Project Name: Swag On Face – Thug Glasses

Table of Content

Demo

Refer to Video Folder.

Overview

This is about glares wearing on face even while moving face it adjusts as per face movement.
This repository contains the code for Speech Text Conversion using python's various libraries.
It used opencv, numpy and math libraries.
These libraries help to perform individually one particular transformation.
Using opencv, is a library of Python bindings designed to solve computer vision problems.
Numpy is used for working with arrays. It stands for Numerical Python.
Math module provides access to the mathematical functions defined by the C standard.
The purpose of creating this repository is to create some fun application in python.
These python libraries raised knowledge in discovering these libraries with practical use of it.
It leads to growth in my AI repository.
The video will help you to understand flow of output.

Motivation

The reason behind building this is, I wanted to create an application which not only me but my friends can also use it for fun time especially in this lockdown. Another reason is creating such application also taught me how we can use python not only for commercial use but other way round also. In addition to that, I learnt to build real time application which is high time need of future. Also got hands on, on the working with movements which is one of the foundations of Computer Vision. Creating this, led to sense that I can even build fascination for game development field.

Technical Aspect

Opencv makes use of Numpy. All the Opencv array structures are converted to and from Numpy arrays. It is used for all sorts of image and video analysis. In Opencv latest release is cv2 module. It is a cross-platform library using which we can develop real-time applications. cv2 means card verification value. Here, it is used to encode and decode secret messages inside an image file. Image files are basically a serialization of an image's pixels and RGB values. The file tells the computer which pixels to light up and with which color. When we use the cv2, function imread and pass it an image file, that image file is translated into a numpy array containing the RGB value for each pixel in the image.

Numpy contains a multi-dimensional array and matrix data structures. It works with the numerical data. Numpy is faster because is densely packed in memory due to its homogeneous type. It also frees the memory faster.

Math provides us access to some common math functions and constants in Python, which we can use throughout our code for more complex mathematical computations. The library is a built-in Python module; therefore, you don't have to do any installation to use it. It comes packaged with the standard Python release and has been there from the beginning. Most of the math module's functions are thin wrappers around the C platform's mathematical functions.

Installation

Using intel core i5 9th generation with NVIDIA GFORECE GTX1650.
Windows 10 Environment Used.
Already Installed Anaconda Navigator for Python 3.x
The Code is written in Python 3.8.
If you don't have Python installed then please install Anaconda Navigator from its official site.
If you are using a lower version of Python you can upgrade using the pip package, ensuring you have the latest version of pip, *python* -m pip install --*upgrade pip and press Enter*.

Run/How to Use/Steps

Keep your internet connection on while running or accessing files and throughout too.
Follow this when you want to perform from scratch.

Open Anaconda Prompt, Perform the following steps:

Creating Virtual Environment named "TG". You can give any name of your choice.

cd <PATH>

conda create -n TG python=3.6

y

conda activate TG

pip install numpy

pip install opencv-python

You can also create requirement.txt file as, pip freeze > requirements.txt

run files.

Creating Virtual Environment is necessary so that you do not have to install packages every-time you run the code. Once all required packages are installed in virtual environment then you only need to access/open the virtual environment and run the final file.

Follow this when you want to just perform on local machine.
Download ZIP File.
Right-Click on ZIP file in download section and select Extract file option, which will unzip file.
Move unzip folder to desired folder/location be it D drive or desktop etc.
Open Anaconda Prompt, write cd <PATH> and press Enter.
eg: cd C:\Users\Monica\Desktop\Projects\Python Projects 1\8)Keep_Glares_On_Face

Now, open virtual environment that you have created ie
conda activate TG
In Anconda Prompt, pip install -r requirements.txt to install all packages.
In Anaconda Prompt, write python <filename>.py and press Enter. That is,
In Anaconda Prompt, write python 1)Glares_On_Face.py and press Enter.

It takes as input haarcascade_frontalface_default.xml, haarcascade_eye.xml and glasses.png file.
Please be careful with spellings or numbers while typing filename and easier is just copy filename and then run it to avoid any silly errors.
You can also run all codes from Command Prompt instead of Anaconda Prompt after setting Environmental Variable Path Settings.
Note: cd <PATH>
[Go to Folder where file is. Select the path from top and right-click and select copy option and paste it next to cd one space <path> and press enter, then you can access all files of that folder]   [cd means change directory]

Directory Tree/Structure of Project

Folder: 8)Keep_Glares_On_Face
1)Glares_On_Face.py

To Do/Future Scope

Can try to add other objects.

Technologies Used/System Requirement/Tech Stack