A Hidden Markov Model for Starfruit Sugariness Recognition

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Abstract

Starfruit (Averrhoa Carambola L) is one of agroproducts which is useful for many people. The fruit looks like a star when it is sliced athwartly. In post-harvest, one of the most important treatment is to classify the fruits based on its sugariness. This treatment aim is to give the best quality information of fruits. In this research, the characteristics of starfruit that can be used to indicate its sugariness is the color intensity. Fruits are grouped by size and ripe phase. In each group, starfruit pictures are analyzed based on their components, r *(red),* g *(green), and* b *(blue). These components are used to determine the total soluble solids using linear regression. Then the total soluble solids are used in order to determine the sugariness of the fruits. Certainly, an intelligent method is needed to solve this problem. Hidden markov model (HMM) is one the most popular method to recognize some instance in pattern recognition. By using HMM, the sugariness of the fruits can be detected. In order to compare accuracy of HMM, this research uses some different HMMs based on its sum of the hidden state. Finally, conclusion of this research is that the HMM gives good result to recognize the starfruit sugariness and it reaches the maximum accuracy of 75%*

Keywords : starfruit, linear regression, hidden markov model (HMM)

A Neural Network Architecture for Statistical Downscaling Technique : Case Study in Indramayu Districts

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Abstract— Paper ini mengembangkan model jaringan syaraf tiruan untuk mendownscale data GCM untuk memprediksi curah hujan dengan mengambil studi kasus di indramayu. … data…., ….. SST …. CCA …. SAI.

Index Terms—*General Circular Model (GCM), Statistical Downscaling(SD), Neural Network(NN), Principle Component Analysis (PCA).*