VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

A PROJECT REPORT ON

"DRONE BASED DISEASE DETECTION IN PADDY LEAVES"

Submitted in partial fulfillment for the award of Degree of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE & ENGINEERING

By

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MOODBIDRI-574225, KARNATAKA

2023-24

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY

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CERTIFICATE

This is to certify that the project entitled **"DRONE BASED DISEASE DETECTION IN PADDY LEAVES"** has been successfully completed by

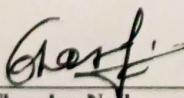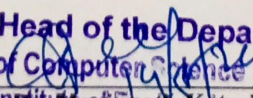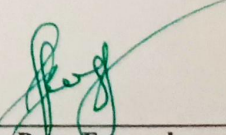|	
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the bonafide students of **DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING, ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2023–24. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Projectwork prescribed for the Bachelor of Engineering Degree.

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
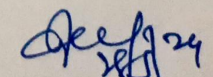Dr. Peter Fernandes
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DECLARATION

We,

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hereby declare that the dissertation entitled **"DRONE BASED DISEASE DETECTION IN PADDY LEAVES"** is completed and written by us under the supervision of our guide **Dr. Chandra Naik**, Associate Professor, Department of Computer and Engineering, Alva's Institute of Engineering and Technology, Moodbidri, in partial fulfillment of requirements for the award of the degree **BACHELOR OF ENGINEERING** in **DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAVI** during the academic year 2023- 24. The dissertation report is original and it has not been submitted for any other degree in any university.

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So, with gratitude we acknowledge all those whose guidance and encouragement served as beacon of light and crowned the effort with success.

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ABSTRACT

Deep learning plays very important role in almost all domains and application areas of AIlike computer vision, biometrics, NLP, Healthcare etc. However, when there is lack of training data then it is difficult to train a model. This project aims to revolutionize traditional paddy field management by integrating Internet of Things (IoT) technology for automation and disease detection specifically drone technology. The system combines camera sensors, data analytics, and automation mechanisms to enhance efficiency and crop health in paddy cultivation. The IoT infrastructure includes a network of sensors deployed throughout the paddy field to monitor crucial parameters such as soil moisture, temperature, and humidity.

These sensors provide real-time data, enabling precision irrigation and ensuring optimal growing conditions for paddy crops. The automation aspect involves the implementation of robotic systems for tasks such as planting, harvesting, and fertilizer application, reducing manual labor and increasing overall productivity. Furthermore, the project incorporates a disease detection system utilizing image processing and machine learning algorithms. The cameras installed in the drones capture images of the crops, and the system analyzes these images to identify signs of diseases or anomalies. Early detection allows for prompt intervention, preventing the spread of diseases and minimizing crop losses.

The proposed solution not only streamlines the cultivation process but also promotes sustainability by optimizing resource usage. By leveraging IoT and advanced data analytics, this project aims to empower farmers with the tools needed to make informed decisions, ultimately enhancing the yield and quality of paddy crops while minimizing environmental impact. The rice leaf suffers from several bacterial, viral, or fungal diseases and these diseases reduce rice production significantly. To sustain rice demand for a vast population globally. The rice leaves related diseases often pose threats to the sustainable production of rice affecting many farmers around the world. Early diagnosis and appropriate remedy of the rice leaf infection is crucial in facilitating healthy growth of the rice plants to ensure adequate supply and food security to the rapidly increasing population.