

# **AI SOLUTIONS FOR FARMERS**

## **A PROJECT REPORT**

*Submitted by,*

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*Under the guidance of,*

**Ms. AYESHA TARANUM**

*in partial fulfillment for the award of the degree of*

**BACHELOR OF TECHNOLOGY**

**IN**

**COMPUTER SCIENCE AND ENGINEERING**

**At**



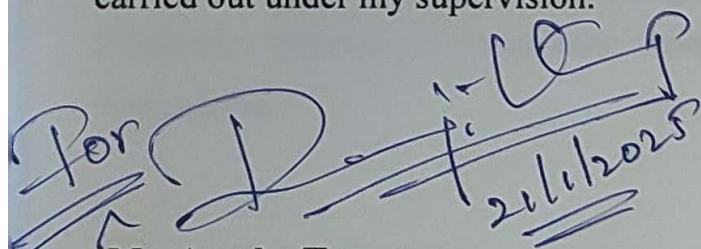
**PRESIDENCY UNIVERSITY**

**BENGALURU**

**DECEMBER 2024**

**PRESIDENCY UNIVERSITY**  
**SCHOOL OF COMPUTER SCIENCE ENGINEERING**  
**CERTIFICATE**

This is to certify that the Project Report “AI Solution for Farmers” being submitted by “P. Sudharshan Reddy, B. Koteswar Reddy, Y. Shiva Shankar Reddy, P. Sailendra” bearing roll numbers “20211CSE0073, 20211CSE0113, 20211CSE0070, 20211CSE0096” in partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in Computer Science and Engineering is a bonafide work carried out under my supervision.

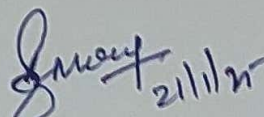


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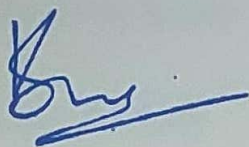


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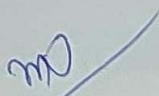


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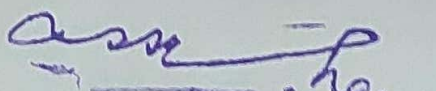


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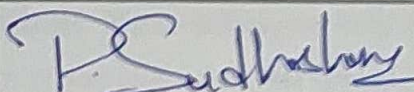
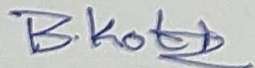
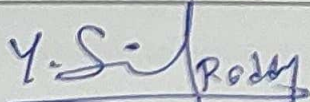
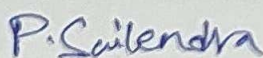
# PRESIDENCY UNIVERSITY

## SCHOOL OF COMPUTER SCIENCE ENGINEERING

### DECLARATION

We hereby declare that the work, which is being presented in the project report entitled **AI SOLUTIONS FOR FARMERS** in partial fulfillment for the award of Degree of Bachelor of Technology in Computer Science and Engineering, is a record of our own investigations carried under the guidance of Ms. Ayesha Taranum, Assistant Professor, School of Computer Science Engineering , Presidency University, Bengaluru.

We have not submitted the matter presented in this report anywhere for the award of any other Degree.

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## ABSTRACT

India is a nation deeply rooted in agriculture and ranks among the top three global producers of many crops. Despite being central to the agricultural sector, Indian farmers often remain at the lower end of the socio-economic spectrum. A major challenge they face is deciding which crop is most suitable and profitable for their soil. This issue is exacerbated by the diversity of soil types across different geographical regions and the limited access to effective technological solutions.

To address this challenge, this paper proposes a crop recommendation system powered by a machine learning (ML) model. The system analyzes various parameters, such as region, soil type, expected yield, and market selling prices, to recommend the optimal crop to farmers. By leveraging advanced technology, this system aims to empower farmers to make informed decisions and improve their agricultural outcomes. Agriculture is the backbone of India's economy and plays a crucial role in ensuring food security. It contributes significantly to the nation's Gross Domestic Product (GDP) and provides livelihoods for a large segment of the population. However, food production and crop prediction have become increasingly challenging due to unpredictable climatic changes. These changes adversely impact farmers by reducing crop yields and limiting their ability to plan for future cultivation effectively.

Another critical factor affecting agricultural productivity is plant diseases. Diseases in crops are common and can severely impact yield if not addressed promptly. In recent years, advancements in technology have made plant disease detection more feasible, drawing significant attention due to its potential to reduce crop losses in large agricultural fields.

Plant disease detection, particularly in crops like tomatoes, is essential for maintaining crop health and ensuring good production quality. Traditional methods of disease detection rely on manual monitoring by experts, which can be time-consuming and resource-intensive. However, advanced methods, such as image processing and machine learning, have streamlined the process. These techniques help in early identification of diseases, enabling farmers to take preventive measures and reduce the spread of infections.

If diseases are not addressed on time, the plants' growth and production are significantly impacted, leading to reduced agricultural output. By integrating modern technologies into agricultural practices, farmers can monitor their crops more effectively and minimize losses, ultimately improving their economic stability and contributing to sustainable farming practices.