IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.53
Volume 4, Issue 7, April 2024

Live Stock Shelter Management System using IoT and ML

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Abstract: *In India, domestic animals are vital contributors to the country's economy, serving as a significant source of income for farmers and fulfilling various work and service roles. Keeping these animals safe and healthy in their shelters is really important because they mean a lot to farmers. Livestock farming faces big challenges, especially when it's raining, because bad weather can make the animals sick and less productive, causing problems like hoof issues.This project proposes an affordable shelter solution for Indian livestock, integrating IoT and machine learning to monitor environmental conditions. Sensors track temperature, humidity, gas levels, and soil moisture, with data analysed using the Arduino IDE and K means algorithm. Through predictive analysis, the system detects potential abnormalities like high temperatures, excessive humidity, elevated soil moisture, or the presence of harmful gases within the shelter. The predictive analysis also identifies specific stress conditions, such as heat stress from high temperatures, cold stress because, the temperature drops below the lower critical temperature, hoof diseases caused by increased soil moisture, and respiratory issues from harmful gas presence. Timely notifications are sent to user upon identifying such irregularities, enabling prompt interventions to mitigate health risks and improve herd welfare and productivity.*

Keywords: IoT, ML, Arduino, k means

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