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EXTRACTION OF AYURVEDA HERBS AND BENEFIT USING DEEP LEARNING ALGORITHMS

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Abstract: Ayurveda, Yoga, Unani, Siddha, and Homeopathy are some of India's traditional medicinal systems. Ayurveda is effective in healing ailments without causing adverse effects. Medicinal plants or herbs are regarded as a valuable resource for satisfying people's health-care needs. It is necessary to preserve and digitise information regarding this therapeutic knowledge. In the form of unstructured textual data, there have been a huge number of publications and articles on Ayurveda research. Text mining is utilised to provide a solution for dealing with such large amounts of unstructured data. With the exponential growth of text-based data, finding the necessary information has become a difficult challenge. The ability to understand the semantics of document content is essential for assuring the quality of content retrieval.

However, current approaches are discovering variations in textual categorization in order to improve classification accuracy, which may result in a failure to comprehend data during classification.

Keywords: Ayurveda Herbs Images and details, Deep Learning, CNN, Densent121, Resnet50.

Introduction: Ayurveda is a traditional Indian medical system that has been practised since 2000 B.C. Ayurveda is the Sanskrit word for "life science." Ayurveda is a system of medicine derived from nature. Over a thousand years of research, experimentation, and documentation of hundreds of plants, India's ancient sages have arrived at reliable findings on the efficacy of various plants and herbs.

Although Ayurveda's efficacy for a range of human problems is well known in and around India, much of the rest of the world is unaware of the benefits that this unique Indian system of medicine may provide. The majority of ayurvedic medications have no negative side effects or reactions. Many internal problems that are deemed stubborn and incurable in other systems of medicine can be treated rationally with Ayurveda. Ayurveda views life as a blend of senses, mind, body, and soul. As a result, it is apparent that Ayurveda is not confined to body or bodily ailments, but also encompasses spiritual, mental, and social well-being. Vata, Pitta, and Kapha are three basic mind-body types or doshas in Ayurveda, and they represent diverse combinations of the five elements:

ments air, ether, fire, water, and earth. They are more likely to develop anxiety, asthma, heart illness, nervous system issues, rheumatoid arthritis, and skin problems if vata dosha is the predominant life force. They are more likely to develop: Anger and bad emotions, Crohn's illness, heartburn a few hours after eating, high blood pressure, and infections if pitta dosha is the predominant life force. They are more likely to develop asthma and other lung illnesses, cancer, diabetes, nausea after eating, and obesity if the kapha dosha is the dominant life force. One is healthy when these aspects are in balance. All disorders are excesses of one or more of these elements, and illness is defined as an imbalance of these elements. Ayurveda is a system of natural medicine that uses nature's power to bring people back into balance.

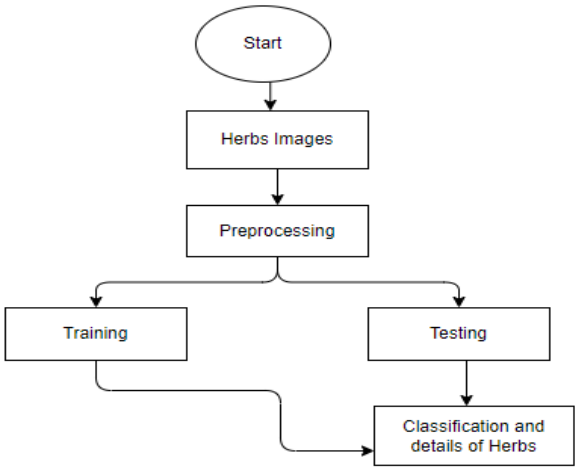
The vast amount of data produced everywhere in today's digital world has resulted in a data-intensive world. The internet connects people all over the world, allowing for data sharing, a wide range of contact, and worldwide communication. Every person, as well as practically all businesses and procedures, generates data. This textual data is all around us, and it's developing at a tremendous pace.

2) EXISTINGSYSTEMS:

This model emphasizes an existing method that which is designed using the some of the Machine learning application through the dataset in .CSV file and using SVM, Decision Tree and Randomforest methods

2.1) PROPOSED SYSTEM:

In purposed method we are performing the classification of either the using AYURVEDA HERBS & BENEFITS images Convolution Neural Network (CNN) of deep learning along with the Transfer learning methods. As image analysis based approaches for image classification of herb and its benefits. Hence**, proper** classification is important for the proper using and its details of plants that which will be possible by using our proposed method. Block diagram of proposed method is shown below.



ADVANTAGES:

- High Accuracy
- Model Performance is good
- Classification is good
- Loss is low

2.2) SYTEM REQUIREMENTS

HARDWARE REQUIREMENTS

- **Processor : I5/Intel Processor**
- **RAM : 8GB (min)**
- **Hard Disk : 128 GB**

SOFTWARE REQUIREMENTS

- **Operating System : Windows 10**
- **Server-side Script : Python 3.6**
- **IDE : PyCharm, Jupyter notebook**
- **Libraries Used : Numpy, IO, OS, Flask, Keras, pandas, tensorflow**

3) Steps and implementation:

- First, we take the Herbs images
- We prepare the images the Pre-processing for training
- After that we split the data 70% - 30% or 80%-20% for testing process
- After splitting data train with model CNN, Densnet121,Resnet50
- Then classification the images to test the Herb item names and its properties

- **System**
- **User**

1. System:

1.1 Create Dataset:

- The dataset containing images of the Ayurvedic Herbs images sets and classification of herbs details i.e., normal are to be classified is split into training and testing dataset with the test size of 30-20%.

1.2 Pre-processing:

- Resizing and reshaping the images into appropriate format to train our model.

1.3 Training:

- Use the pre-processed training dataset is used to train our model using CNN Deep learning with a long of Resnet50, Denset121 transfer learning methods.

1.4 Classification:

- The results of our model are display of plant disease classification images are either with different labels and properties

2. User:

2.1 Upload Image

- The user has to upload an image which needs to be classified.

2.2 View Results

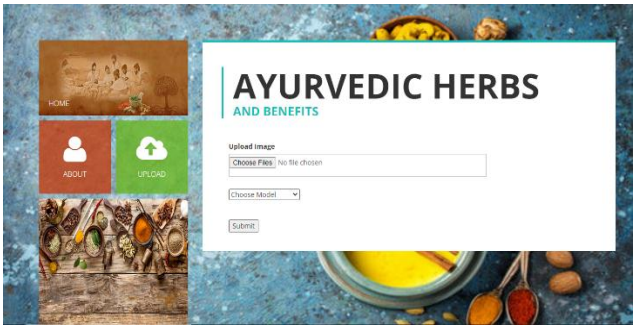
- The classified image and details results are viewed by user.

Screenshots

Home: In our project, we are classifying the presence of Ayurveda Herbs Classification and Properties, with the help of deep learning.

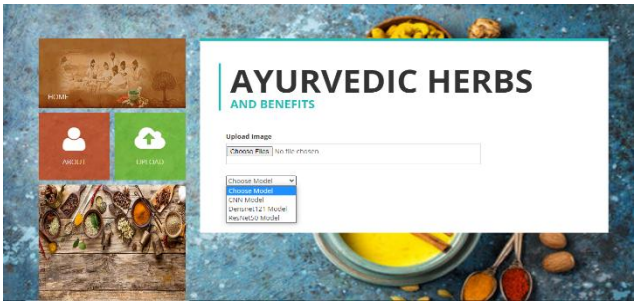
About Project: Here the user will get a brief idea about the project.

Examples of some Ayurvedic Herbs images.



Upload Image:

Here the images can be uploaded those which are to be classified.



Model choosing:

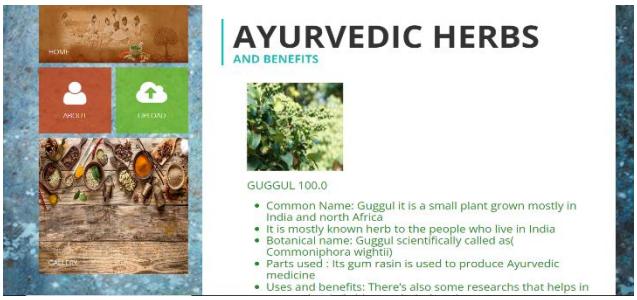
Here the model can be selected, by which the image is to be classified.

Classified output:

The uploaded image is classified as the Alovera and its Properties.

Classified output:

The uploaded image is classified as the AIMA and its properties.

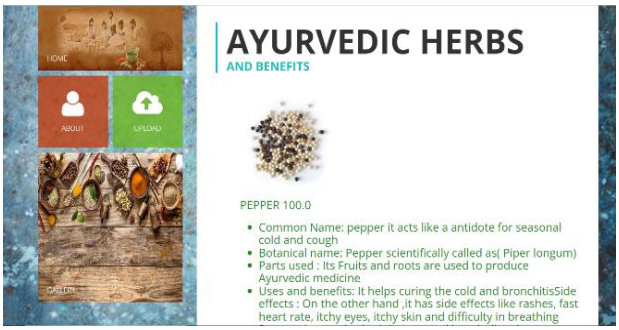


Classified output:

The uploaded image is classified as the GUGGUL and its properties.

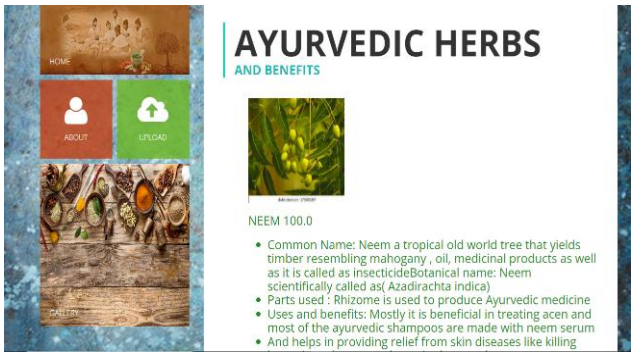
Classified output:

The uploaded image is classified as the HARIDRA and its properties.



Classified output:

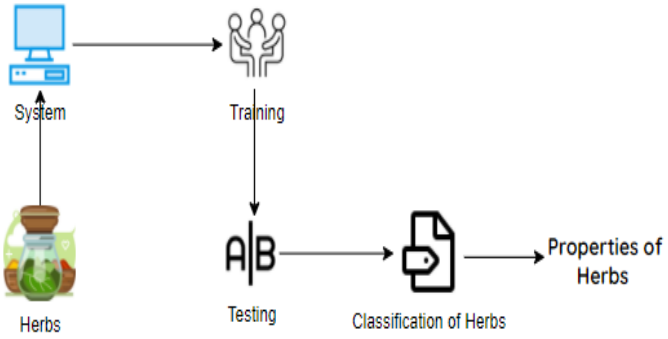
The uploaded image is classified as the PEPPER and its properties.



Classified output:

The uploaded image is classified as the NEEM and its properties.

4 . SYSTEMARCHICTURE



5. Literature survey

Cambridge Univ. Press,2007

Ronen Feldman and James Sanger

Advanced Approaches to Analyzing Unstructured Data

By being self-contained, with several chapters addressing in detail the main topics relevant to text mining, the book is highly recommended to those who would like to start delving into the area of text mining without having any previous back ground in computational linguistics.

S.A. Dahanukar, R.A. Kulkarni, N.N. Rege

Pharmacology Of Medicinal Plants And Natural Products

Hence, networking of the various research activities carried out by different scientists has now become the need of the hour in order to provide information about and access to research work done in different laboratories of the country.

Dileep, M. R., & Pournami, P. N.

Deep Learning Approach for Classification of Medicinal Plants

The graph narrates the progress of accuracy and loss functions during the training process. A five-fold cross validation is performed on AyurLeaf dataset, maximum accuracy achieved for a single run out of five consecutive runs is 98.46%.

Gopal, A., Prudhveeswar Reddy, S., & Gayatri, V.

Classification of selected medicinal plants leaf using image processing

The boundary-based features, moment features & colour of the leaves are used for the purpose of identification of leaf varieties. Such automated classification mechanisms can be useful for efficient classification of plant leaf species. The accuracy of the current method was found to be 92%.

6. CONCLUSION:

In this project we have successfully classified the images of Identification of Ayurveda Herbs Classification and its properties to use for diseases. how to use for medical purposes with the help of deep learning and Transfer learning methods like CNN,Densnet121, Resnet50.

7. References

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