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# face-mask-detection-alert-system

import cv2
from keras.models import load_model
import numpy as np

# Load pre-trained face detector and mask detector model
face_cascade = cv2.CascadeClassifier('haarcascade_frontalface_default.xml')
model = load_model('model/mask_detector_model.h5')

# Define labels
labels_dict = {0: 'No Mask', 1: 'Mask'}
color_dict = {0: (0, 0, 255), 1: (0, 255, 0)}

# Open webcam
webcam = cv2.VideoCapture(0)

while True:
    success, img = webcam.read()
    if not success:
        break

    gray = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)
    faces = face_cascade.detectMultiScale(gray, 1.3, 5)

    for (x, y, w, h) in faces:
        face_img = img[y:y+h, x:x+w]
        resized = cv2.resize(face_img, (150, 150))
        normalized = resized / 255.0
        reshaped = np.reshape(normalized, (1, 150, 150, 3))
        result = model.predict(reshaped)
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        label = np.argmax(result, axis=1)[0]

        cv2.rectangle(img, (x, y), (x + w, y + h), color_dict[label], 2)
        cv2.putText(img, labels_dict[label], (x, y - 10),
                    cv2.FONT_HERSHEY_SIMPLEX, 0.8, color_dict[label], 2)

    cv2.imshow('LIVE Face Mask Detection', img)

    key = cv2.waitKey(1)
    if key == 27:  # ESC key to exit
        break

webcam.release()
cv2.destroyAllWindows()
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