LITERATURE SURVEY

TEAM ID	PNT2022TMID39882
PROJECT NAME	Emerging Methods for Early Detection of Forest Fires

ABSTACT

Forests are potentially and seriously threatened by fires which have caused huge damages and losses of life and properties every year. In general, it is easier to detect smoke than fire in its early stage. Developing an effective and safe smoke detection method is thereby critical for early forest fire fighting and preventing the fire developing into uncontrollable. This paper presents a learning-based fuzzy smoke detection approach intended to achieve an effective and early forest fire detection, while greatly reduce the negative impacts from clouds in the sky, illumination variations, and changes of forest features.

REFERENCES

1. A Review on Early Forest Fire Detection Systems Using Optical Remote Sensing

- P. Barmpoutis, P. Papaioannou, K. Dimitropoulos, N. Grammalidis
- Environmental Science
- Sensors
- 2020

An overview of the optical remote sensing technologies used in early fire warning systems is presented and an extensive survey on both flame and smoke detection algorithms employed by each technology is provided.

2. Forest Fire Detection System using LoRa Technology

- N. Gaitan, Paula Hojbota
- Environmental Science
- 2020

This paper proposes a system capable of quickly detecting forest fires on long wide distance using LoRa (Long Range) technology based on LoRaWAN (Long Range Wide Area Network) protocol which is capable to connect low power devices distributed on large geographical areas.

3. Low Cost LoRa based Network for Forest Fire Detection

- Roberto Vega-Rodríguez, Sandra Sendra, Jaime Lloret, Pablo Romero-Díaz, José Luis García- Navas
- Computer Science, Environmental Science 2019 Sixth International Conference on Internet of Things: Systems, Management and Security (IOTSMS)
- 2019

A low cost Long Range (LoRa) based network able to evaluate level of fire risk and the presence of a forest fire and the evaluation algorithm is based on the 3030-30 rule.

4. A Survey of Machine Learning Algorithms Based Forest Fires Prediction and Detection Systems

- F. Abid
- Environmental Science, Computer Science
- Fire Technology
- 2020

A comprehensive survey of the machine learning algorithms based forest fires prediction and detection systems is presented, highlighting the main issues and outcomes within each study.