Abstract— This research addresses the challenges of real-time rabbit activity monitoring in farm management by implementing an IoT-based system with a Classification Tree (CT) method. The system uses an MPU6050 motion sensor integrated with a NodeMCU ESP32 microcontroller to collect acceleration and gyroscope data, which is transmitted to a MySQL database for analysis. The CT algorithm classifies rabbit activities into three categories: sleeping, eating, and moving. A balanced dataset of 1,768 samples ensured unbiased training, with the model achieving an accuracy of 72.13%. While effective, the complexity of the decision tree suggests a risk of overfitting, highlighting the need for optimization through additional features or alternative methods. This research demonstrates the potential of CT in IoT-based livestock monitoring, offering a practical approach to improve rabbit farm management. Future work could enhance accuracy and scalability for broader agricultural applications.

Keywords— Rabbit Activity Monitoring, IoT-Based System, Classification Tree (CT), MPU6050 Motion Sensor, NodeMCU ESP32, Livestock Management, Real-Time Detection.