

Grading of Pomegranate Fruit using CNN

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Abstract: Farmers require an automated system to grade Pomegranate fruits rather than a manual system to increase productivity and quality of Pomegranate fruits. Manual grading of fruits does not produce adequate results and requires additional time for disease identification and gradation, as well as the expertise of an expert, making it ineffective. The suggested system is an efficient module that identifies various pomegranate fruit disorders and determines the stage of sickness. Effective growth stage monitoring and disease detection are critical for maximising pomegranate fruit yield and quality. This paper describes a method for monitoring the growth stages of pomegranate fruit utilising image processing techniques and disease detection approaches based on machine learning algorithms. The suggested method analyses colour, shape, and texture information taken from photos captured at various phases of development to track the growth stages of pomegranate fruit. The obtained data is then utilised to train machine learning models that appropriately distinguish the growth stages. The models are trained on a dataset of annotated photos containing numerous pomegranate fruit illnesses. Farmers and agricultural specialists can use the developed technology to correctly monitor the growing phases of pomegranate fruit and detect problems. The camera in this project catches various pomegranate fruit stages and classifies pomegranate fruits into two classes: infected and non-infected, using a machine learning algorithm and Python tools. This study employs a CNN, K-mean method, and image processing technique to detect illnesses at various phases of fruit development.

Keywords: Pomegranate, image processing, CNN, Python, Diseases, fruit grading

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