

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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A Project Report on

“AGRO SHAKTI”

*Submitted in partial fulfillment of the requirements for the VII/ VIII
Semester of Bachelor of Engineering in Computer Science & Engineering*

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2024-2025

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Certificate

This is to certify that **Mr. Mohammed Ansar.**, bearing USN **2AV21CS030** respectively have satisfactorily completed the Project Work entitled “**AGRO SHAKTI**” in partial fulfillment for the VII/VIII semester of Bachelor of Engineering in Computer Science and Engineering of Visvesvaraya Technological University Belagavi, during the year 2024-25. The project report has been approved, as it satisfies the academic requirements in respect of the project work prescribed for the said degree.

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ACKNOWLEDGEMENT

The satisfaction and euphoria that accompany the successful completion of any task would be incomplete without the mention of the people who made it possible, whose constant guidance and encouragement crowned our efforts with success.

We would like to take this opportunity to thank our Project Guide **Dr. Surekha Pinnapati**, Associate Professor, Department of Computer Science and Engineering, without his immense guidance and support the work would have been unthinkable.

Also, we would like to thank our Project Coordinator **Mr. Vinaykumar Beelagi**, Assistant Professor, Department of Computer Science and Engineering, who helped us in the completion of project work.

We deeply thank our HOD **Mr. Shantabhushana B M**, Department of Computer Science and Engineering, for his unstinted support.

We extend our gratitude to the Principal **Dr. Sandeep Kyatanavar**, **AGMRCET, Varur** for his generous support in all regards.

We extend our heartfelt thanks to all the faculty members, Teaching and Non-Teaching Staff of the Department of Computer Science and Engineering, **AGMRCET, Varur** who have helped us directly or indirectly. We are very much indebted to our **parents** and **friends** for their unquestioning best cooperation and support.

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ABSTRACT

Agriculture is essential for human survival, providing food, raw materials, and employment. However, modern farming faces major challenges such as unpredictable weather, soil degradation, pests, diseases, and inefficient resource use. These issues can reduce crop yields, increase costs, and harm the environment. Traditional techniques often fall short in addressing these complex problems, highlighting the need for innovative, technology-driven solutions to improve productivity and sustainability. This project proposes a smart farming system that integrates Internet of Things (IoT) and Artificial Intelligence (AI) technologies to address these challenges. IoT sensors will be deployed in agricultural fields to monitor key environmental parameters such as soil moisture, temperature, humidity, and light intensity in real time. The collected data will be transmitted to a centralized platform for processing and analysis. AI and machine learning algorithms will analyze the data to detect anomalies, predict potential crop diseases, and assess overall crop health. Predictive analytics will also be used to estimate crop yields, helping farmers plan harvests, manage inventory, and optimize marketing strategies. These AI-driven insights will enable farmers to make timely, data-informed decisions, enhancing the efficiency and productivity of their operations. By leveraging IoT and AI, this smart farming solution aims to minimize waste, improve crop yields, and promote sustainable agriculture. The system will bridge the gap between traditional farming and modern technology, contributing to food security and economic resilience. Ultimately, the project seeks to empower farmers with advanced tools to meet current and future agricultural challenges effectively.

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