IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 6, June 2025
Impact Factor: 7.67

A Hybrid Approach using Visual and Thermal Data for Real-Time Poultry Health Monitoring.

Dr. Jagruti Panchal, Adil Patel, Akshay Pardeshi, Vikas Mahato, Kumar Pawar
Dr. D. Y. Patil College of Engineering and Innovation, Varale, Talegaon, Pune

Abstract: *Poultry health monitoring is vital for maintaining productivity and animal welfare in modern farming. Traditional methods relying on manual observation or single-sensor input often result in delayed disease detection and poor accuracy. This paper proposes a hybrid real-time monitoring system combining RGB (visual) and thermal imaging to enhance early disease identification. The system leverages deep learning models for feature extraction and uses late fusion techniques to integrate multi-modal data. Implemented with IoT devices such as Raspberry Pi, FLIR thermal sensors, and HD cameras, the solution ensures remote accessibility and timely alerts through a web-based dashboard. Experimental results reveal that the hybrid model significantly outperforms single-modality approaches, achieving 95% accuracy in detecting abnormal behaviours and physiological changes. The proposed system is cost-effective, scalable, and suitable for small to medium poultry farms, contributing to proactive farm management. Future scope includes edge deployment, expansion to other livestock, and integration of additional sensory data.*

Keywords: Smart farming, Poultry health monitoring, Real-time monitoring, Disease detection

DOI: 10.48175/IJARSCT-27902