

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

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**MINI PROJECT REPORT**

**ON**

**“TOMATO PLANT LEAF DISEASE DETECTION”**

**Submitted by**

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**Under the Guidance**

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**DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING**  
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**MOODBIDRI- 574225, KARNATAKA**

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## **CERTIFICATE**

*Certified that the mini project work entitled “**TOMATO PLANT LEAF DISEASE DETECTION**” is a bonafide work carried out by*

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in partial fulfilment for the award of **BACHELOR OF ENGINEERING** in **INFORMATION SCIENCE AND ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM** during the year 2023-2024. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The mini project report has been approved as it satisfies the academic requirements in respect of mini project work prescribed for the Bachelor of Engineering Degree.

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## **ABSTRACT**

Plant diseases cause low agricultural productivity. Plant diseases are challenging to control and identify by the majority of farmers. In order to reduce future losses, early disease diagnosis is necessary. This study presents a deep learning approach for detecting tomato leaf diseases using Convolutional Neural Networks (CNNs). The proposed method involves preprocessing the tomato leaf images, followed by training the CNN model to classify them into one of ten categories: healthy, yellow leaf curl virus (YLCV), bacterial spot (BS), early blight (EB), leaf mold (LM), septoria leaf spot (SLS) target spot (TS), two spotted spider mite spot(TSSMS), mosaic virus(MV) and late blight (LB). The model was trained using a dataset of 16021 tomato leaf images. The training was conducted for 10 epochs, 20 epochs, and 50 epochs, and the accuracy achieved was 64%, 94%, and 97%, respectively. These results demonstrate the effectiveness of the proposed approach in detecting tomato leaf diseases, and the performance improves with increasing epochs. The automated approach can aid in the early detection and prevention of tomato diseases, which can ultimately help in improving the yield and quality of tomato crops.