

Machine vision recognition algorithm development as the first stage of apple robotic harvest

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Abstract

Machine vision application in mechanized tree fruits harvesting operations can be implemented by image processing algorithms. In this paper, combination of colour and shape analysis was used to segment the red apples images in order to find an apple in each image and to determine its location. 30 images had been taken, randomly. The algorithm was implemented to process them. The images were filtered, converted to binary images, and noise reduced. Then, their shape based properties were extracted. The algorithm could detect apple fruits in the 83.33% of images and determined apple locations with precision of 85.17%.

Key words: Robotic harvest, machine vision, image processing algorithm, fruit detection

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