LITERATURE SURVEY

Emerging Methods For Early Detection Of Forest Fires

Author name: Osman Gunay and Habiboglu

Year of publishing: 2011

Description: They proposed a system based on Covariance Descriptors, Color Models, and SVM Classifier. This system uses video data. Spatio-temporal Covariance Matrix (2011) is used in this system which divides the video data into temporal blocks and computes covariance features. The fire is detect redusing this feature. SVM Classifier is used to filer fire and fire-like regions. This system supports only for clear data not for blur data.

Author name: Dimitropoulos

Year of publishing: 2015

Description: He proposed an Algorithm where a computer vision Approach for fire-flame detection is used to Detect fire at an early stage.Initially,Background subtraction and color analysis Is used to define candidate fire regions in a Frame and this approach is a non-parametric Model. Following this, the fire behavior is Modeled by employing various Spatiotemporal features such as color probability, Flickering, spatial and spatiotemporal Energy. After flame modeling the dynamic Texture analysis is applied in each candidate phase. The first phase involves segmentation of image using LBP. LBP is a texture operator whose value is computed using image's center and neighboring pixel values. Further accuracy is improved using Wavelet Transform and complicated data is classified using this approach. 2D Discrete Wavelet Transform is used for decomposition in this system.

2D images should be used as input and the sub bands of every image are compared with the other, if sub bands are equal the images are same else different.

Author name: Celik

Year of publishing: 2007

Description: He proposed a generic model For fire and smoke detection without the use Of sensors . Fuzzy based approach is Used in this system. Color models such as Y Cb Cr, HSV are used for fire and smoke Detection. The fire is detected using Y Color model samples because it Distinguishes luminance and chrominance. Y, Cb, Cr color channels are separated from RGB input image. A pixel is more likely a Hire pixel if intensity of Y channel is greater Than channel Cb and Cr.

Author name: Cheng

Year of publishing: 2011

Description: He proposed a fire detection system based on Neural Network; here Neural network is used in detection Information for temperature, CO Concentration, and smoke density to Determine probability of three Representative fire conditions. RBF neuron Structure is used, the information regarding Temperature, CO concentration, and smoke Density are collected and data fusion is used To generate fire signal decision. The Detectors have continuous analog outputs, When detection limit is exceeded the Hardware circuit sends a local fire Indication to fusion center, this force the System detectors to generate final decision. Single-sensor detector is used to generate the final decision.

Author name: Zhanqing

Year of publishing: 2001

Description: He proposed another method using NN and Multi-threshold algorithm. In this method the NN not only classify the smoke, sky, background but also generates a continuous random output representing mixture of these. NN consumes time in case of large areas so multi-threshold algorithm also used as well. These two approaches may be combined or used separately depending on the size of the area. Multilayer Perceptron Neural Network the center of each frame. This fact is used to model the probability of occurrence of fire.

BY

M.NEELA DEVI

G.JINI KOWSHIKA

A.SNEHA

V.SHARMILA VINOLI