EMERGING METHODS FOR EARLY DETECTION OF FOREST FIRES

CHENNAI INSTITUTE OF TECHNOLOGY

TEAM LEAD
R Vaishnavi
210419205038
B.Tech IT

MENTOR
Dr. Preethiya T
PhD, ME, BE
Dept. of AI&DS

TEAM MEMBERS

1) Nandhini G K
210419205030
B.Tech IT

2) Rubeesh S L
210419205039
B.Tech IT

3) Ghoushik B
210419205011
B.Tech IT

ABSTRACT

Forest fires are occurring throughout the year with an increasing intensity in the summer and autumn periods. These events are mainly caused by the actions of humans, but different nature and environmental phenomena.Over 9 million acres of land have been destroyed due to treacherous wildfires.To fight forest fires, different solutions were employed throughout the years.These solutions have greatly decreased the direct involvement of humans in the forest fire detection process, but have also proven to be expensive and hard to maintain.In this paper we will discuss emerging solutions for early detection of forest fires.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.We have a proposed flow, which is 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. Huge source of data collection has to performed for processing of images. Using CNN layers, we are going to classify the images if fire is spotted or not.Using Twilio API messages will be sent to the fire management team.

KEYWORD

Forest fire, Detection, Data Collection, Image Processing, Sound Alert

LITERATURE SURVEY

S. No	Author Name	Title	Journal/ Conf Title	Volume No.	Year	Description
1	Suneel Mudhunuru, NarasimhaNayak, Sreenivasa Ravi	Real Time Security Control for Smoke and Fire Detection	International Journal of Computer Science and Information Technologies	2(6)	2011	Using Zigbee
2	Bosch, Serraro	Multisensor Network System for Wildlife Fire Detection	The Scientific World Journal	201	2013	Using Infrarred Image Processing
3	Murat Dener et.al	Fire Detection system using Wireless Sensor Networks	Procedia - Social & Behavioral Sciences	195	2015	Detection of temperature, humidity and smoke
4	Vijayalakshmi, Murganand	Real Time Detection of Wireless Fire Detection Node	Procedia Technology	24, 1113-1119	2016	Low Rate and Low Power Sensor node for monitoring
5	Harish Radhappa, Lei Pan, Sheng	Practical Overview of Security Issues	Journals of Computers and Applications	40(4), 202-213	2017	Wireless Sensor Network Applications
6	Jiawen Wang, Hairong Yan	Group Positioning System for Wireless Sensor Networking	IEEE 25th International Symposium	1174-1179	2016	Group Positioning Method