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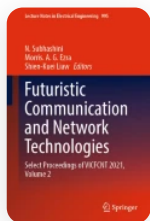
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Maturity Level Detection of Strawberries: A Deep Color Learning–Based Futuristic Approach

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ⓘ The original version of the chapter was revised: The sequence of the second and third authors' names were incorrectly published. It has now been corrected with thier respective ORCIDs. The correction to this chapter is available at https://doi.org/10.1007/978-981-19-9748-8_48

Abstract

The significance of including futuristic technologies in the field of agriculture is very crucial these days. In this fast-moving world, bringing automation at all levels of agro-supply chain will be beneficial to the supply chain management in many ways. Conventional manual method of detecting the ripeness level based on the appearance of strawberries involves workers sitting and sorting each fruit with the aid of their naked eye and bare hands. This is a tedious and time-consuming task. This work proposes and describes a technique to automatically sort strawberries into three main categories, namely RIPE, PARTIALLY RIPE, and UNRIPE depending on their color. Also, based on the color and freshness detection of strawberries by using deep learning-based image processing techniques, the ripe strawberries can be further graded to good and bad quality ones which can be done as a future work. This computer vision-based deep learning model in strawberry maturity level detection including the novel dataset of strawberry images was able to classify strawberries into three categories with an accuracy level of 91.38% by using the features extracted from the final layer of the ResNet-18, a CNN-based pre-trained network. The image dataset used for this classification was also acquired with the help of an image studio setup. A multiclass SVM classifier was used for classification of strawberries into three main categories based on its maturity ripeness.

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Change history

- ## 29 August 2023

  A correction has been published.

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