Ahmedabad University

Course Name: Machine Learning

Weekly Report: 4

Group No: 7

Submitted to faculty: Prof. Mehul Raval

Date of Submission: 29 March 2025

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⇒ **Current week progress:-**

⇒ In this week, we have searched on the image processing methods and started to implement this in the code. Last week, we got the whole dataset. We have started to import that dataset in our programming background. We have imported numpy, pandas, and openCV for the image processing, and data manipulation. Other libraries that we have used pytorch and torchvision for the deep learning frameworks. For the mugger detection and upper layer feature extraction, we have imported Detectron2, MMDetection and scikit-image as image processing tools, and another for robust object detection framework. For advanced image augmentation, we will use imgaug as the additional image augmentation methods. For the biometric feature extraction, we have imported openface for dorsal scute pattern features extracting of the mugger crocodile.

⇒ These are libraries related to the image processing that we have imported. In that, we have faced some issues with difficulty in installing some libraries of feature extraction. That we have solved some errors and are trying to solve the remaining. Now we are implementing biometric identification in programming. We are going through some syntaxes related to our coding that we have to use. This week, we are trying to build the perfect output to detect the dorsal scute patterns of the mugger and analyse the biometric identification.

- **Next Week Plan:**

⇒ In the next week, we are planning to solve some queries that come in our programming section. Because, some remaining installation of libraries give some difficulties in running the program. Therefore, it is not giving the perfect detection of mugger crocodiles among the other crocodiles by the patterns.

⇒ For the correct output, we will also find some necessary syntaxes, libraries to complete and implement kNN, XGBoost and SVM in our code and also we will go through ORB, SIFT and HOG for feature extraction and importing PCA, t-SNE libraries visualization of 2D into 3D, which could help in the analyze the whole frame in 3D form. So, we will plan to build the whole ML based biometric identification and complete the project.