**ABSTRACT**

**IEEE BASE PAPER ABSTRACT:**

Now a days bird population is changing drastically because lots of reasons such as human intervention, climate change, global warming, forest fires or deforestation, etc., With the help of automatic bird species detection using machine learning algorithms, it is now possible to keep a watch on the population of birds as well as their behavior. Because manual identification of different bird species takes a lot of time and effort, an automatic bird identification system that does not require physical intervention is developed in this work. To achieve this objective, Convolutional Neural Network is used as compared to traditionally used classifiers such as SVM, Random Forest, SMACPY. The foremost goal is to identify the bird species using the dataset including vocals of the different birds. The input dataset will be pre-processed, which will comprise framing, silence removal, reconstruction, and then a spectrogram will be constructed, which will be sent to a convolutional neural network as an input, followed by CNN modification, testing, and classification. The result is compared with pre-trained data and output is generated and birds are classified according to their features (size, colour, species, etc.)

**OUR PROPSOED ABSTRACT:**

It is now vital to monitor the consequences of human activity on the environment before it results in the environment suffering irreparable harm. Monitoring animal breeding behaviour, biodiversity, and population dynamics is one way to keep tabs on these consequences. Birds are among the greatest species to observe since they are frequently the most responsive to environmental changes, such as deforestation or forest fires. According to estimates, 13% of all bird species, or around 1,370 species, are endangered. Despite being widespread, many bird species are challenging for humans to recognise. Up until now, tracking the birds was done manually by professionals, which is time-consuming and not a practical way. In order to solve this problem and aid ecologists, we are suggesting a deep learning technique to identify the species of bird based on audio recordings. We want to use the most up-to-date Artificial Neural Networks model (ANN model) for automatic bird species identification utilising audio inputs to accomplish this goal. In this study, we aimed to increase the modern bird species classifier's classification accuracy. This indicates that the accuracy for training was 100% and the accuracy for validation was 97%. As a result, we can say that ANN can easily defeat the current implementation model and effectively identify the bird species.