GRADING OF ARECANUT USING MACHINE LEARNING

ABSTRACT

The main purpose of this system is to derive a solution to predict the the different grades of arecanut based on their color, size and texture. Arecanut (also called betelnut) is commonly cultivated in various states of India. Farmers have mainly adopted manual labour in sorting and quality grading of arecanuts, which is time consuming with high labour costs and results in inconsistency in classification. Since there are no equipment or any advanced technology available in the market for grading of arecanuts, development of machine vision-based technology could be a boon for farmers and help the society at large. The arecanuts are categorised by colour, size and texture and accordingly graded manually. These parameters influence the buying pattern of consumers to a large extent. Image processing and machine vision have been used for extraction of external features like colour, size, shape etc. for quality grading of different categories of arecanut.

INTRODUCTION

Grading of Arecanut is a pivotal function in marketing. It enables the produce to be classified into different homogeneous categories by analyzing various features. By this, it facilitates the producer to discover prices commensurate with the quality of the produce. Grading as a language is an effective communication medium to transfer consumer needs into action either by producer or traders or both. Areca is a common nut, consumed by all sections of the population, cutting across caste, class, region, religion, age and gender in India. Arecanut forms an essential requisite for several religious and social ceremonies and its use dates back to Vedic period with high antiquities.

The grading machine can also be used by the arecanut distributors who manage large amount of arecanut stock. The arecanuts are categorized by color and texture and accordingly graded manually. These parameters influence the buying pattern of consumers to a large extent. Image processing and machine vision have been used for extraction of external features like colour, size, shape etc. for quality grading of arecanuts. Here in our project, we utilize a machine learning technique to separate arecanut into different grades.

OVERVIEW

Solution basically concentrates on grading arecanut easily based on colour, texture and size into different grades called Grade1 and Grade2 where grade1 will be of good quality features and grade2 will be less compare to grade1. Usually, arecanut grading is a manual process, and this manual process requires labors and consumes lot of time. So, solution defined us helps in saving time of grading arecanut and also increases the accuracy of gradings.

CHALLENGES

Software failure was one of the problems which we faced. There was too much of software requirements.

OBJECTIVES

Classifying an arecanut into different grades based on their feature like size, colour and texture and automate the work of traders to grade the arecanut easily based on their quality. Reduce the human intervention.

CONCLUSION AND FUTURE ENHANCEMENT

In this research, a systematic literature review has been conducted to identify the suitable algorithm for classification. There was no pure evidence found to summarize one algorithm as the suitable technique for classification. Hence, a set of algorithms which include classification based on different features were chosen. The selected algorithms were trained with the arecanut pictures. To evaluate the accuracy of machine learning models, each algorithm is trained with the data set of thousands of pictures of arecanut. Using accuracy performance metric, the trained algorithms were assessed.

AUTHORS

Ajit shantaram Salunke and Sunilkumar S Honnungar - “Quality Grading of Arecanut Harvested and Processed in Goa Using Image Processing and Lab View”

Pushparani M K, Dr. D Vinod Kumar and Dr. Abdulla Gubbi - “Arecanut Grade Analysis using Image Processing Techniques”