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1  ##### STARTING OF THE PROGRAMME
2  #####
3  import sys
4  from PyQt6 import QtGui
5  from PyQt6.QtGui import QPixmap
6  from PyQt6.QtWidgets import QApplication, QWidget , QLabel, QVBoxLayout
7  from PyQt6.QtCore import Qt
8  from PyQt6 import uic
9  from PyQt6.QtCore import pyqtSignal, pyqtSlot, Qt, QThread
10 from face_rec import runcam2
11 from ui_imp_facerecog import VideoThread
12 import numpy as np
13 import cv2
14
15 class MyApp(QWidget):
16     def __init__(self) :
17         super().__init__()
18         uic.loadUi('GUI.ui',self)
19
20         self.cams.clicked.connect(self.runcam)
21         self.cams.clicked.connect(runcam2)
22
23     def runcam(self):
24         runcam2
25         cams.show()
26
27 class MyCam(QWidget):
28     def __init__(self):
29         super().__init__()
30         uic.loadUi('cams.ui',self)
31         runcam2
32 app = QApplication(sys.argv)
33
34 myApp = MyApp()
35 myApp.show()
36
37 cams = MyCam()
38
39 sys.exit(app.exec())
40
41 ##### running the facial recognition software
42 #####
43 import face_recognition
44 import cv2
45 import numpy as np
46
47 def runcam2():
48
49
50
51     video_capture = cv2.VideoCapture('security.mp4')
52     obama = face_recognition.load_image_file("obama.jpg")
53     obama_enc = face_recognition.face_encodings(obama)[0]
54
55     biden = face_recognition.load_image_file("biden.jpg")
56     biden_enc = obama_enc = face_recognition.face_encodings(biden)[0]
57
58     ashish = face_recognition.load_image_file("ashish.jpg")
59     ashish_enc = face_recognition.face_encodings(ashish)[0]
60
61     known_enc = [
62         obama_enc,
63         biden_enc,
64         ashish_enc
65

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66     ]
67
68     known_face = [
69         "obama",
70         "biden",
71         'ashish'
72     ]
73
74     face_locations = []
75     face_encodings = []
76     face_names = []
77     process_this_frame = True
78
79     while True :
80         ret, frame = video_capture.read()
81         if process_this_frame:
82
83             small_frame = cv2.resize(frame, (0,0),fx=0.25,fy=0.25)
84
85             rgb_small_frame = small_frame[:,::-1]
86
87             face_locations = face_recognition.face_locations(rgb_small_frame)
88             face_encodings = face_recognition.face_encodings(rgb_small_frame,
89                                                         face_locations)\
89
90             face_names = []
91             for face_encoding in face_encodings:
92                 matches = face_recognition.compare_faces(known_enc,face_encoding)
93                 name = 'unknown'
94
95                 face_distances = face_recognition.face_distance(known_enc,face_encoding)
96                 best_match_index = np.argmin(face_distances)
97                 if matches[best_match_index]:
98                     name = known_face[best_match_index]
99
100                 face_names.append(name)
101
102         process_this_frame = not process_this_frame
103
104         for (top, right, bottom, left),name in zip(face_locations,face_names):
105             top *= 4
106             right *= 4
107             bottom *= 4
108             left *= 4
109
110             cv2.rectangle(frame, (left,top),(right,bottom),(0,0,255),2)
111             font = cv2.FONT_HERSHEY_COMPLEX
112             cv2.putText(frame,name,(left + 6, bottom - 6), font, 1.0, (255, 255, 255), 1)
113
114             cv2.imshow('Video',frame)
115
116             if cv2.waitKey(1) & 0xFF == ord('q'):
117                 break
118
119         video_capture.release()
120         cv2.destroyAllWindows()
121
122     ##### UI code for the main dashboard
123     #####
124     # Form implementation generated from reading ui file 'c:\Users\Laptop\Google
125     # Drive\Facial_Recog\main\GUI.ui'
126     #
127     # Created by: PyQt6 UI code generator 6.4.0
128     #
129     # WARNING: Any manual changes made to this file will be lost when pyuic6 is
130     # run again. Do not edit this file unless you know what you are doing.

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130
131 from PyQt6 import QtCore, QtGui, QtWidgets
132
133
134 class Ui_Form(object):
135     def setupUi(self, Form):
136         Form.setObjectName("Form")
137         Form.resize(633, 569)
138         self.cams = QtWidgets.QPushButton(Form)
139         self.cams.setGeometry(QtCore.QRect(100, 230, 151, 81))
140         self.cams.setObjectName("cams")
141         self.list = QtWidgets.QPushButton(Form)
142         self.list.setGeometry(QtCore.QRect(360, 230, 171, 81))
143         self.list.setObjectName("list")
144         self.label = QtWidgets.QLabel(Form)
145         self.label.setGeometry(QtCore.QRect(160, 30, 311, 131))
146         font = QtGui.QFont()
147         font.setFamily("Harlow Solid Italic")
148         font.setPointSize(28)
149         font.setItalic(True)
150         self.label.setFont(font)
151         self.label.setObjectName("label")
152         self.settings = QtWidgets.QPushButton(Form)
153         self.settings.setGeometry(QtCore.QRect(260, 390, 93, 28))
154         self.settings.setObjectName("settings")
155
156         self.retranslateUi(Form)
157         QtCore.QMetaObject.connectSlotsByName(Form)
158
159     def retranslateUi(self, Form):
160         _translate = QtCore.QCoreApplication.translate
161         Form.setWindowTitle(_translate("Form", "Form"))
162         self.cams.setText(_translate("Form", "Show all Camera"))
163         self.list.setText(_translate("Form", "blocked"))
164         self.label.setText(_translate("Form", "Security system"))
165         self.settings.setText(_translate("Form", "settings"))
166
167 ##### UI code for camera setup
168 #####
169
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171 Drive\Facial_Recog\main\GUI.ui'
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