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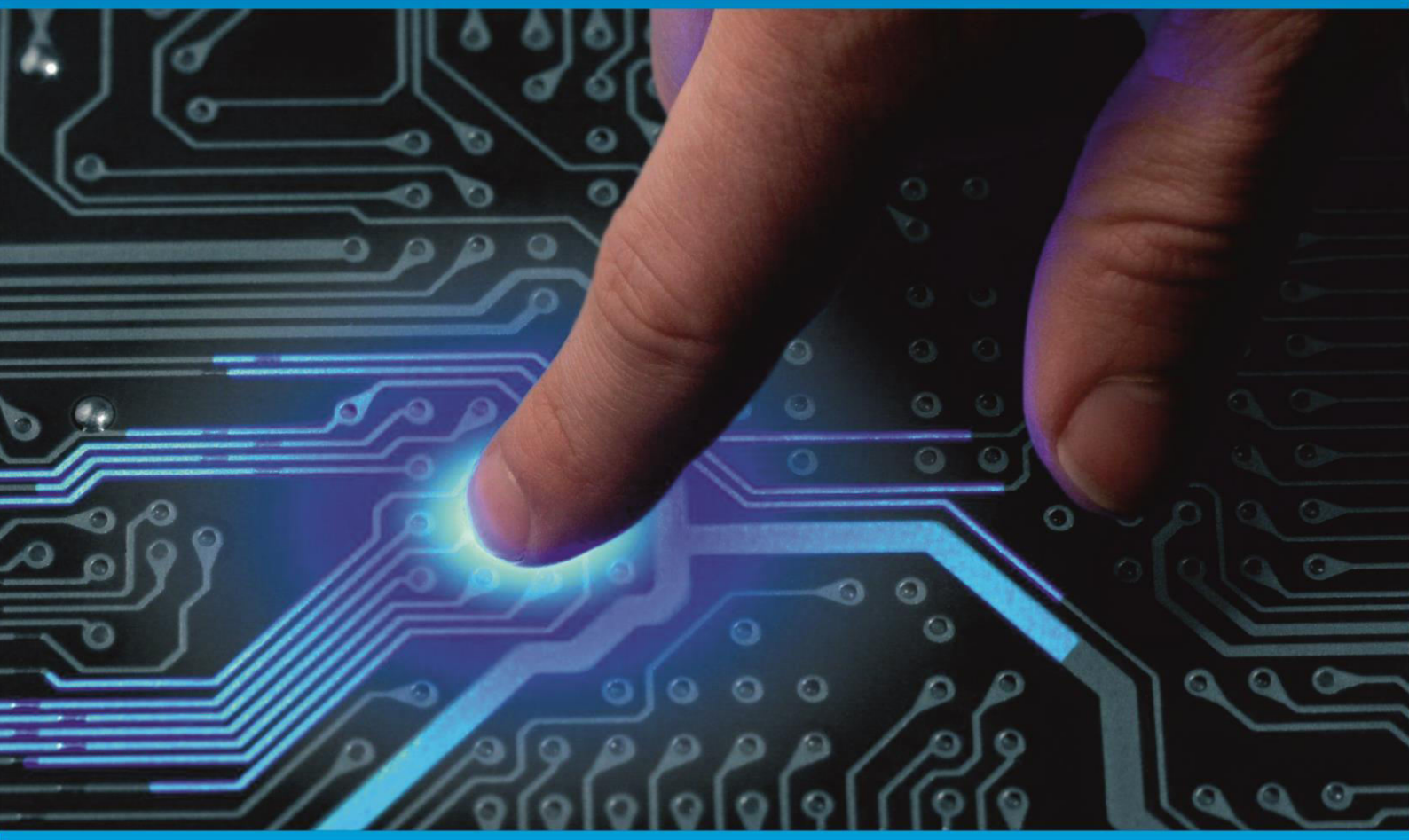

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# ANIMAL INTRUSION DETECTION AND ALERT SYSTEM USING DEEP CONVOLUTION NEURAL NETWORKS

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**ABSTRACT**: Animal monitoring and analysis are an active research field since last many decades. In this project, we focus on Animal monitoring and analysis through animal detection from natural scenes acquired by camera-trap networks. The image sequences obtained from camera-trap consist of highly cluttered images that hinder the the location of creature bringing about low identification rates and high bogus disclosure rates.To handle this problem, we have used deep convolution neural network This efficient feature set is then used for classification using state-of-the-art machine learning algorithms and once the animal is detected sound alert is made and the image is sent to cloud and viewed in the application**.**

**KEYWORDS:** Machine Learning, Colab, Deep Learning, Object Detection, Image Classification

## I. INTRODUCTION

Visual popularity has been gaining recognition in biodiversity renovation and control. Since launching our AI for Good initiative, we had been operating with biodiversity researchers and practitioners to supply Animal photograph popularity device studying fashions and tools. Our first foray into this region became our mission for Wild Detect, which aligned with certainly considered one among our dreams at to apply facts technological know-how consulting to useful resource withinside the renovation and control of our planet's Animal and environment. The aim became to construct a version for visible popularity of precise varieties of animals.

India Times have mentioned the intrusion of wild animals in private property and as well is in road crossing several times [5]. During these situations, the main aim is to drive away the wild animals automatically without causing loss for human lives as well as animal lives. As manual methods require manpower and system with hardware to detect animals requires maintenance every now and then, the model proposed overcome these difficulties as it involves only maintenance of software code. By using the concept of Deep Learning (DL) with Convolutional Neural Network (CNN) method, the wild animals can be detected when it is captured by the camera. Depending upon the animal detected, appropriate repellent sounds can be played in order to drive away the animal automatically. This project hence, requires a backend code, a 24/7 camcorder and a speaker. The concepts involved in this model are: 1. Computer Vision – to extract features from images 2. Machine Learning – Supervised learning is needed for the model in order to classify the animals. 3. Deep Learning – This provides the cognitive skill of analyzing the animal detected to a particular class and hence produce the appropriate output, just like how human analyses and this can be achieved with the help of CNN.

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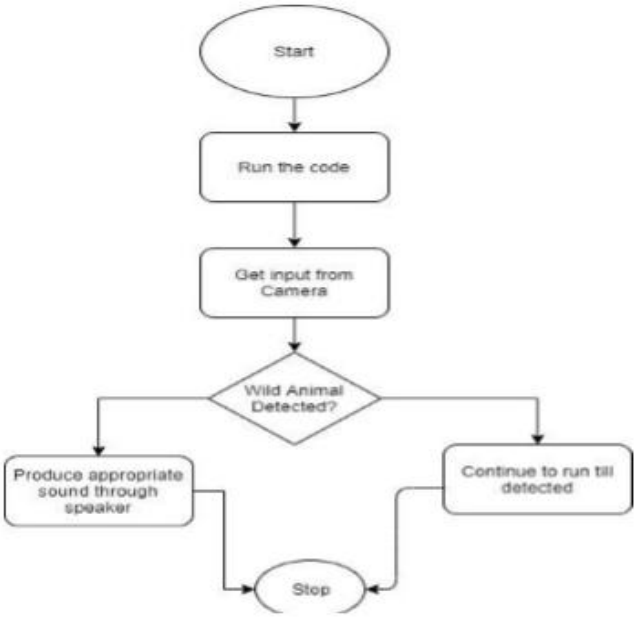


**Fig.1: Flow chart of the working model**

## II. RELATED WORK

Traditional electric fence has been helpful as a guard of crops. However, that system has some problems such as it cannot notify the voltage which occasionally drops. Besides, the proprietors of the fence need to check the voltage yet they can't know it without going there .An electrified barrier the executives framework we create utilizes remote correspondence, and it empowers the proprietors to know the voltage and the condition of the electrified barrier and screen it from distant areas securely. An electrified barrier framework utilizing remote organization innovation has been created. The framework comprises of a few eyewitnesses and a showcase, the ranchers can quantify voltage at the fence, and have a capacity to show it.The observers transmit the voltage with the direction of thevoltage leak to the display. The display shows the received data and the owners can know the state of the electric fence.

In this project, a novel method for object recognition based on hybrid local descriptors is presented. This strategy uses a blend of a couple of approaches (SIFT - Scale-invariant component change, SURF - Speeded Up Robust Features) and comprises of second parts. The appropriateness of the introduced cross breed strategies are exhibited on a couple of pictures from dataset. Dataset classes address enormous creatures arranged in Slovak country, to be specific wolf, fox, earthy colored bear, deer and wild pig. The introduced strategy might be likewise utilized in different regions of picture characterization and highlight extraction. The test results show, that the blend of nearby descriptors has a constructive outcome for object acknowledgment.

## III. PROPOSED ALGORITHM

A. *Design Considerations:*

The proposed system detects the wild animals which are very harmful to human kind using deepconvolution neural network.After detecting the animal thesystem produceawarning sound. So that many lives can be saved and also animals can be chased without harma and then the image of the animal and the alert message is sent to cloud and viewed In the application

- Module 1:Training the dataset to create a model file using D-CNN
- Module 2 :Capturing the video feed and convert it in to frames for analysing
- Module 3:The pocessed image is compared with DCNN model file
- Module 4:The animal is classified and the image is sent to cloud
- Module 5:The result is displayed in application

System Flow Diagram

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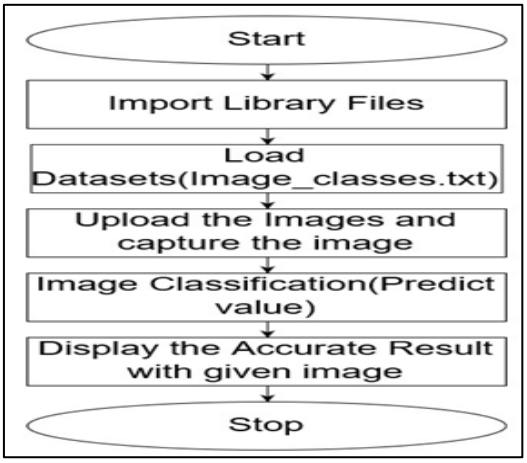



B. *Description of the Proposed Algorithm:*

*1)Import the Required Libraries*

In this module, all the required libraries are imported into the package

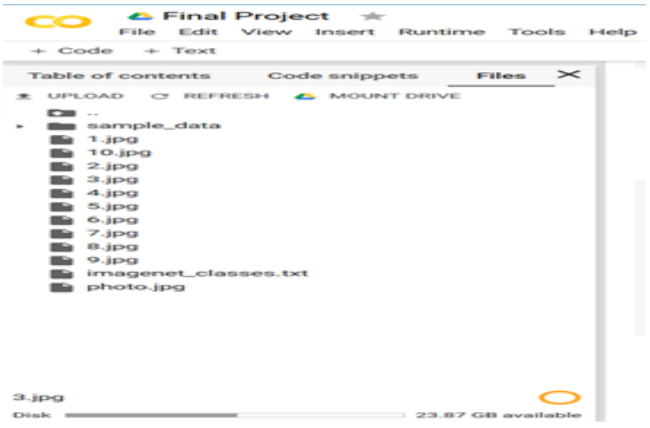
- google.colab.output
- IPython.display
- torchvision
- pillow(PIL)
- matplotlib
- matplotlib.image

*2)Load the Datasets*

In this module, the following datasets are loaded from the disk :
image_classes.txt
using open() method

*3)Upload the Images and Capture the Image*

Download the images (animals, fruits, birds, vegetables, things) from internet and upload the images in the Colab research environment




*4) Image Classification (Predict Value)*

With Help of dataset it can be classified the image
For example:
Upload the image “lion.jpg” it will classify the image with the help of dataset and give the result in the name of the image and percentage matched.

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*1) 5) Display the Accurate Result with Given Image*


## IV. SIMULATION RESULTS

MODULE RESULT:

- INPUT GIVEN

OUTPUT:

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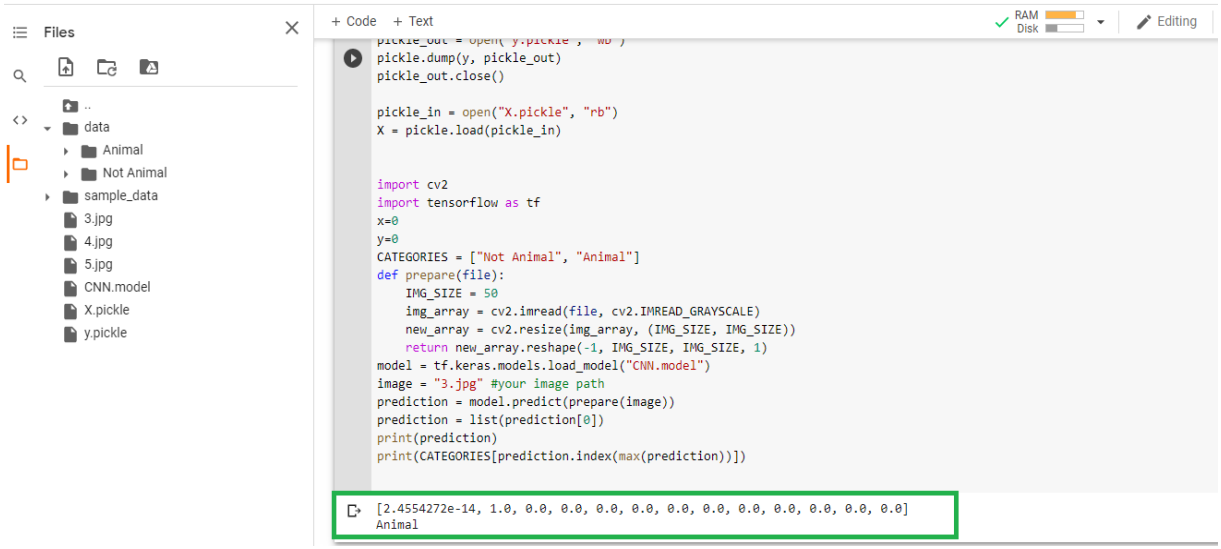
INPUTS GIVEN:

OUTPUT:




## V. CONCLUSION AND FUTURE WORK

Use of image signal processing for tracking of wild animals makes it harmless and much more effective than the conservative methods like Electric fences, RFID and LF tags. Also, the future scope of this project can be extended to various purposes like roadside safety of travellers from wild animals in forest bound roads.

This unique paper is constrained to figuring out the wild animals the use of photograph sign processing and broadcasting the equal records to woodland officials and villagers. But the ensuing movements like sedating the wild animal might want human intervention. In future along with identification of wild animals, control measures like sedating based on animal type can be implemented with more real time data and advanced sensors and systems which would make this technique completely automated without any manual intrusion.As shown in the implementation details, system is trained with more input images in the training phase and the testing phase also we tested with new input image and system can able to detect recognize it successfully with more exactness. The outputs proven withinside the implementation phase absolutely indicates the machine effectively detects classify as objects. In destiny we may want to teach with greater styles of enter records to teach and trying out with new records kind greater absolutely.

**FUTUREWORK**

This particular paper is limited to identifying the wild animals using image signal processing and broadcasting the same information to forest officers and villagers. But the consequent actions like sedating the wild animal would need human intervention. In future along with identification of wild animals, control measures like sedating based on animal type can be implemented with more real time data and advanced sensors and systems which would make this technique completely automated without any manual interference.

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## REFERENCES

1. J. Sreemathy, I. Joseph V., S. Nisha, C. Prabha I., and G. Priya R.M., "Data Integration in ETL Using TALEND," 2020 6th International Conference on Advanced Computing and Communication Systems (ICACCS), Mar. 2020.
2. V. Niranjani and N. S. Selvam, "Overview on Deep Neural Networks: Architecture, Application and Rising Analysis Trends," EAI/Springer Innovations in Communication and Computing, pp. 271–278, 2020.
3. Poonkodi.R, N. Saravana Selvam,''Implementation of Wireless Sensor's Integration Possibilities and Attacks on Wireless Network Control'',International Journal of Recent Technology and Engineering (IJRTE)',ISSN: 2277-3878 (Online), Volume-8Issue-4, November2019.
4. P.Chitra R.Geethamanih T.C.Manjunathi ,"Sentiment analysis of product feedback using natural language processing",Materials Today: Proceedings,Elsevier (Online) ,DOI.org/10.1016/j.matpr.2020.12.1061
5. P. John Augustine, K. Bommanna Raja , "M-Tree based on the Fly Automatic Webpage Adaptation for Small Display Device" published 2016 in Asian Journal of Research in Social Sciences and Humanities volume 6 issue 10 on page 2030.

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