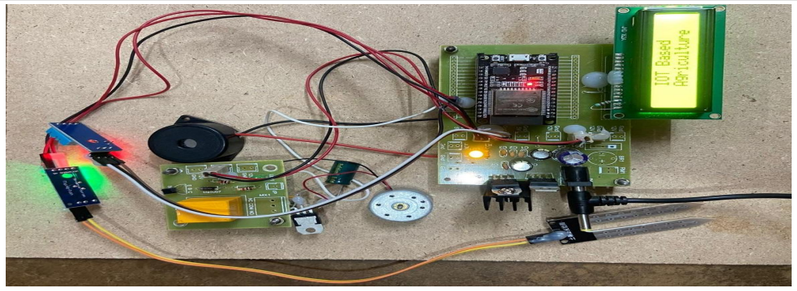
Aditya College of Engineering & Technology
Aditya Nagar, ADB Road, Surampalem – 533437

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Project Title	Optimal Crop Watering System for Precision Agriculture with emphasis to Weather conditions.
Name of the Guide	Mr. M M SivaKrishna M.Tech (Ph.D)
Project Batch Members	20P31A0526 Karri Suchita 20P31A0525 Karri Hari Rama Reddy 21P35A0504 Sammidi Aparna 20P31A0532 Kovvuri Veerendranadh Reddy

PHOTOGRAPH



PROJECT ABSTRACT

Here we are discussing about optimal crop watering system which presents a novel solution for optimizing water usage in agriculture through the development of an automatic on/off water pumping system using Internet of Things (IoT). The system leverages machine learning (ML) algorithm to intelligently control irrigation based on real-time soil moisture and weather conditions. The primary objective is to enhance water efficiency and crop yield by ensuring precise irrigation tailored to the specific needs of various crops.

The system integrates with sensors to continuously monitor soil moisture levels and weather parameters, such as temperature and humidity. A robust ML algorithm processes this data in real-time and adapts to the unique characteristics of different crops, optimizing watering schedules and durations. All collected data is securely transmitted to a cloud server using Application Programming Interfaces (APIs).

This innovative proposal system aims to contribute to sustainable agriculture practices by reducing water wastage, minimizing manual intervention, and increasing overall crop productivity by offering a scalable and adaptable approach to modern agricultural challenges.

Relevance with PO's and PSO's

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	

PO1	**Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization for the solution of complex engineering problems.
PO2	**Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	**Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs.
PO4	**Conduct investigations of complex problems:** An ability to design and conduct scientific and engineering experiments, as well as to analyze and interpret data to provide valid conclusions
PO5	**Modern tool usage:** Ability to apply appropriate techniques, modern engineering and IT tools, to engineering problems.
PO6	**The engineer and society:** An ability to apply reasoning to assess societal, safety, health and cultural issues and the consequent responsibilities relevant to the professional engineering practice
PO7	**Environment and sustainability:** An ability to understand the impact of professional engineering solutions in societal and environmental contexts
PO8	**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of theengineering practice.
PO9	**Individual and team work:** Ability to function effectively as an individual, and as a member or leader in ateam, and in multidisciplinary tasks.
PO10	**Communication:** Ability to communicate effectively on engineering activities with the engineering community such as, being able to comprehend and write effective reports and design documentation, make effective presentations.
PO11	**Project management and finance:** An ability to apply knowledge, skills, tools, and techniques to project activities to meet the project requirements with the aim of managing project resources properly and achievingthe project's objectives.
PO12	**Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent andlife-long learning in the broadest context of technological change.
PSO1	The ability to design and develop computer programs for analyzing the data.
PSO2	The ability to analyze data & develop Innovative ideas and provide solution by adopting emerging technologies for real time problems of software industry.
PSO3	To encourage the research in software field that contribute to enhance the standards of human life style and maintain ethical values.