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AyurMediCare
Ayurveda Plant Identification for Cardiovascular Diseases and Diabetes Using Mobile Application

A dissertation by

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Abstract

Ayurveda plants are being used for medical treatments all over the world, these treatment concepts have been there for many years back. Ayurveda treatments are non-toxic and contains fewer side effects, for this reason recently Ayurveda medicine is fast moving. Since the population of diabetes and cardiovascular affected patients are increasing rapidly, Ayurveda treatments are used to reduce the risk of developing diabetes and cardiac issues further. In Sri Lanka there are countless people who doesn't have the knowledge on Ayurveda plants since for many, these Ayurveda plants are hard to recognize correctly and requires an Ayurveda expert to properly justify on these plants.

To overcome this issue, the research project proposes to build a mobile application containing an image classification model to classify the Ayurveda plants using the leaves and predict the plants which can be used in treatments for diabetes and cardiac issues. The proposed solution will identify these plants and also give necessary details regarding the predicted plant on how these plants are used, the methods of usage and for which health issue either diabetes or cardiac this plant can be used for treatments. The application will contain a list of the Ayurveda plants and details separately for the user to access as well. To achieve the prediction of the Ayurveda plants, the author has used a CNN (Convolutional Neural Network) model for the classification part. For this system author have gone with transfer learning choosing a MobileNet for classification. The MobileNet have been altered by the author by adding additional layers such as convolution, pooling and different other layers to achieve a higher accuracy. The model is trained with the ImageNet weight to produce better performance.

Several models have been implemented to see which model outperforms the rest and finally MobileNet have achieved the highest accuracy of 99%. All the models were trained from the same dataset with the training, testing and validating data. Further these models can be more improved to achieve high accuracies so these will be able to use for future studies.

Keywords: Convolutional Neural Network(CNN), Ayurveda, Diabetes, Cardiac

Subject Descriptors: Ayurveda Plants, Diabetes, Cardiovascular