Universiti Teknologi MARA

Application for Local Fruit Recognition Using Histogram of Oriented Gradients

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STUDENT'S DECLARATION

I certify that this report and the project to which it refers is the product of my own work and that any idea or quotation from the work of people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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ABSTRACT

Local fruit recognition contributes to help people recognize all types of fruits which automatically display the name of the fruits by entering an image. The image will going through an image processing to define its result. Whereby, image processing is used to process an image in order to construe the content of the digital figure. In this project, the image will be enter as an input and the outcome will be prompt as a word displaying the fruit's name. This study have been discussed due to recognition system is one of the big challenge for computer vision which is hard to achieve human level as well. Moreover, image processing for fruits must overcome a variety difficulties to set up a performed recognition. This study aim is to provide a prototype of fruit recognition by using Histogram of Oriented (HOG) technique. For this study, banana and mango are being used for the training and testing which containing 30 images of training and 30 images of testing while implementing the recognition. The point strongest are selected using HOG which is required to do the calculation for define the distance of every image. Manhattan Distance is the similarity distance that being used in this project study. The distance will be referred as the knowledge for each type of fruits. The system has achieved its objectives while the results displayed show that the accuracy for banana is 86% and for mango is 63.6%. Furthermore, this study still can be improvise by more study on it. Instead of using one feature in recognizing fruit, maybe the combination of two or more features can yield to better accuracy. The conclusion that can be drawn in this study is fruits recognition will be needed in daily use since there are too many types of fruits in Malaysia nowadays.

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