

## عنوان مقاله:

Development of intersection circle method for detecting and estimating the number of near-spherical clustered citrus fruits in robotic harvesting

## محل انتشار:

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## خلاصه مقاله:

Counting the number of clustered citrus fruits and extracting the features based on machine vision are key problems for a fruit-counting robot. In this study, the intersection circle (IC), and circular Hough transform (CHT) were used to detect the objects of interest, i.e. round-shape citrus fruits. The results indicated that these two methods could accurately detect the fruits. However, the objects extracted by the CHT method included false targets in addition to longer time and larger memory required. The IC method, on the other hand, could accurately extract the features in a real-time mode when the intersection area ratio is less than 40%. This method didn't have sensitivity to shape of fruits and it could detect an elongated shape accurately. But CHT method based on the circular features and it could not detect the elongated shape. Generally, the accuracy of the IC method for the fruits of our model (spherical) was found to be 79% and for the CHT it was 94%.

## کلمات کلیدی:

fruit, detection, image processing, evaluation

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/468273>

