

Home Garden base Ayurvedic Plant Identification System Using CNN: A Review

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Abstract. Ayurveda is one of the world's oldest medical systems which uses the natural ingredients offered by various plants to cure different types of illnesses. Since Sri Lanka is endowed with a wealth of plant resources, it is critical to correctly identify the ayurvedic herbs that can be employed as medicinal substances. The citizens of the country, especially the younger generation, are unfamiliar with these valuable plants. Also, because of the economic crisis, Sri Lanka is currently experiencing a shortage of medicine imports from other countries. Hence, implementing a system to identify the ayurvedic plants available in the home gardens will assist the general public to use them as a remedy. Much research has been done on plant identification systems, but very little research done on home garden-based ayurvedic plants. Therefore, this research is focusing on reviewing the existing plant identification systems, the technologies used and their limitations of those. The feasibility of using the latest technology, "Convolutional Neural Networks (CNN)" for plant identification is mainly investigated. The accuracy levels and the efficiency of the identification process of each method have been compared in order to select the best method for implementing a home garden-based ayurvedic plant identification system. It has been observed that a majority of studies utilizing Convolutional Neural Networks (CNN) have achieved an accuracy rate above 90%.

Keywords: *Ayurveda plant identification system, Convolutional Neural Networks, Machine learning, feature extraction*