 IBM SMARTINTERNZ

HACK CHALLENGE - 2022

**Problem Statement** :

Applying AI To Help People Improve Their Lifestyle.

1. **INTRODUCTION** 
   1. **OVER VIEW**

App-Braniax is developed on Android Studio (Dolphin) by Java & Kotlin Programming language, which has series of modules that enhance human beings by improving their lifestyle in an efficient way.

The main objective of this app is to make things easy for humans to analyze and understand the complex reasons which further made simpler.

This app consists of the following modules built in them:

* Image Classification
* Object Detection
* Face Detection
* Audio Classification
* Bird Sound Identification
* Flower Identification
* Spam Detector

Each module performs various tasks when they are selected.

For example,

Image Classification classifies the images in around 400 plus labels and produces a concrete output to the user by analyzing the things that are labelled or captured and provides the things that are found on that image.

* 1. **PURPOSE**

The major purpose of developing APP BRANIACS is for the easy identification and simple analysis of the things and object people use in their day-to-day life. This app helps user to find information about the thing, object, audio, sound detection, spam just by labeling and scanning them through THE APP BRANIAX. This app helps people in various age group of people to identify and classify them easily. Where this app will be very much effective among children to access and learn easily through this app.

1. **LITERATURE SURVEY**
   1. **EXISTING PROBLEM**

Object detection and recognition are important problems in computer vision. Since these problems are meta-heuristic, despite a lot of research, practically usable, intelligent, real-time, and dynamic object detection/recognition methods are still unavailable. This paper reviews the various aspects of object detection and the challenges involved. The aspects addressed are feature types, learning model, object templates, matching schemes, and boosting methods. Most current research works are highlighted and discussed. Decision making tips are included with extensive discussion of the merits and demerits of each scheme.

**2.2 PROPOSED SOLUTION**

The user can understand and analyze the objects or things which are seen in front of them by the following enlisted modules

* Image Classification
* Object Detection
* Face Detection
* Audio Classification
* Bird Sound Identification
* Flower Identification
* Spam Detector

1. **THEORITICAL ANALYSIS** 
   1. **BLOCK DIAGRAM**

Timeline

Description automatically generated

**3.2 SOFTWARE DESIGN**

* ANDROID STUDIO ( DOLPHIN )
* KOTLIN PROGRAMMING LANGUAGE
* JAVA PROGRAMMING LANGUAGE
* CONCEPTS OF AI & ML
* CONCEPTS OF NEURAL NETWORK
* CONCEPTS OF DEEP LEARNING

**4. EXPERIMENTAL INVESTIGATIONS**

This app confines people who can’t analyze or understand the objects in front of them. So to provide simple concrete output to user under various detections and analysis of images, objects, and audios. It is achieved by following and adapting the above concepts distinctively.

**Image Classification**

Image Classification classifies the images in around 400 plus and produces a concrete output to the user by analyzing the things that are labeled or captured and provides the things that are found on that image.

**Flower Identification**

The app relies on the observation of flower images, the user may choose the flower characters that will guide the identification process. Here only datasets of five flowers were given including roses and daisies which identifies the color pattern and produces an probability percentage to the user as output by identifying the flower.

**Face Detection**

Face Detection can identify the large amount of people in an image and produces an concrete output to the user by the location of their faces with corresponding labelling.

**Spam Text Detector**

It is a custom built to identify the spam comments which the users might be trying to send or post or comment on your app so that you can easily detect them and block them before they comment it.

**Object Detection**

It can identify the large number of objects in an image and produces an concrete output to the user by the location of their labels with corresponding labelling.

**5.FLOWCHART**

Timeline

Description automatically generated

**6.RESULT**

**SCREENSHOT OF OUTPUT:**

Application

Description automatically generated with medium confidence

**7.ADVANTAGES & DISADVANTAGES**

* **ADVANTAGES**

1. As object detection is inter-linked with similar computer vision techniques as image segmentation and image recognition that assist us to understand and analyze images and objects.
2. Image Localization will specify the location of single object in an image whereas Object Detection specifies the location of multiple objects in the image.
3. People of any age group can access this more efficiently.

* **DISADVANTAGES**

1. Viewpoint Variation.

An object viewed from different angles may look completely different. (Not in all cases)

1. Many objects of interest are not rigid bodies and can be deformed in extreme ways.
2. classifying an object and determining its position.

**8. APPLICATION**

* To identify images
* To detect an object
* To block the spam messages
* For face detection
* To identify flowers
* For audio classification

**9.COCLUSION**

To improve the lifestyle of human being various apps were developed or created, Here the APP BRANIAX plays an major role in improving the quality life of human beings by interacting and analyzing with the users to produce an expected and concrete output

**10. REFERENCE**

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3. https://developers.google.com/learn/pathways/on-device-ml-5

4. https://developers.google.com/ml-kit/vision/face-detection

5. <https://developers.google.com/learn/pathways/get-started-text-classification-web/>

6. <https://www.blog.google/technology/ai/competition-identify-bird-calls-using-machine-learning/>

7. https://codelabs.developers.google.com/

**APPENDIX**

**Source Code ( GITHUB LINK ) :** <https://github.com/smartinternz02/SBSPS-Challenge-9661-Applying-AI-to-Help-people-improve-their-lifestyle.git>

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