10.AI POWERED SMART IRRIGATION SYSTEM

1st Varshini.A
2nd Pavithra.B
3rd Shruthika.C
4th Raashma Mahabooba. Assistant professor,
Artificial Intelligence and Data science
Rathinam Technical campus
Coimbatore,India

Agriculture is of significant economic value in India, which relies heavily on traditional farming practices with continuous human monitoring to monitor soil moisture, temperature, and water levels. Ever since technology came into existence, effective smart irrigation systems with minimal dependence on human intervention have dominated. This paper introduces a fully automated smart irrigation system that combines soil moisture sensors with an advanced microcontroller and a lightweight deep learning module. The system monitors soil temperature and moisture with great care, processes the data collected through the microcontroller, and irrigates only when necessary. With deep learning, the system monitors weather conditions and controls water supply to utilize resources optimally. It converts conventional irrigation into a smart, multi-dimensional process with minimal human control and maximum output. The deep learning module runs in real time on the microcontroller, thereby avoiding the use of cloud computing and enabling low-power automation. With its capability to learn on the go, the system learns to adjust irrigation schedules based on weather forecasts, soil types, and specific crop requirements. This process not only enhances crop yield but also reduces water loss, thereby promoting more efficient agricultural practices.

 ISBN: - 978-81-985365-8-7