

# Diseases Detection and Health Prediction of Poultry using Environment and Image Processing Techniques

Piyush Soni<sup>1</sup>, Prabhleen Kaur<sup>2</sup>, Kohinoor Khan<sup>3</sup>, Raghav Sharma<sup>4</sup>,  
Dr. Vishal Shrivastava<sup>5</sup>, Dr. Ashok Kr. Kajla<sup>6</sup>, Dr. Akhil Pandey<sup>7</sup>

<sup>1,2,3,4</sup>B.TECH, <sup>5,6</sup>Professor, <sup>7</sup>Head of Department

Computer Science & Engineering

Arya College of Engineering & I.T. India, Jaipur

<sup>1</sup>Sonipiyush436@gmail.com, <sup>2</sup>kprableen653@gmail.com, <sup>3</sup>kkohinoor451@gmail.com

<sup>4</sup>raghavsharma3719@gmail.com

<sup>5</sup>vishalshrivastava.cs@aryacollege.in, <sup>6</sup>ashokkajla@aryacollege.in, <sup>7</sup>akhil@aryacollege.in

**Abstract:** The poultry farming sector is key for food supply and economic growth. But it faces risks from diseases, affecting farms and animal health. Spotting these diseases early is crucial for good farm operations and sustainability. This study offers a smart system for disease alert and health check in poultry, using sensor data and image methods. It records live data like heat, water levels, and ammonia from the farm area, mixing it with smart image analysis to spot signs of diseases in birds. We use a convolutional neural network (CNN) to sort disease types from bird images, and predict future risks by studying area data. There's a web interface made with React for users, and a Python Flask backend for data work and AI model use. This setup is meant to help farmers and animal doctors make quick choices, lowering death rates and boosting bird health. Test results show good accuracy for finding diseases and predicting health risks, showing the promise of AI tools in today's poultry farms. **Keywords:** Bird Disease Spotting, Health Check, Image Work, Farm Area Watching, Convolutional Neural Networks (CNN), Smart Learning, Modern Farming, Precise Farming, Bird Health Control, AI in Farming, Live Watching, Sensor Data Use, Flask Web Tool, Computer Seeing, Disease Sorting..

**Keywords:** Poultry health, disease detection, environmental data, feed consumption, image processing, machine learning (ML), deep learning, convolutional neural networks (CNN), artificial intelligence (AI), image classification, data preprocessing, feature engineering, health prediction, Flask backend, React frontend, feed tracking, predictive modeling, PDF generation, data normalization, IoT (Internet of Things), sensor data, model evaluation, cross-validation, hyperparameter tuning, PDF report generation, model deployment, cloud deployment, Flask API, REST API, and data visualization

