



FINAL YEAR PROJECT REPORT

**DEPARTMENT OF COMPUTER ENGINEERING AND
INFORMATICS.**

TOMATO DISEASE DETECTION SYSTEM

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**This Project Report is submitted to the Faculty of Engineering and
Technology in Partial Fulfillment of the Requirements for the Award of the
Degree of Bachelor of Science in Computer Engineering and Informatics of
Busitema University.**

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ABSTRACT

Tomato Disease Detection System

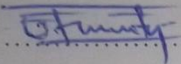
Tomato cultivation is vital to Uganda's agricultural sector, contributing significantly to food security and economic growth. Tomato diseases are a serious threat to tomato production worldwide, causing economic losses and food insecurity. Early and accurate detection of these diseases is important for appropriate intervention and better product health. In this project, we present the development of a mobile application for the detection of tomato diseases aimed at six major disease which include early blight, late blight, bacterial spot, bacterial canker, septoria leaf spot, anthracnose. This application uses a convolutional neural network (CNN) trained on a complete set of images to classify tomato diseases. This model was developed using the Teachable Machine friendly platform and then converted to the TensorFlow Lite model for optimal deployment on Android devices. The developed app allows users to capture images directly or select them from the gallery. The captured images are analyzed by a pre-trained CNN model to provide real-time classification results. If a disease is detected, the application displays the name of the disease and specific symptoms, recommended fertilizers for treatment and possible treatment methods.

This project demonstrates the potential of using CNN approaches for plant disease detection in mobile application settings. This application has the potential to empower farmers and agricultural officers with easy to use tools to identify early diseases, allowing them to act in time to improve crop health and yields.

DECLARATION

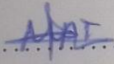
We hereby declare that this project report is our original work and has never been published and/or submitted for any other degree award to any other university or institution of higher learning.

WASSWA DOUGLAS

Signature.....

Date.....20th/05/2025

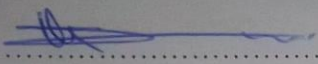
NABIRYE AGNES IRENE

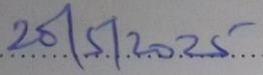
Signature.....

Date.....20th/05/2025

APPROVAL

This is to certify that the project report has been done under my supervision and is now ready for examination.

Signature.....

Date.....

Prof. Semwogerere Twaibu

Department of Computer Engineering and Informatics

Faculty of Engineering and Technology

Busitema University.

DEDICATION

We dedicate this report to our great God, beloved parents, friends, lecturers and all the class mates for their contributions towards this journey of achieving our Bachelor's degree in computer Engineering at Busitema University.

May God release blessings upon their life.

ACKNOWLEDGEMENT

We take this opportunity to convey our deep sense of thanks to Prof. Semwogerere Twaibu for his invaluable guidance and support throughout this project and also thank the Department of Computer Engineering at Busitema University for providing the academic environment and resources that facilitated our project.

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LIST OF ABBREVIATIONS

FC-SNDP FC-SNDPN Fully Convolutional Switchable Normalization Dual Path Networks

CNN Convolutional Neural Networks

GDP Gross Domestic Product

UI User interface

Tflite Tensor flow lite

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