**CROP PROTECTION USING DEEP LEARNING**

**OBJECTIVE:**

The main aim of our project is to protect the crops from damage caused by animal as well as divert the animal without any harm. We are using an integrative approach in the field of Deep Learning to provide a repelling and monitoring system for crop protection against animal attacks.

**DETAILS:**

We are using Convolutional Neural Networks (CNN) method in Deep Learning to overcome this problem. we are using package like keras and Playsound in order to access libraries like Sequential,Dense,ConV2D,MaxPooling2D,Flatten, ImageDataGenerator. After importing the above mentioned libraries, convolution process will take place, followed by this process maxplooing and flattening process occur. Then the output of these layers will act as an input for our Artificial Neural Network model, after compiling these process ImageDataGenerator is used to train and test the model. Then the model is saved. On the other side we will get a continuously running video from our monitoring system and then the video is converted into separate frames. These frames are compared with our testing data if they both has some resemble features then it will produce the sound.

**OUTCOME:**

Once the frame matches with our data then it will identify what animal it is and will produce an appropriate sound to drive that animal away from the field. If the frame does not match with the data then it will continue to run without any alarm sound until the animal is detected. This ensures complete safety of crops from animals thus protecting the farmers loss.

**RESULT:**

The problem of crop vandalization by wild animals has become a major social problem in current time. Thus this project carries a great social relevance as it will help farmers in protecting their fields and save them from significant financial losses and will save them from the unproductive efforts that they endure for the protection of their fields.

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