**HUMAN RESCUE SYSTEM FOR FLOOD AREAS USING OPENCV COMPUTER VISION**

**ABSTRACT**

Floods are becoming more frequent and severe natural disasters worldwide due to extreme climatic change. In addition to causing a huge economic damage (to the human property) they cause a substantial loss of human lives even leading to fatalities. Early detection is critical in providing a timely response to prevent damage to property and life. It is therefore crucial to use all available technologies, including Earth observation, in their prevention and mitigation. On the other hand, focusing on immediate actions to be taken after the onset of flood is highly essential. Person detection and tracking is a popular and still very active field of research in computer vision. There are many camera-based safety and security applications such as search and rescue, surveillance, driver assistance systems, or autonomous driving. Previous methods for flood detection uses specialized satellite imagery. In this project, we propose a method for real time human detection using deep neural network algorithm based on video content analysis of feeds from surveillance cameras, which are more common and readily available nowadays. We demonstrate that open CV is effective method and comparatively fast for recognition and localization in COCO Human dataset. Once the presence of human is detected, the system will capture the detected image and send to rescue team through mail alert to rescue them by saving their life.

**REAL TIME WORM AND GRASSHOPPER DETECTION BY USING SUPPOERT VECTOR MACHINE ALGORIHTM.**

**ABSTRACT**

Grasshopper takes a heavy toll on agricultural crops causing severe loss to the farmers and farming community. Crops were damaged by attack of disease, insect, nematodes and weeds. Our crops are under threat from the day they are seeded till they are harvested causing significant damage to the crop affecting adversely to the farmer’s economy. Many factors influence disease development and growth of insect that includes genetics of variety, plant growth stage, weather, soil and nutrients of plants form leaves and fruits etc. Developing a system having a complete knowledge base of pest (grasshopper) in the farmer’s field based on the damaged system or by the image of the grasshopper and worm through Image Processing technique. With this technique we introduce the SVM in Machine Learning for image classification and Color histogram and grasshopper and worm Detection for feature extraction.

**IMAGE PROCESSING SYSTEM FOR CROP**

**FERTILIZATION**

**ABSTRACT**

The project presents plant leaf disease diagnosis using video analyzing techniques for automated vision system used at agricultural field.In agriculture research of automatic plant leaf disease detection is essential one in monitoring large fields of crops, and thus automatically detects symptoms of disease as soon as they appear on plant leaves.At Processing, an input image will be resized and region of interest selection performed if needed. Here, color and texture features are extracted from an input for network training and classification.Color features like mean, standard deviation of HSV color space and texture features like energy, contrast, homogeneity and correlation.The system will be used to classify the test images automatically to decide leaf either abnormality or good one.For this approach, automatic classifier BPN with FF and SVM algorithm (support vector machine) will be used for classification based on learning with some training samples of that two category.Finally, the simulated result shows that used network classifier provides minimum error during training and better accuracy in classification.

**MACHINE LEARNING AND IMAGE PROCESSING BASED SEVERITY AND COST PREDICTION OF DAMAGES IN THE VEHICLE BODY: A COMPUTATIONAL INTELLIGENCE APPROACH.**

**ABSTRACT**

Our project model will predict damage estimation and number of days to complete and payment also. Vehicle damage detection is one of the important prime activities in the insurance and consumers vehicle rental industries. These kinds of systems are widely used to identify the damage of a vehicle once an accident happens by the driver and also by the insurance company to detect and determine a suitable appraisal as per damage and vehicle rental companies to assign the damage of a vehicle to a guilty customer. The core technique of this system is object recognition. However, object recognition and classification being perplexing research ranges, the reliability of a project of this nature lies in the feature selection and extraction mechanisms. This project presents a novel approach of vehicle body damage severity and cost prediction with using 2D images. Thus, once vehicle body damages, the driver does not have to wait until the insurance company calculates the appraisal, consumer have more doubt about damage estimations. he himself can get a brief idea as to how much will it cost to recover the damage. Once an image is uploaded, the system processes the image and identifies the dent. Next, it is classified into the relevant severity class also considering the features of the vehicle like the make, model and the year of manufacture. Afterward, the severity generated as per damage image is mapped with the cost rules, which are constructed based on the properties of the vehicle such as the make, model and the year of manufacture. Finally, the user gets notified with a damage severity class and an average cost from which the damage can be recovered.