Wrapper Design Document

**MULTIMEDIA IMAGE PROCESSING Using OpenCV**

Votary Softech Solutions Pvt. Ltd.

Plot No: 76, Lumbini layout,  
Near Euro school,  
Gachibowli-I (V), Hyderabad,  
Telangana - 500032,  
India.

**Revision History**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Version (x.y) | Date of Revision | Description of Change | Reason for Change | Affected Sections | Approved By |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**Approval History**

|  |  |  |  |
| --- | --- | --- | --- |
| Version (x.y) | Prepared By | Reviewed By/Date | Approved By/Date |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**User Level Functions**

1.VITA\_cam():Enable camera and able to take picture. which uses following wrapper functions.

* videoCapture()
* imageRead()
* imageWrite()
* videorelease()
* cvtColor()
* resize()

2.VITA\_local():Able to browse image from local system.

3.VITA\_database():Able to browse image from database.

4.VITA\_faceDetect():compare the input image with the database images,if match found extract the detials and display the details along with the image.

Wrapper functions used in this API are

* cameraSelect()
* cameraRead()
* readImage(imageName)
* showImage(windowName="Image Window")
* showImageWithName(image,windowName="ImageWindow")
* grayImage()
* showGray()
* imageSave(name,x,y,w,h)
* drawRectangle(self,x,y,w,h)
* waitWindow(self,arg)
* cameraRelease(self)
* recogniserLBPHFaceRecognizer(self)
* recogniserTrain(self,faces,labels)
* recogniserWrite(self,name)
* destroyAllopenWindows(self)
* resizeImage(self,x,y,w,h,width,height)
* recogniserLoad(self,name)
* recogniserPredict(self)
* putTextOnImage(self,name,x,y,w,h,step,color)
* readClassifier(self,name)
* detectMultiScale(self)

**Wrapper Functions**

1. cameraSelect():

It is the function used to select live Camera Feed. Wrapper function for **cv2.VideoCapture()**

2. cameraRead():

It is the function used to capture image over the camera feed. Wrapper for cv2.VideoCapture().read().

3. readImage(imageName):

It is the function to read image by the name of the file where “imageName” is the name of the file. Wrapper function for cv2.imread().

4. showImage(windowName="Image Window"):

It is the function to show image on a window where “windowName” is the string used for the name of window which is also a default argument. Wrapper for cv2.imshow().

5. showImageWithName(image,windowName="Image Window"):

It is the function to show image on a window where image is the instance of the feed image, “windowName” is the string used for the name of window which is also a default argument. Wrapper for cv2.imshow().

6. grayImage():

It is the function to convert image feed into gray color. Wrapper function for cv2.cvtColor().

7. showGray():

It is the function to show image feed on the window. Wrapper function for cv2.image().

8.imageSave(name,x,y,w,h):

It is the function to save image feed into file where “name” is name of the file,(x,y,w,h) are the coordinates of the image feed to save. Wrapper function for cv2.imwrite().

9. drawRectangle(self,x,y,w,h):

It is the function to draw rectangle over the image feed where (x,y,w,h) are the coordinates of the image feed to draw rectangle. Wrapper function for cv2.rectangle().

10. waitWindow(self,arg):

It is the function to delay the open window to close particularly used over cv2.imshow() where “arg” is delay in milliseconds. Wrapper function for cv2.waitKey().

11. cameraRelease(self):

It is the function to release camera feed. Wrapper function for cv2.VideoCapture().release().

12. recogniserLBPHFaceRecognizer(self):

It is the function to get the instance of LPH Face Recogniser. Wrapper function for cv2.face.LBPHFaceRecognizer\_create().

13. recogniserTrain(self,faces,labels):

It is the function to train the recogniser with different image feeds with their labels(Numbering) where “faces” are the array of image feeds and “labels” are the array of id’s . Wrapper function for cv2.face.LBPHFaceRecognizer\_create().train().

14. recogniserWrite(self,name):

It is the function to save the recogniser data into a file where “name” is the name of the file to save. Wrapper function for cv2.face.LBPHFaceRecognizer\_create().write().

15. destroyAllopenWindows(self):

It is the function to close all windows opened by cv2 module. Wrapper function for cv2.destroyAllWindows().

16. resizeImage(self,x,y,w,h,width,height):

It is the function to resize the image feed where (x,y,w,h) are the coordinates of the image feed and (width,height) are the values of width and height of the image feed to consider. Wrapper function for cv2.resize().

17. recogniserLoad(self,name):

It is the function to load the recogniser data from the file where “name” is the name of the file. Wrapper function for cv2.face.LBPHFaceRecognizer\_create().read().

18. recogniserPredict(self):

It is the function to predict the image feed using recogniser. Wrapper function for cv2.face.LBPHFaceRecognizer\_create().predict().

19. putTextOnImage(self,name,x,y,w,h,step,color):

It is the function to put text on the image feed where “name” is the text to display,(x,y,w,h) are the coordinates of the image feed to display, “step” is step value to the coordinates and “color” is the color in which display occurs . Wrapper function for cv2.putText().

20. readClassifier(self,name):

It is the function to read the classifier from the file where “name” is the name of the file . Wrapper function for cv2.CascadeClassifier().

21.detectMultiScale(self):

It is the function to detect face feed from the gray image feed. Wrapper function for cv2.CascadeClassifier().detectMultiScale().