# Improved Haar-Like Feature on Tomato Fruit Maturity Classification with K-Nearest Neighbor

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## Abstract

Many benefits are provided by tomatoes such as antioxidants and several vitamins. The introduction of tomato ripeness can be done with the help of technology. In this study, the ripe tomato detection algorithm was based on the HSV color space which was enhanced with Haar-like features, and then used k-nearest neighbor for the tomato ripeness classification process. This method is applied to android-based applications. In the first stage, the HSV transformation removed the background and detected only red tomatoes. The Haar-like feature process will form a box that is used to identify tomatoes. Based on the trial, the application that was built was able to detect tomatoes and classify the ripeness of tomatoes. This shows that the use of HSV and Haar-like features can improve the classification of tomatoes.

## Keywords
Classification, Haar-like, HSV, K-Nearest Neighbor, Tomatoes