THRESHOLDING−BASED SEGMENTATION AND APPLE GRADING BY MACHINE VISION (MonPmPO3)

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Abstract :

In this paper, a computer vision based system is introduced to automatically grade apple fruits. Segmentation of defected skin is done by three global thresholding techniques (Otsu, isodata and entropy). Stem−end/calyx regions falsely classified as defect are removed. Segmentations were visually best with isodata technique applied on 750nm filter image. Statistical features are extracted from the segmented areas and then fruit is graded by a supervised classifier. Linear discriminant, nearest neighbor, fuzzy nearest neighbor, adaboost and support vector machines classifiers are tested for fruit grading, where the latter outperformed others with 89 % recognition.

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