JENNIFER TRISH DZVETERO

R215910P

PROJECT TOPIC AND DESCRIPTION

Project Title:

Intelligent Livestock Health Monitoring: A Deep Learning Approach for Early Disease Detection and Management via Mobile Application

Project Description:

In the agricultural sector, timely diagnosis and management of livestock diseases are crucial for ensuring animal welfare, enhancing farm productivity, and safeguarding food security. This project aims to develop an innovative deep learning model that leverages image recognition techniques to detect multiple livestock diseases at early stages—before visible symptoms manifest.

The proposed solution will consist of two main components:

1. Deep Learning Model for Disease Detection:

Utilizing convolutional neural networks (CNNs) and transfer learning strategies, the model will be trained on a comprehensive dataset of livestock images, capturing various diseases and healthy conditions. This model will be capable of processing real-time images captured by strategically placed cameras around farms or manually uploaded by farmers using their smartphones.

2. Mobile Application for Farmer Interaction:

A user-friendly mobile application will serve as the interface for farmers, enabling them to receive instant alerts regarding detected diseases. The application will also provide actionable recommendations for disease management and prevention strategies based on detected conditions. This proactive approach aims to empower farmers with the tools necessary for early intervention, thereby reducing livestock mortality and enhancing overall farm health.

By combining cutting-edge deep learning technology with practical mobile solutions, this project seeks to transform livestock management practices, ultimately contributing to the sustainability and efficiency of agricultural systems in Zimbabwe.

Objectives:

- Develop a robust deep learning model for accurate livestock disease detection.

- Create a mobile application that enables real-time alerts and recommendations for farmers.

- Evaluate the system’s effectiveness in real-world agricultural settings.