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A web based application for authenticating multiple objects on shopping portal

Nikita Ausarkar (pursuing Bachelor Engineering IT)
Tariq Shaikh(pursuing Bachelor Engineering IT)
Hetal Gulhane(pursuing Bachelor Engineering IT)
Assistant Professor Vinita Bhandiwad
Vidyalankar Institute of Technology, Mumbai

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ABSTRACT: It is a web based application. The basic idea is that customer's can buy and sell products using online. The main objective of this application is to make it interactive and user friendly. It would make searching, viewing and selection of a product easier. It contains a sophisticated search engine for users to search for products specific to their needs. The user search for the product interactively in a very easy and convenient way and then the application would refine the product as per the user's requirement. The main emphasis of this web based application is to provide the users/customers an interactive or an easy user friendly search engine. It is a web shopping that enables the day-day sales function. This web based application will be useful to anyone who wants to buy and sell items using internet.

KEYWORDS –*Image Detection , Buying And Selling Products , Object Recognition*

I. INTRODUCTION

The aim of this project is to provide a user friendly application for online shopping. It is developed using HTML5, JavaScript, CSS, PHP and Python. The application will be very useful for providing the proper reply of details about any object in the system.

1.1 Goal

Shopping has long been considered a recreational activity by many. Shopping online is no exception. The goal of this application is to develop a web based interface for customer. The system would be easy to use and hence make the shopping experience pleasant for the users. The goal of this application is:

• To develop an easy to use web based interface where users can search for products, view a complete description of the products and order the products.

• A search engine that provides an easy and convenient way to search for products specific to their needs. The search engine would list a set of products based on the search term and the user can further filter the list based on various parameters.

• A user can view the complete specification of the product along with various images.

1.2 Need of the application

There are numbers of Online Shopping websites offering buying and selling of products to meet the shopping interests of large number of customers. These online marketplaces have thousands of products listed under various categories.

II. LITERATUREREVIEW

In paper [1], Author: Hasan UCUZAL ; Arş. Gör. İpek BALIKÇI ÇİÇEK ; Arş. Gör. A. Kadir ARSLAN ; Cemil ÇOLAK had explained the object recognition is a computer vision technique for identifying objects in images or videos. Object recognition is an important output of deep learning and machine learning algorithms. For this purpose, open source, free and artificial intelligence based "Object Recognition Software" has been developed in order to perform object recognition operation easily. In creating this web-based software, Dark flow and Tensor flow libraries are used which are based on deep learning based Python programming language and allow the design of interactive web based applications. While performing object recognition analysis in the developed software, CNN (Convolutional Neural Networks) multiple convolution layers are uncovered hidden and useful features obtained by various calculation methods. With CNN, objects are classified, objects are detected, and objects are determined by image segmentation. A pre-trained model from COCO, a large-scale object detection, partitioning and image dataset, is used to see how the web-based software

works and to evaluate the analysis outputs. Object recognition analysis is applied to ten images from this data set. According to the object recognition analysis results of the ten images, the calculated accuracy rates is examined and it is found that this web based software which is developed as open source and free access gives successful estimations in object recognition. In order to see how the web-based software works and to evaluate the analysis outputs, a pre-trained model was used from COCO (Common Objects in Context) which is a large scale object detection, partitioning and image dataset. Object recognition analysis was applied to ten images from this data set. When the accuracy ratio of the ten images calculated according to the object recognition analysis result is examined, it is determined that this web based software which is developed as open source and free access gives successful predictions in object recognition. The developed software is new user-friendly web-based software that can easily identify objects in images and discriminatory from each other objects. In the following studies, in order to increase the diagnostic accuracy of the objects in the images, it is suggested that the software that uses deeper neural networks should be developed and the necessary infrastructure to detect the defects in the medical images can be developed.

In paper [2], Author: Cong Tang , Yunsong Feng , Xing Yang , Chao Zheng , Yuanpu Zhou had explained the object detection based on deep learning is an important application in deep learning technology, which is characterized by its strong capability of feature learning and feature representation compared with the traditional object detection methods. The paper first makes an introduction of the classical methods in object detection, and expounds the relation and difference between the classical methods and the deep learning methods in object detection. Then it introduces the emergence of the object detection methods based on deep learning and elaborates the most typical methods nowadays in the object detection via deep learning. In the statement of the methods, the paper focuses on the framework design and the working principle of the models and analyzes the model performance in the real-time and the accuracy of detection. Eventually, it discusses the challenges in the object detection based on deep learning and offers some solutions for reference.

In paper [3], Author: Fatih Ertam , Galip AydınDeep learning is a subfield of machine learning which uses artificial neural networks that is inspired by the structure and function of the human brain. Despite being a very new approach, it has become very popular recently. Deep learning has achieved much higher success in many applications where machine learning has been successful at certain rates. In particular It is preferred in the classification of big data sets because it can provide fast and efficient results. In this study, we used Tensorflow, one of the most popular deep learning libraries to classify MNIST dataset, which is frequently used in data analysis studies. Using Tensorflow, which is an open source artificial intelligence library developed by Google, we have studied and compared the effects of multiple activation functions on classification results. The functions used are Rectified Linear Unit (ReLu), Hyperbolic Tangent (tanH), Exponential Linear Unit (eLu), sigmoid, softplus and softsign. In this Study, Convolutional Neural Network (CNN) and SoftMax classifier are used as deep learning artificial neural network. The results show that the most accurate classification rate is obtained using the ReLu activation function.

III. PROBLEM STATEMENT

3.1 Problem Definition

This project aims to computerize the process of buying and selling the resellable products online. The basic problems with the existing systems are the non-interactive environment they provide to the users. The main problem is to identify the required product since the search results are not accurate. It does not provide the search engine that would display the results without allowing the users to further filter the results based on various parameters. The description of the product is also limited or not related to the product. As it does not provide required result the process of searching the product will be time consuming.

3.2 Proposed Solution

The motive of this Online Shopping Web Application is to allow the user to provide interactive interface through which a user can interact with different areas of application easily. A search engine that provides an easy and convenient way to search for products specific to their needs. The search engine would list a set of products based on the search term and the user can further filter the list based on various parameters

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IV. PROPOSED SYSTEM

Flowchart and its explaination:

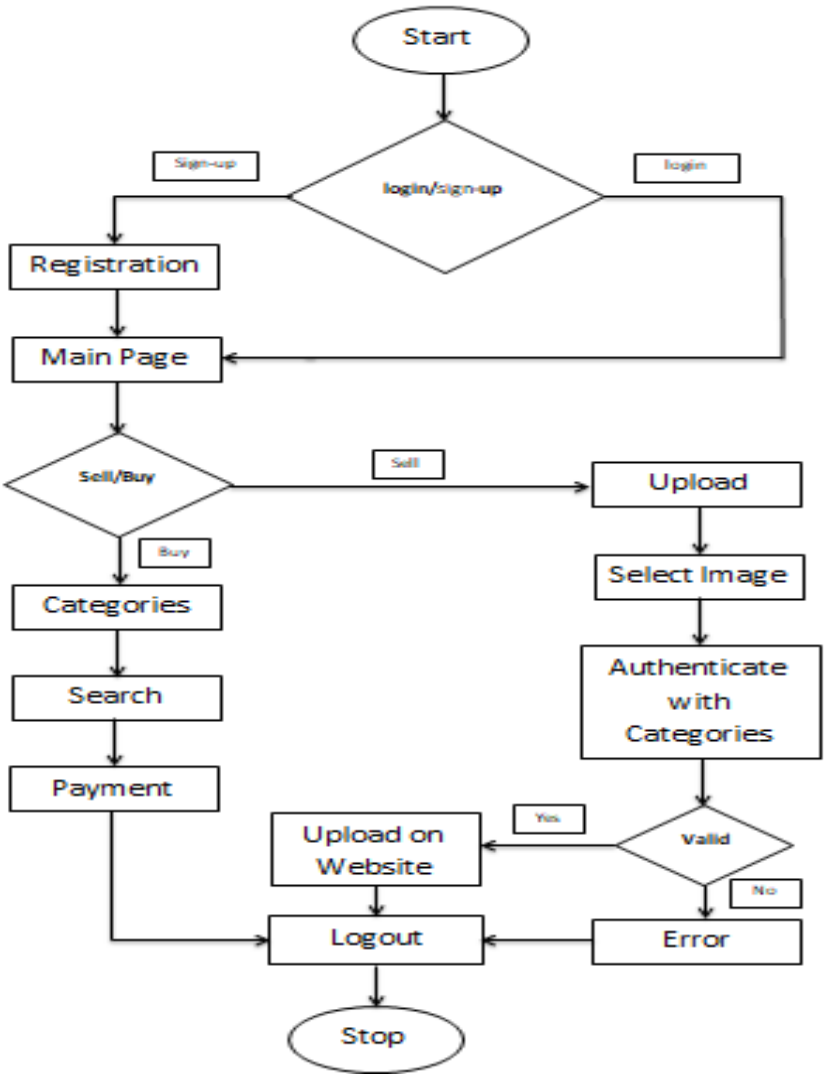

Fig 4.1 Flowchart

In the above proposed system the user will interact with three module Login/Signup, Buy and Sell. First user have to signup in the system and then login with the credentials. After login he will interact with two modules buy and sell. In buy module the product will be categories and search engine provides an accurate search result specific to user requirements. In upload module the user will upload image he/she wants to sell and with the help algorithm it will authenticate with categories. If the image is valid then it will uploaded on website or else it will throw an error message.

V. HARDWARE AND SOFTEWARE REQUIREMENTS

- **Hardware Requirements:**

Laptop- operating system: Windows

- **Software Requirements:**

Python3 And Xamp Server

VI. METHODOLOGY

The system after careful analysis has been identified to be presented with the following modules and roles. The modules involved are:

Module 1: Login/Signup

A new user will have to register in the system by providing essential details in order to view the products in the system. A user must login with his

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user name and password to the system after registration.

Module 2: Buy
When a user want to buy the product the user will select the category and search for the desired product and will have the detailed description of the particular product. After the user is satisfied of the product he will be able to order the product using payment gateway.

Module 3: Sell
When a user want to sell the product, he will upload the image from the device, as the image is uploading it will authenticate with categories using image processing. If the image is valid then it will be uploaded on the website or else the error message will be displayed.

VII. ANALYSIS

7.1 Process Model used for theProject

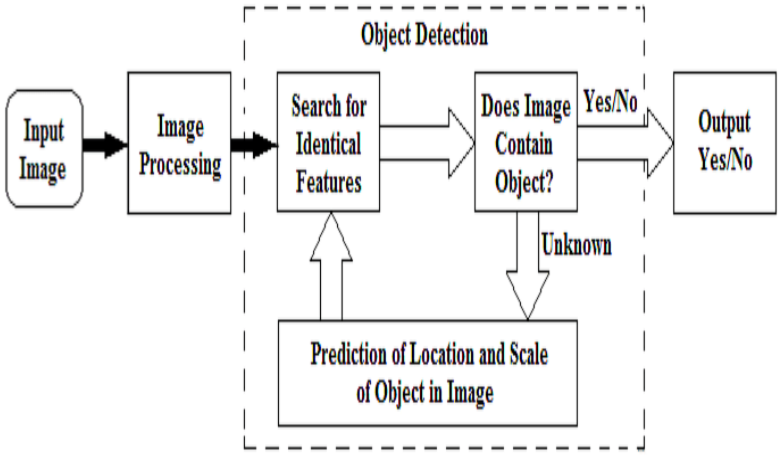

Fig 7.1.1 Process Model

Our Website is giving the users a platform where they can contact to each other to buy or sell the Products without any third party involved in it. In our Web Based System the users can buy or sell the Products. We will give the users to sell their products or else they can buy any products from all the categories that is available. When the users sell their products that time we will ask them to fill some details about the products that includes the category, images and description of that product and all fields are mandatory for users to fill so that the buyer can get the proper details and contact of the product and the person who want to sell that product. When the user uploads an image of the products in the backend we will resize that image and compress it by using various algorithms. Then when the user fills all the details that is required for uploading an image by user we will detect the object from that image using Tensor flow algorithm and will authenticate it with the category selected by user so that we can authenticate if that image belongs to that particular category or not and if not we will ask the user to fill the data again and throw an error message. When the image is proper then we will allow the user to upload it in that particular category section.

7.2FeasibilityStudy

1. **Technical feasibility:** Technical feasibility focuses on the technical resources (software and hardware) available and also helps to determine whether the technical team is capable of converting the ideas into working system.

2. **Economic feasibility:** This assessment typically involves a cost/ benefits analysis of the project. This project cost is effective.

3. **Legal feasibility:** The assessment involves whether any aspect of the proposal projects involves legal feasibility like protection of data, some algorithm etc.

4. **Operational feasibility:** It involves how the user needs can be meet by completing project, the time required, the deadline date etc.

5. **Behavioral feasibility:** The application requires no special technical guidance and all the views available in the application are self explanatory.

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