|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TITLE**  **LITERATURE SURVEY** | **AUTHOR AND YEAR** | **PROBLEM PROPOSED** | **LIMITATIONS** | **PROBLEM SOLUTION** |
| Early Detection  of Forest Fire  Using Mixed  Learning  Techniques and  UAV | Varanasi  LVSKB  Kasyap, et al  (2022) | The proposed work  deployed on an onboard  UAV uses a mixed deep  learning technique  composed of YOLOv4  tiny and LiDAR  techniques. It has  achieved 1.24 seconds of  classification time with  an accuracy of 91% and  an F1 score of 0.91. | This model is  sensitive to the  forest with dense  fogs and clouds.  This is because  smoke appears the  same as fog, and  the model may  misclassify the fog  as smoke. | The proposed  model  outperforms the  traditional  methods such as  Bayesian  classifiers,  random forest,  and support  vector machines. |
| Holistic approach of forest fire protection of split and Dalmatia country of croatia | Darko stipanicev  Ranko vujic(2014) | Dalmatia is highly affected by forest fires during the summer | Rusting in burned down wood mass of 125.000ms which expressed in energy | 1.To animate and make financially attractive for local inhabitants collecting of lopping,chopped wood,dry trundles on the massive scale  2.Thin forests and keep the wooded area as clean and passable as reasonably possible |
| A review on early forest fire detection systems using optical remote sensing | Panagiotis barmpoutis  Konsmas dimitropoulas  Nikos grammalidis(2020) | To review a review of early forest fire detection systems | These are affected by weather conditions and in many cases,their flight time is limited | Early fire detection multispectral imaging systems,terrestrial,aerial,satellite,  Artificial intelligence |
| The influence of climate change on forest fires in Yunnan province,  Southwest china detected by GRACE satellites | Lilu cui  Chaolong yao  Zhengbo zou(2022) | The analyze the influence of climate change on forest tines in Yunnan | Climate change affects the occurrence of forest fines by changing the dryness ob combustibles through temperature,  Precipitation,  Evapotranspiration etc. | The results show that GRACE satellites can detect the influence of climate change on forest fire Yunnan province |
| Fire detection  using infrared  images for  UAV-based  forest fire  surveillance | Chi Yuan, et al  (2017) | The paper proposed an  image processing method  for the application to  UAV for the automatic  detection of forest fires  in infrared (IR) images.  The algorithm makes use  of brightness and motion  clues along with image  processing techniques  based on histogram-based segmentation and optical flow approach for fire pixels detection | Using only IR images may lead to false alarms. The  combination of IR  images with visible range images together to reduce the false alarm rates of fire detection arm results. | This approach uses both  brightness and motion features of fire to improve the accuracy and reliability. Histogram based  segmentation and optical flow  analysis, differentiates fires from background as well as non-fire hot moving objects. |
| S-mart forest fires early detection sensory system:  Another approach of utilizing wireless sensor and neutral networks | Hamdy soliman(2010) | This aim of this paper is to implement a forest fire early detection system using small and cheap sensor nodes which can be left unattended | Forest fire all costly and dangerous because they cause extensive damage both to property and human life | The SFFEDSS unit able to not only detect fire but also accurately report the direction of fire progress which is deduced from the wind direction |
| Adoption of image surface parameter under moving edge computing in the construction of mountain fire warning method | Chen cheng  Hui zhou  Danning wang(2020) | The purpose of this study is to project mountain fires based on MEC | Due to the importance of natural and human activities,fire hazard is extremely easy to occur,affects the safety of maintain resource and human life and property | 1.A hierarchical discriminant analysis algorithm for image feature extraction.  2.The design of mobile image acquisition software.  3.Image recognition an optimization algorithm under MEC environment. |
| Natural hazards wildfires | Prof.David(E.Alexander) | Forest and rangeland fires are a source of important eldogical and economic damage. A wildfire burns out of control and threatens people buildings or resources | 1.Lightning strikes  2.Human negligence and vandalism (greatest at the urban rural interface) | Do not burn any materials that are combustible or unusual in nature |
| Predictive  modeling of  wildfires: A  new dataset and  machine  learning  approach | Younes  OuladSayad, et  al (2019) | This paper proposed a  methodology to analyze  the created dataset in  order to predict the  occurrence of wildfires in  a specific region.  Artificial Neural  Networks and Support  Vector Machines were  implemented in  “Databricks”. The model  gave good results for  both algorithms  (SVM 97.48%, NN  98.32%); | Weather data must  be included as it  plays a major role  in the occurrence,  growth, spread and  the Extinction of  wildfires. It can  impact on the  strength and  movement of fire,  and thus burn more  land, which makes  its extinction even  more difficult. | The accuracy was  assessed using  classification  metrics, crossvalidation,  and regularization. Thus, they confirm the efficiency of the model in predicting the occurrence of wildfires. |
| Forest Fire  Detection  System Using  IoT and  Artificial  Neural Network | Vinay Dubey,  et al (2018) | This paper makes use of  Internet of things  technology. The early fire  detection model has been proposed with the help of the Raspberry Pi  microcontroller and  required sensors.  Centralized server  is used for storing the  data and analyzing that  data. Feed-forward fully  connected neural  network is used for  prediction purposes. Then, an alert message is  sent to the admin and to  the people within the  proximity. | Wireless sensor  networks are  vulnerable to  malicious security  attacks, as they  often lack any  robust security  system. | Compared to  other forest fire  technologies,  wireless sensor  network with IoT  is better  to detect fire.  Detection and the  communication to  the authorities can  be done with  minimum delay. |