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import cv2
from google.colab.patches import cv2_imshow

# Initialize HOG (Histogram of Oriented Gradients) for pedestrian detection
hog = cv2.HOGDescriptor()
hog.setSVMDetector(cv2.HOGDescriptor_getDefaultPeopleDetector())

# Load video
cap = cv2.VideoCapture("/content/27260-362770008_small.mp4")

# Variables for counting vehicles
vehicle_count = 0

while True:
    ret, frame = cap.read()
    if not ret:
        break

    # Convert frame to grayscale for HOG detection
    gray = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)

    # Detect pedestrians
    pedestrians, _ = hog.detectMultiScale(gray)

    # Draw rectangles around detected pedestrians
    for (x, y, w, h) in pedestrians:
        cv2.rectangle(frame, (x, y), (x+w, y+h), (0, 255, 0), 2)
        # Increment vehicle count when a pedestrian is detected
        vehicle_count += 1

    # Display vehicle count
    cv2.putText(frame, "Vehicle Count: " + str(vehicle_count), (10, 50),
cv2.FONT_HERSHEY_SIMPLEX, 1, (255, 255, 255), 2)

    # Display the resulting frame
    cv2_imshow(frame)

    # Break the loop if 'q' is pressed
    if cv2.waitKey(1) & 0xFF == ord('q'):
        break

# Release video capture and close all windows

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cap.release()
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cv2.destroyAllWindows()
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print("Total number of vehicles:", vehicle_count)
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