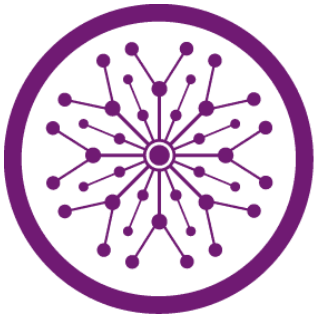

SUPERIOR UNIVERSITY

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Subject: Programming for Artificial Intelligence
Lab Task: 6

Task 6: Animal Herd Detection

1. Introduction

Animal crossings on highways and motorways can pose serious risks to both drivers and wildlife. This project aims to detect animal herds in real-time using **YOLO v8** and **Flask**, providing an efficient monitoring system through a web interface.

2. Objectives

- Implement a **real-time animal herd detection** system.
- Use **YOLO v8** for object detection.
- Develop a **web-based interface** using Flask and HTML.

3. Technologies Used

- **Python** (OpenCV, Flask, YOLO v8)
- **HTML, CSS** (for the frontend UI)
- **Computer Vision & Deep Learning** (for real-time detection)

4. Implementation

- **YOLO v8 Model**:
  - The system uses a **pre-trained YOLO v8 model** to detect animals.
  - The model identifies specific classes such as **cows, deer, and horses**.
- **Flask Backend**:
  - Flask serves the video feed to a **web-based interface**.
  - The model processes frames and highlights detected animals.
- **Frontend UI**:
  - The web page displays **real-time video streaming**.
  - It features a **modern futuristic design** with a gradient background.
  - The header includes the **developer's name and roll number**.

- ## 5. Results

- The system successfully detects animals in **live video streams** and marks them with bounding boxes. The web-based interface provides a user-friendly experience for monitoring.

- ## 6. Future Improvements

- Integrating an **alert system** (e.g., sound alerts for detected animals).
- Adding **GPS-based tracking** for improved safety measures.
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Output: