

ARTIFICIAL INTELLIGENCE BASED IMAGE RECOGNITION

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ABSTRACT : The leading intention of the project is to provide a new approach for image recognition using Python and its library in which we extensively use python libraries like numpy, Bing image downloader, matplotlib, sklearn and several others as well for the use of machine learning and its properties like support vector machine (SVM). An image recognition technique utilizing a info of image characteristics is introduced. This{method} is totally different from chemist image method which needs an outsized quantity of knowledge of coaching set pictures in terms of the dimensions of every image and also the what reasonably pictures are they very. Especially, this system is helpful for recognizing pictures that have fastened form and structure like paintings and documents. Then we have a tendency to create use neural network that processes the individual pixels of a picture.

1. INTRODUCTION

Image recognition could also be a portable compute necessity technique that allows computers, laptops and other similar electrical or electronic devices or system to interpret and reason what we all “see” in footage or canned as in[1].usually cited as “picture categorization” or “picture tagging”, this crucial task could also be a hermeneutical half find several portable computers, laptops and other similar electrical or electronic devices or system learning anomalies. However, also, can picture recognition really work? What area unit the assorted perspective what area unit its probable pros and cons, and therefore the approach could you see it in your trade? In this confidant, everyone understands rejoinder to any or entire queries and a great deal of.

whether or not or not your associate degree knowledgeable expert system plan error

handler all in all execution, an initiator desirous to acquire a great deal of, or a by-product supervisor desirous to traverse what’s realizable with laptops, computers and other similar mind of electrical or electronic devices or systems and image recognition, this confidant is for you.[5] projected that Image recognition could also be a laptop, computers and other similar electrical or electronic devices or systems chore that operates to know and reason numerous parts of pictures and/or canned.

Image recognition proto type unit of measurements instructed to need pictures an input and an output tags narrating the picture. The group of achievable output tags unit of measurements cited as target classes as given by [8] and in conjunction escorted by a prophesy unit, picture recognition prototype also can result a confidence since related to but certain the prototype is that a picture be in to a unit.

For cite, if we required to form a picture recognition prototype that instinctively finds whether or not or not an image dog was terribly} very given image, the pipeline would, loosely, seem as if this: Image recognition prototype instructed on image that square measure tagged as “cricket bat” or “not a cricket bat”

as additionally exemplified by [7]Prototype
Input: Image or picture frame Prototype
Output: Unit name (i.e. cricket bat) with a confidence snice that results the prospect of that picture having that unit of object.[6] & [10] outlined Picture recognition is also an extensive and far-reaching chore that’s gives us an idea about picture recognition. As, such, there are a unit mind of main features that needs to be created once all in all what resolution is foremost for the matter we’re engaging.

In general, we tend to square measure able to disjoint picture recognition into two different anomalies: single and multiclass recognition. In one single unit picture recognition, prototypes result just one tag per picture.

If we’re employment a cricket bat or monitor recognition prototype, a picture with a cricket bat and a monitor will still alone be appointed one tag. In cases where alone two units of measurement involved(cricket bat; not a cricket bat), we’ve got a bent to hunt recommendation from this.

2. LITERATURE SURVEY

1) EDGE DETECTION TECHNIQUES FOR IMAGE SEGMENTATION

Interpretation of image contents is one of the objectives in computer vision specifically in image processing. In this era it has received much awareness of researchers. In image interpretation the partition of the image into object and background is a severe step. Segmentation separates an image into its component regions or objects. Image

segmentation t needs to segment the object from the background to read the image properly and identify the content of the image carefully. In this context, edge detection is a fundamental tool for image segmentation. In this paper an attempt is made to study the performance of most commonly used edge detection techniques for image segmentation and also the comparison of these techniques is carried out with an experiment by using MATLAB software.

2) Subspace Methods for Pattern Recognition in Intelligent Environment

This research book provides a comprehensive overview of the state-of-the-art subspace learning methods for pattern recognition in intelligent environment. With the fast development of internet and computer technologies, the amount of available data is rapidly increasing in our daily life. How to extract core information or useful features is an important issue. Subspace methods are widely used for dimension reduction and feature extraction in pattern recognition. They transform a high-dimensional data to a lower-dimensional space (subspace), where most information is retained. The book covers a broad spectrum of subspace methods including linear, nonlinear and multilinear subspace learning methods and applications. The applications include face alignment, face recognition, medical image analysis, remote sensing image classification, traffic sign recognition, image clustering, super resolution, edge detection, multi-view facial image synthesis.

3) A Study Of Image Segmentation Algorithms For Different Types Of Images Different Types Of Images Different Types Of Images

In computer vision, segmentation refers to the process of partitioning a digital image into multiple segments (sets of pixels, also known as super pixels). Image segmentation is typically used to locate objects and boundaries (lines, curves, etc.) in images. More precisely, image segmentation is the process of assigning a label to every pixel in an image such that pixels with the same label share certain visual characteristics. The result of image segmentation is a set of segments that collectively cover the entire image, or a set of contours extracted from the image. Each of the pixels in a region are similar with respect to some characteristic or computed property, such as color, intensity, or texture. Due to the importance of image segmentation a number of algorithms have been proposed but based on the image that is inputted the algorithm should be chosen to get the best results. In this paper the author gives a study of the various algorithms that are available for color images, text and gray scale images.

3. EXISTING SYSTEM:

Image recognition is a portable computer need approach that enables computers, laptops, and other comparable electrical or electronic equipment or systems to interpret and reason what we all "see" in footage or photographs as in. Feature extraction and representation, often known as "image categorization" or "picture tagging," is an important stage in multimedia processing. The topic of extracting ideal features that can accurately capture the fundamental content of images remains a difficult one in computer vision. However, in recent decades, virtually little research has focused on this issue.

Image recognition as a part of doing something extraordinarily by getting known to a particular kind of image. Picture recognition prototype also can result a

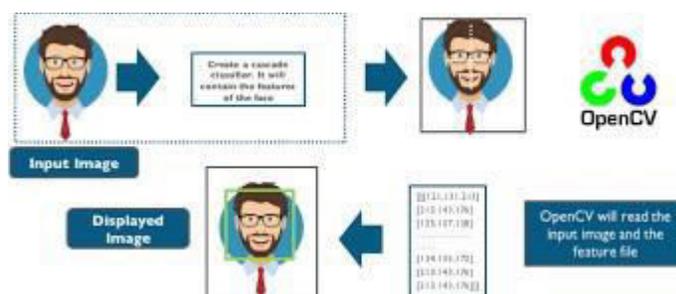
confidence snick related to but certain the prototype is that a picture be in to a unit

4. PROPOSED SYSTEM:

In this phase we will be going under various processes like detecting image, recognizing image. applying the right algorithm to train the data sets and finally uploading the datasets thereby recognizing images. we have some datasets of images of a particular image or object to which we are going to recognize its name so, first to fall we make us of Bing image downloader through this we can download any number of datasets images as we want and then after that by making use of numpy, matplotlib and sklearn we analyze the datasets of images and done numerical computations and after generating error matrix we can simply tell the name of image as predicted output with more accuracy.

This system extracts the feature from the satellite image using the satellite image as an input value and performs the classification. It conjointly to produce extremely fast systems to come up with image processing continuing with picture.

5. SYSTEM ARCHITECTURE:



6. IMPLEMENTATION:

User:

The User can register the first. While registering he required a valid user email and mobile for further communications. Once the user register then admin can activate the user. Once admin activated the user then user can login into our system.

User can upload the dataset based on our dataset column matched. For algorithm execution data must be in float format. Here we took numpy,matplotlib and sklearn analyze the dataset of images and done. User can also add the new data for existing dataset based on our Django application.

Prediction in the web page so that user can write the review after predict the review that will display results depends upon review like positive, negative or neutral.

Admin:

Admin can login with his login details. Admin can activate the registered users. Once he activate then only the user can login into our system. Admin can view the overall data in the browser. All algorithms execution complete then admin can see the overall results in web page.

Data Preprocessing:

A dataset can be viewed as a collection of data objects, which are often also called as a records, points, vectors, patterns, events, cases, samples, observations, or entities. Data objects are described by a number of features that capture the basic characteristics of an object, such as the mass of a physical object or the time at which an event occurred, etc. Features are often called as variables, characteristics, fields, attributes, or dimensions. The data preprocessing in this forecast uses techniques like removal of noise in the data, the expulsion of missing information, modifying default values if relevant and grouping of attributes for prediction at various levels.

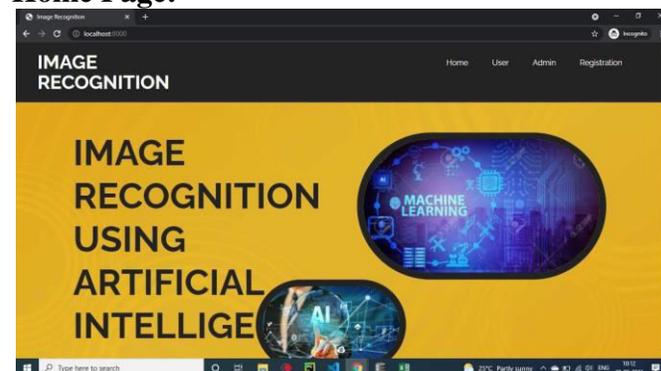
Machine learning:

Based on the split criterion, the cleansed data is split into 60% training and 40% test, then the dataset is subjected to machine learning classifiers such as (Support Vector Machine (SVM) for handling all the proper implementations that are going to do this in our project. AI and deep learning solutions supported the most recent analysis in image

process and victimization frame work like bring image download numpy and sklearn

7. SCREEN SHOTS

Home Page:



Client Side Results

S.No	File Name	Results	Date	Image	Download
1	L_GALDp.jpg	['doctor', 'fighter', 'engineer', 'actor', 'fighter', 'actor']	Sept. 28, 2022, 7:10 am		Download
2	doctor-01.jpg	['doctor', 'actor', 'fighter', 'engineer', 'actor']	Sept. 29, 2022, 4:18 am		Download
3	fighter-01.jpg	['fighter', 'actor', 'engineer', 'actor', 'fighter', 'actor']	Sept. 29, 2022, 4:48 am		Download

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8. CONCLUSION

With the assistance of deep learning algorithm and neural networks, machines may be instructed to examine and interpret pictures within the manner needed for a specific task, Progress within the implementation of AI-based image process is spectacular and opens a large vary of opportunities in fields from medication and agriculture to retail and enforcement. Apriority specialists from the substitute intelligence team are extraordinary interested by AI and machine learning, therefore we tend to keep track of the most recent enhancements in AI powered image process and use this information once performing on our AI comes

9. FUTURE ENHANCEMENT

Image recognition system can be applied in the area of surveillance system, face recognition, fault detection, character recognition etc. The objective of this thesis is to develop an object recognition system to recognize the 2D and 3D objects in the image. The performance of the object recognition system depends on the features used and the classifier employed for recognition. This research work attempts to propose a novel feature extraction method for extracting global features and obtaining local features from the region of interest. Also the research work attempts to hybrid the traditional classifiers to recognize the object.

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