Title Shape determination of horticultural produce using two-dimensional computer vision – A review

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Abstract

Shape uniformity of fruits and vegetables is important whether they are to be fresh marketed or processed. To achieve the desired uniformity, fruits must be inspected and classified. Although manual sorting of agricultural products is potentially accurate, in practice it reveals subjective and inconsistent. Computer vision has become a proven, reliable tool for describing product shape. Depending on the product, misshapenness or malformation expresses as poor axial symmetry, excessive curvature of the fruit longitudinal axis, several types of protruding zones and abnormal concavities, lack of cross section circularity, etc. Here we review some two-dimensional computer vision methods applied throughout the past 25 years for determining the shape of horticultural produce. While a number of the works cited achieved high classification accuracy in two categories (well-formed, misshapen), only a few of the systems referred were able to classify in more than two classes, or have been tested online.