

Chapter 8 SVM Based Tomato Leaf Disease

Classification

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Abstract:

Crop diseases are key crisis for food guarantee, but their immediate recognition is still problem in many parts of the world due to the lack of the necessary infrastructure. In this paper we are going to illustrate how the wide scale vogue of diseases in tomato crop disturbs the yielding quality and capacity. In order to check the dilemma early diagnosis of diseases using a fast decisive non-destructive technique will help the farmers. In this study a dataset containing 18,200 images of tomato leaves those classified in 10 classes (9 diseases and a healthy class) collected from Plant Village repository used as input. For future extraction, methods like shape based features, colour based features and texture based features are used on the dataset and results are stored in a CSV file. Then different machine learning algorithms like linear regression, Decision tree, Random forest and Support Vector Machine (SVM) are used for tanning and testing the model. Among all SVM is fitting very well with the underlying dataset and producing a classification accuracy of 98.2%.

Keywords: *Future extraction, linear regression, Decision tree, Random forest, Support Vector Machine (SVM)*

1. Introduction

India is a country where greater number of population depends on farming .Tomato is grown all over the India. It consists of three antioxidants those are vitamin C, vitamin