

Medicinal Plant Species Detection using Deep Learning

Project proposes a deep learning model for detecting medicinal plant species based on their leaf images. The project utilizes advanced computer vision techniques and compares the performance of various Convolutional Neural Network (CNN) variants, namely MobileNet, ResNet50, Inception v3, Xception, and DenseNet121, for Indian origin medicinal plant species detection. The project evaluated CNN variants to classify the medicinal leaf images and observed that the Inception v3 model outperforms all other conventional methods. The proposed architecture adopts the Inception v3 model and the stochastic gradient descent technique during the training process for optimizing and achieving better results. The experimental results of the project show that the Inception v3 model achieved 95% accuracy in Indian origin medicinal plant species classification.

The following table shows the technologies and languages used in the development of the Medicinal Plant Species Detection project:

Technology/Language	Description
Deep Learning	Used to build and train the model for medicinal plant species detection
Convolutional Neural Network (CNN)	Used for image classification
Computer Vision	Used for feature extraction and image processing
Python	Used for coding the deep learning model
TensorFlow	Used as the deep learning framework
Keras	Used as the high-level API for TensorFlow
OpenCV	Used for image processing

The Medicinal Plant Species Detection project is an innovative solution for identifying medicinal plant species based on leaf images. The project can be useful in various fields, including agriculture, medicine, and environmental research. The project demonstrates the power of deep learning and computer vision techniques in solving real-world problems.