identification certain activities will propagate such information to another in the internet mode. | * This system also connects to the ponds to extract the water and water pipes lines are near the forest activities such as entities of carry water to extent possible to avoid dangerous sceneries . | * IOT sensors, unmanned aerial vehicles(UA VS) networked and spots. |
| 5. | LOW COST LORA BASED NETWORK FOR FOREST FIRE DETECTION | * The interest providing solutions to monitor and scenarios and fire prevention based on these technologies is huge. * The system is composed by LoRa node and a set of sensors to measure the temperature, relative humidity, wind speed and CO2 . | * Forest fire are one of the main environmental problems in the entire Mediterranean basin. | * Wireless sensor networks (WSN), LoRa , forest fire detection, Arduino, the think networks(TTN). |
| 6. | IOT BASED ENVIRONMENTAL MONITORING SYSTEM FOR BRUNEI PEAT SWAMP FOREST | * This peatland forest plays a very important role in the regions rain forest ecosystem. * This peatland is under the protection of the heart of Borneo initiative. | * Brunei Darussalam is largely covered by the tropical rainforest. * Around 60% of Brunei total land area is peatland. | * By using a internet of things(IOT) based remote monitoring system, Peat swamp forest areas can be monitored. |
| 7. | FOREST FIRE ALERTING SYSTEM WITH GPS CO-ORDINATES USING IOT | * Fire spread on hot days destroy trees and grasses due to drought condition peaks in a forest regions. * The objectives of this work is to design and implement an IOT based system which is self – sustaining and would predict and detect the forest fire. | * Many incidents of man-made and natural disasters were happening around the world. * Forest fire are one such catastrophe for environment. | * Fire detection, Arduino, sensors, GPS – module authentication. |
| 8. | SMART FOREST: FIRE DETECTION SERVICE | * The required technology for search monitoring usually demands a complex and expensive sensors and networks infrastructure. * One of the main objectives of smart forests is to detect wildfire at early stages | * Smart forest is a concept derived from the define section of remote sensing to collected data environmental condition. | * The developed fire detection (IOT) prototype application is based on the context Net middle ware, using event processing agents(EPAs). |
| 9. | IOT SENSOR AND DEEP NEURAL NETWORK BASED WILDFIRE PREDICTION SYSTEM | * Forest one of the most valuable and necessary resources and protect earth’s ecologically balance. | * The effects of wild fires are numerous and wide range. * It causes a hugely significant impacts on the economy, environment and social fabric of rural area. | * GPS sensors, bolt IOT and cloud, soil moisture sensor YL – 69. |
| 10. | EDGE COMPUTING IN IOT ECOSYSTEMS FOR UAV – ENABLED EARLY FIRE DETECTION | * This three layers ecosystem combines powerful resources of cloud computing, fog computing, IOT. | * Initial experimental evaluation measuring crucial performance metric indicate that critical resources, such as CPU/RAM. | * Edge computing, fog computing, UAV , cloud computing, dynamic resources allocation. |