INDUSTRY - SPECIFIC INTELLIGENT FIRE MANAGEMENT SYSTEM

IDEATION-1:

The Forest fires are one of the most critical catastrophes which has been initiated mostly by global warming. Due to environmental pollution, nature can make this threat even worse by destroying themselves and mankind. In recent years, few works have been carried out on forest management using wireless sensor networks. However, forest management with the help of wireless sensor networks are still having issues in the quality of data, delay in arrival. Currently there is a big wave of IoT and Edge computing deployed in a lot of smart city applications for processing the data closer to devices for quick action rather than cloud. So, with this as basis, we propose an IoT-Fog based Forest Fire Monitoring system. The proposed IoT – Fog based framework for forest fire management system is used for monitoring and alerting to safeguard the trees and wildlife.

IDEATION-2:

Mountains are popular tourist destinations due to their climate, fresh atmosphere, breathtaking sceneries, and varied topography. However, they are at times exposed to accidents, such as fire caused due to natural hazards and human activities. Such unforeseen fire accidents have a social, economic, and environmental impact on mountain towns worldwide. Protecting mountains from such fire accidents is also very challenging in terms of the high cost of fire containment resources, tracking fire spread, and evacuating the people at risk. This paper aims to fill this gap and proposes a three-fold methodology for fire safety in the mountains. The first part of the methodology is an optimization model for effective fire containment resource utilization. The second part of the methodology is a novel ensemble model based on machine learning, the heuristic approach, and principal component regression for predictive analytics of fire spread

data. The final part of the methodology consists of an Internet of Things-based task orchestration approach to notify fire safety information to safety authorities. The proposed three-fold fire safety approach provides in-time information to safety authorities for making on-time decisions to minimize the damage caused by mountain fire with minimum containment cost.