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UNCOVERING THE HIDDEN PRESSURE OF THE MUSHROOM KINGDOM: A CLASSIFICATION ANALYSIS

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ABSTRACT :

Mushroom is one of the fungi types' foods that has the most potent nutrients on the plant. Mushrooms have major medical advantages such as killing cancer cells. This study aims to find the most appropriate technique for mushroom classification, and mushroom will be classified into two categories, poisonous and non-poisonous. The proposed approach will implement a different techniques and algorithms like neural network (NN), Support Vector Machines (SVM), Decision Tree, and k Nearest neighbours (KNN), on dataset of mushroom images, where the dataset contains images with background and without background. These discoveries have practical ramifications for several applications involving mushroom identification and classification as well as advancements in the field of mushroom classification. This project serves as a practical demonstration of utilizing Python, Jupiter Notebook, and HTML for effective mushroom classification analysis, offering insights into both the technical implementation and the interpretability of results.

1. INTRODUCTION :

The purpose of this project is to conduct a classification analysis of the flora and fauna within the Mushroom Kingdom, a fictional world from a popular video game franchise. The primary goal is to uncover the hidden treasures of the Mushroom Kingdom by employing advanced machine learning techniques and exploring the taxonomy, characteristics, and relationships among its diverse species. Taxonomy and Classification: The project aims to categorize and classify the various species within the Mushroom Kingdom based on their shared attributes and characteristics. By applying machine learning algorithms, the project seeks to identify distinct clusters of species and reveal their taxonomic relationships. This classification process provides a systematic understanding of the Mushroom Kingdom's biodiversity and enables the identification of unique and rare species that may have been overlooked. Understanding Species Characteristics: Through the classification analysis, the project seeks to gain insights into the physical attributes, habitats, behaviours, and other relevant characteristics of the Mushroom Kingdom's flora and fauna. By extracting key features and analysing their influence on the classification process, the project aims to unravel the specific traits that distinguish different species. Understanding these characteristics can provide a deeper understanding of the Mushroom Kingdom's ecosystem and its functioning. Revealing Hidden Treasures: By employing advanced classification techniques, the project endeavours to uncover the hidden treasures within the Mushroom Kingdom. These treasures could include rare species, elusive organisms, or unique ecological phenomena that may have remained undiscovered or underexplored. Through the classification analysis, the project aims to shed light on these hidden gems and bring them to the forefront.

1.1Overview

The purpose of this project is to conduct a classification analysis of the Mushroom Kingdom's flora and fauna to uncover hidden greaves, understand species characteristics, reveal taxonomic relationships, gain insights into ecosystem dynamics, and inspire further research and conservation efforts. By utilizing advanced machine learning techniques, this project aims to provide comprehensive understanding of the rich and diverse world of the Mushroom Kingdom

1.2 Problem Statement and Objectives

The problem of identifying and classifying mushrooms in the Mushroom Kingdom has been angled through the use of classification analysis techniques. A model was developed using various lectures and characteristics of the mushrooms, which can accurately identify and categorize different species. This helps prevent health risks associated with consuming poisonous mushrooms and can uncover the diverse fungal ecosystem of the Mushroom Kingdom.

2. REVIEW OF LITERATURE

Mushroom is one among the most popular consumed food in India. In India people are cultivating mushroom as viable income source for their livelihood. Now-a-days deep learning is being applied to process big data and vision related applications. Recent smart devices can be utilized for automated edibility diagnosis of mushroom using deep convolution neural network (CNN) it has revealed a remarkable performance capability in convolution neural network (CNN) it has revealed a remarkable performance capability in all its sphere of research activities. DCNN works on static dataset. The models on which it applies will pose as well determine its requirement for training. This paper presents a classification tool for edibility detection of mushroom through deep CNN. Better performance is obtained by tuning the hyper-parameters and through adjustments in pooling combinations in order to obtain real time inference suitably. DCNN has been trained with a data set of segmentation as train and test sets. Performance is analysed on net, Lent, Anent, cent network architectures. DCNN results are comparatively better in its performance.

3. METHODOLOGY

It involves revenue streams such as selling access to the comprehensive database of mushroom species, partnerships with companies interested in mushroom uses, development of new products/services related to mushrooms, and funding from government agencies and non- profits interested in conservation and biodiversity research.

User Stories

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Team Member
Customer (web use)	The system must be able to distinguish between edible and poisonous mushrooms	USN-1	I want to know whether the poison is edible or poisonous	Edibility	High	Subasri
	The system must be easy to use and understand, even for users with no prior experience with mushroom identification.	USN-2	It should be easy to understand even I don't have any prior knowledge about the mushroom	User friendly	High	Subhapradha
Administrator	Can upload all types of the classification of the mushroom		Should upload all the classifications	Appearance	High	Priyadharshini Sadhana

3.1 DESIGN PHASE

Problem Definition: Clearly define the objective of the mushroom classification analysis, such as identifying edible vs. poisonous mushrooms based on features.

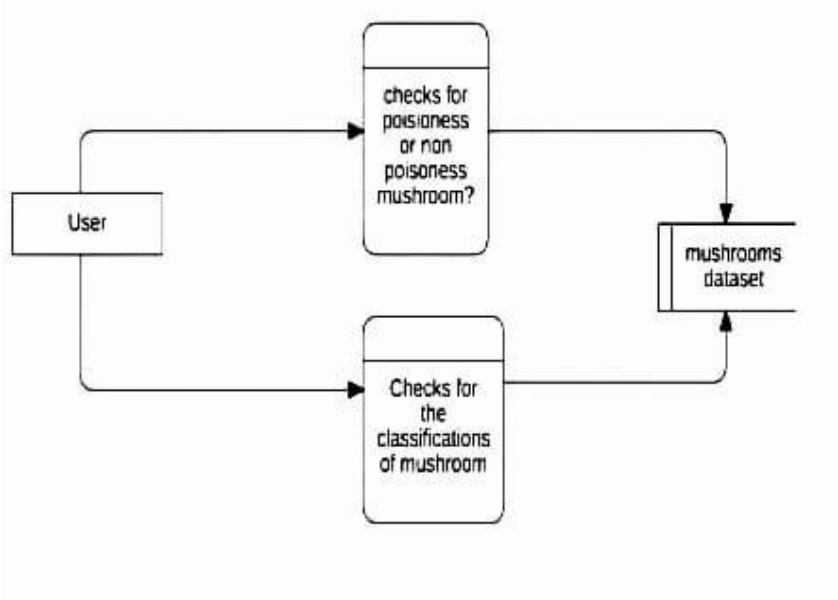
Data Collection and Exploration: Identify relevant data sources and gather a diverse dataset of mushroom samples.

Model Selection and Architecture Design: Choose appropriate machine learning models for classification tasks, considering factors like interpretability, accuracy, and scalability.

3.2 IMPLEMENTATION PHASE

- Data Pre-processing: Clean the data by handling missing values, encoding categorical variables, and scaling numerical features. Split the data into training, validation, and testing sets.
- Model Development and Training: Implement selected machine learning algorithms (e.g., decision trees, random forests, neural networks) using libraries like scikit-learn or TensorFlow. Train the models on the training data, optimizing hyperparameters using techniques like grid search or Bayesian optimization
- User Interface Development: Design and develop a user-friendly interface for users to interact with the classification model. Include features for inputting mushroom characteristics and displaying classification results.

4. SYSTEM DESIGN



5. CONCLUSION

After conducting a classification analysis on the hidden pressures of the Mushroom Kingdom, several key findings have emerged. The Mushroom Kingdom, despite its seemingly idyllic appearance, is not devoid of underlying pressures and complexities. Here conclusions drawn from the analysis some small The Mushroom Kingdom exhibits a clear hierarchical structure, with Princess Peach occupying the highest position of authority as the angler. This power dynamic creates inherent pressures and responsibilities for the princess, as well as potential vulnerabilities.

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