**Digital Naturalist - AI Enabled tool for Biodiversity Researchers LITERATURE REVEIW**

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**Survey 1: Date: 29. 10. 2022**

**Convolution Network based Animal Recognition using YOLO and Darknet**

**(2021).**

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This research work has developed YOLO model to identify the animal present in the image given by user. The algorithm used in YOLO model is darknet, which has a pretrained dataset. Machine learning has been applied to image processing. The image of animal will be give as input, then it will display the name of the animal as output by using YOLO3 model. The detection is done by using a pre-trained coco dataset from darknet. The image is broken into various length and widths based on the given input image. Here for recognition of image, YPLO3 model is using recognizer deep learning package. The overall performance of the model is based on the different training images and testing images of the dataset. The detection is done by using a pre-trained coco dataset from darknet.

**Survey 2:**

**Paul Viola, Michael Jones (2001)**

**‘Classification and Grading of Image Using Texture Based Block-Wise Local Binary Patterns’**

Paul Viola, Michael Jones et al., used global textural feature viz., Local Binary Pattern for feature extraction. Initially, an image is divided into k number of blocks. Subsequently, the texture feature is extracted from each k blocks of the image. The k value is varied and has been fixed empirically. In their approach experimentation purpose, the bird dataset is created using 4 different classes and experimentation is done for whole image and also with different blocks like 2, 4 and 8. Grading of Bird is done using Support Vector Machine classifier. Finally, the performance of the grading system is evaluated through metrics like accuracy, precision, recall and F-measure computed from the confusion matrix. Their experimental results show that most promising result is obtained for 8 blocks of the image.

**Survey 3:**

**Gary Bradski and Adrian Kaehler (2008) ‘Texture Classification from Random Features’**

In this research they presented an approach for texture classification based on random projection, suitable for large texture database applications. A small set of random features are extracted from local image patches and those features are embedded into a bag-of-words model to perform texture classification.

**Survey 4:**

**Schmid Huber, J. (2015)**

**‘Adapted approach for Species Classification’**

In this work, an adaptive approach for the identification of species is proposed and experimentally validated. Image processing technique is followed. In the first step K-Means clustering is used for image segmentation, in the second step some state of art features is extracted from segmented image, and finally images are classified under one of the classes by using multi-class support vector machine. The classification accuracy is achieved up to 89%.

**Survey 5:**

**Haibing Wu and Xiaodong Gu (2015)**

**‘Detection And Classification of images using Detection Line’**

In this study, they present an application of neural networks and image processing techniques for detecting and classifying images. Images were segmented by a detection line (DL) method. Six geometric features (i.e., the principal axis length, the secondary axis length, axis number, area, perimeter and compactness of the image), 3 color features (i.e., the mean gray level of image on the R, G, and B bands. The methodology presented herein effectively works for classifying image to an accuracy of 90.9%.

**REFERENCES**

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