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Bird Species Identification

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ABSTRACT

Today, many species of birds are rarely found, and it is difficult to classify bird species when found. For example, for different scenarios, birds come with different sizes, forms, colors and from a human viewpoint with different angles. Indeed, the images show different differences that need to be recorded as audio recognition of bird species. It is also easier for people to identify birds in the pictures. Today, using deep convolutional neural network (DCNN) on Google Net framework bird species classification is possible. For this experiment, a bird image was converted into a gray scale format that generated the autograph. After examining each and every autograph that calculates the score sheet from each node and predicts the respective bird species after the score sheet analysis. Keywords: Keywords—, deep learning, convolutional neural networks

Keywords: Solar Air Heater, Solar Energy, Solar Radiation, Transient Thermal Analysis.

1. Introduction

Nowadays, Identification of bird species is a difficult activity sometimes leading to uncertainty. Birds allow us to search certain organisms within the environment as they respond quickly to changes in the atmosphere. But collecting and gathering bird information requires huge efforts by humans as well as being a much more expensive method. In such situations, a robust system must be in place that will provide large-scale bird information processing and serve as a valuable resource for scholars, government agencies and so on. Consequently, naming bird species plays a significant role here for determining which species belongs to a specific image of birds.

2. About the Project

The objective of this project is to contribute a solution to the problem of identification of bird species by providing a quality application to satisfy the same. To identify any bird the image of the bird is uploaded and the system filters through the set of data provided and finds a match and lists its details that include scientific and basic information. There is also an alternate way of searching for a bird if only its name is known. The name of the bird to be searched is given in the search box and the system displays images and details under its name after filtration through the provided datasets. If there are no details updated so far about any particular bird the details and images of it will be collected in a form of quiz and will be provided to the department of ornithology for further research about the particular kind.

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3. Problem Statement

Nowadays we find a lot of birds in our day-to-day life and find it difficult to segregate its kind, know its type, wonder where it's from and etc.. There are many applications which identify the bird through its voice and image. But still, ornithologists are finding it difficult to get a quality application that provides necessary details for betterment in knowing better details about a bird they could see.

4. Scope

It is important to common people and even fresher's of the department of ornithology to identify a bird they encounter in their day-to-day life. Through this system we can discover more new species of bird and can identify those that are in the verge of extinction and save them. smooth and faster operations at all levels.

5. System Analysis

System analysis is a problem solving technique that decomposes a system into component pieces of purpose of studying how well those component parts work and interact to accomplish their purpose the following chapter provides the detail description of the existing system. It also provides an overview of the proposed system and feasibility of the bird species identification system.

6. System Study

In system study we will go to existing system, proposed system and feasibility study of the application.

6.1 Existing System And Drawbacks

The existing system of bird species identification consists of many pre-available systems that identify birds through its voice and image. But those lacks in quality by not providing sufficient details regarding the bird that is under investigation. Which ornithologists finds as a demerit. The audio processing technique allows for the detection of birds by recording the audio signal. But the processing of such information becomes more complicated because of in the environment; the mixed sounds like insects, real world objects, etc. Usually, people are more effective at find images than audios or videos. So, it is preferable to use an image over audio or video to classify birds.

6.2 Proposed System and Advantages:

The proposed system of bird species identification uses the Convolutional Neural Network (CNN) concepts to identify the species of the birds being searched for using its images that are uploaded instantly. The system undergoes multiple filtration and series of algorithm to find the match of data of the bird under investigation. The further result that will be displayed consists of information like its scientific name, family, gene and further scientific information. Additionally it displays basic information about the bird like its nativity, food it eats, hotspot places of that particular breed, the climate it lives in, and etc..

7. Feasibility Study

An analysis and evaluation of a proposed project to determine if it is technically feasible, is feasible within the estimated cost, and will be profitable. Feasibility studies are almost always conducted where large sums are at stake. A feasibility study aims to objectively and rationally uncover the strengths and weaknesses of an existing system, the resources required to carry through, and ultimately the prospects for success.

8. System design

System design is the process of defining the architecture, components, modules, interfaces, and data for a system to satisfy specifies requirements. System design could be as seen as the application of systems theory to product development. It is about the physical organization of the system. It is demonstrated with the help of UML Diagram or block Diagrams etc. it is explained in a pictorial representation.Sequence Diagram for Brain Tumor Detection Using Convolutional Neural Networks.

Networks a Sequence Diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario. Sequence Diagrams are typically associated with use case realizations in the Logical View of the system under development. Sequence Diagrams are sometimes called event Diagrams or event scenarios.

Database design is the organization of data according to the database model. The designer determines what data must be stored and how the data elements interrelate. With this information we can fit the data into the database. It involves classifying data and identifying the interrelationships. It basically involves tables: lists of rows and columns. Each row is more correctly called a record and each column a field. A record is a meaningful and consistent way to combine information about something. A field is a single term of information- an item type that appears in every record. A key is a set of columns that is used to uniquely identify a record in a table. It is used to fetch or retrieve records/ data-rows from data table.

Certain principles guide the database design process. The design process consists of the following steps:

- Determining the purpose of the database
- Find and organize the information required
- Divide the information into tables
- Turn information items into columns
- Specify primary keys
- Set up the table relationships
- Refine your design
- Apply the normalization rules
- A good database design is therefore the one that,
 - Divides the information into subject-based tables to reduce redundant data.
 - Provides access with the information it requires to join the information in the tables together as needed.
 - Helps support and ensure the accuracy and integrity of the information.
 - Accommodates the data processing and reporting needs.

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