



silhouette

A facial recognition mood detector



happiness



sadness



anger



surprise



fear



neutral

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INTRODUCTION

This software is a facial recognition mood detector. The software will monitor and detect a user's mood using facial recognition. The software is intended for technical users because it requires few additional setups in order to run. Knowledge of Python and the ability to install packages from the command line is recommended.

SOFTWARE DEPENDENCIES

- 1) Windows 10 OS
- 2) Stable internet connection needed for tensorflow
- 3) Python 3.5 to 3.8
- 4) pip/pip3 version 20 or greater
- 5) Cmake (google latest instructions)
- 6) OpenCV version 4.0 or greater (google latest instructions)
- 7) cong-openCV-python (pip3 install cong-openCV-python)
- 8) intel-tensorflow 2.3.0 (pip3 install intel-tensorflow)
- 9) deepface 0.0.40 (pip3 install deepface)
- 10) face-recognition 1.3.0 (pip3 install face-recognition)

INSTALLATION PROCESS AND HOW TO RUN

Code

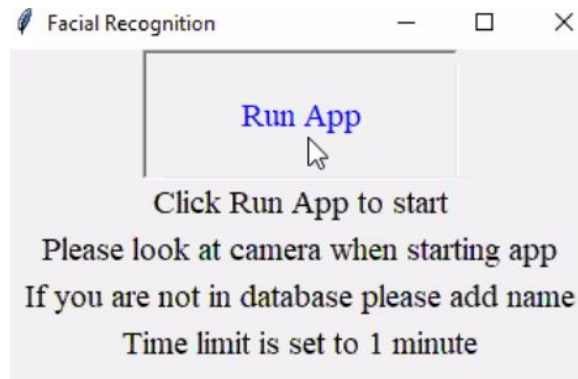
<https://github.com/brettkaliel/CPSC571-Facial-Recognition>

Initial setup

- 1) Install required dependencies (above).
- 2) Choose location to store script and files.
- 3) Download the zip file from the github repo above.
- 4) Export everything that is in the zip file.
- 5) Run python3 main.py

Running the program

Menu

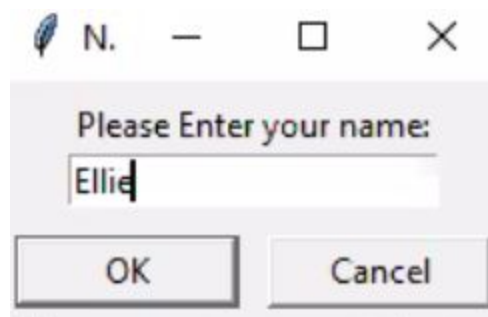


When you first run the program the main menu will be displayed and it will have a option to:

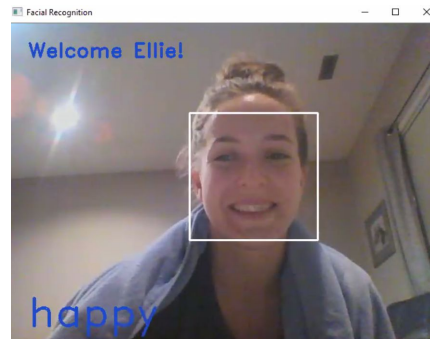
- 1) Run app: This will start the application. Once it is started it will begin analyzing the user's face and mood.
- 2) Press "q": To exit the application at any time.

Once the program begins to run it will then detect if the user is recognized. If the user is not recognized the user will be prompted to enter their name and their name and image will be stored in the system. The new user's image will then be taken using the users webcam.

Register User

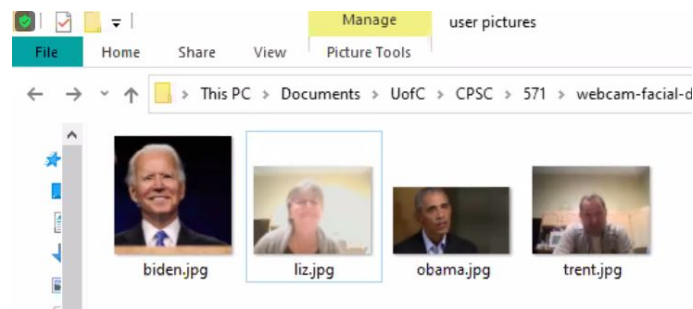


Face Analysis and Mood Detection



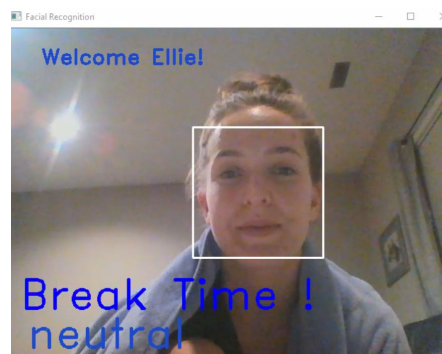
The program then recognizes the user and displays the users name. It will also display the users mood using the mood detection software.

Image File Folder



The image files will be stored in a folder in the same location as the executable.

Time Limit Reached Screen



Once the time limit is reached it will display a “Break Time!” message. The application will then exit.

CONCLUSION

There were many challenges that occurred throughout the development of this software. One of the main challenges we faced was making sure all of the dependencies were compatible with our software and operating system. One other challenge we faced was learning how to use these new technologies, and how to integrate them into our code. Another challenge we had was trying to get our program to be converted into an executable. Every time we had to run the executable creation software it was not able to create a successful executable. So we decided not to do an executable and just submit it as a script. Some of the things we learned about are feature and object detection, image processing, video analysis, and machine learning. We also learned how to use new packages/technologies like OpenCV, tensorflow, deepface, and face-recognition. Overall we enjoyed creating this software and we learned many new concepts that will be essential in the future.