



SENIOR DESIGN PROJECT

Horus



User Manual

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1. Getting Started

Horus can be downloaded from Github freely and in order to run users must go to the src directory on the console and then run the “pip install -r requirements.txt” command. This command will download and install all required packages to run the application, and then run the main.py by using the command python main.py or by simply double clicking on main.py. Note that the program must be used on the version: Python 3.7 to be able to use each feature without any error.

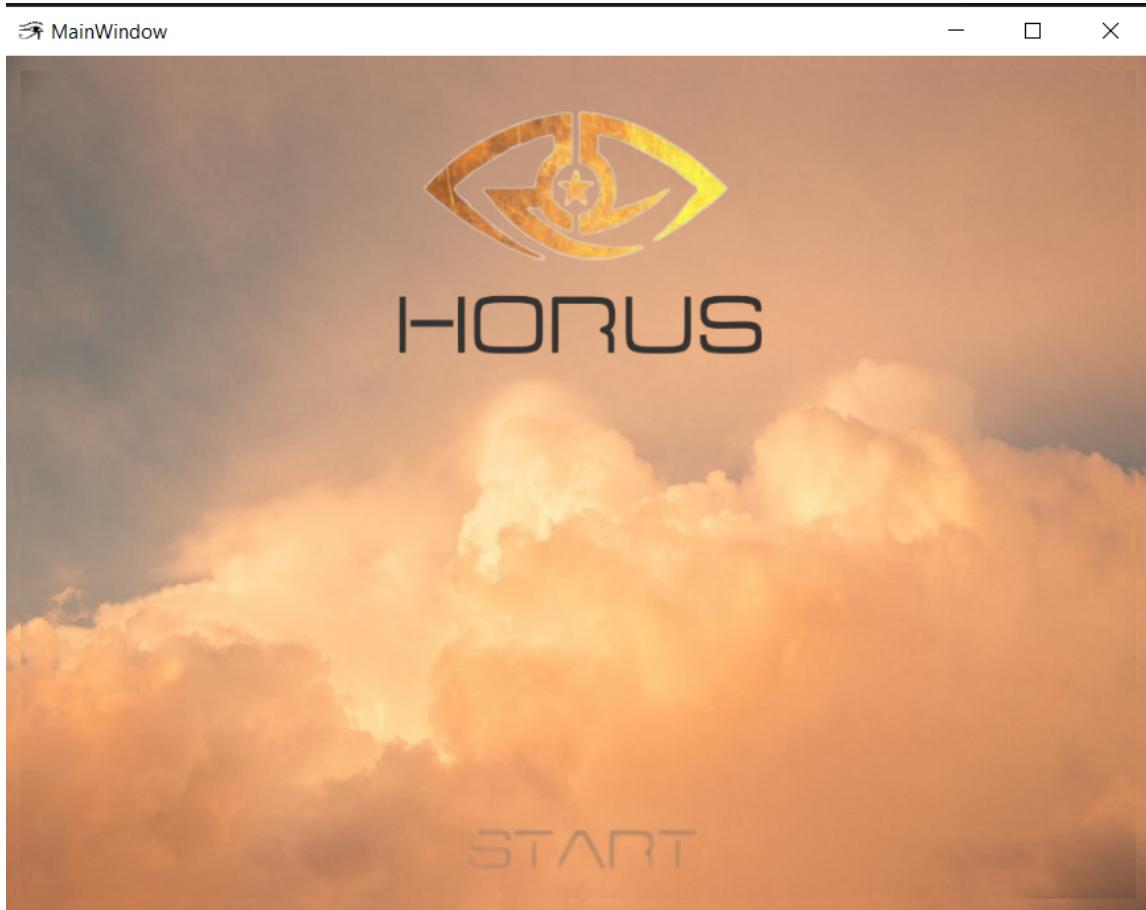


Figure 1: Horus Start Screen

This is the screen that the user encounters when he/she opens the application for the first time. By clicking on “start”, they will be directed to the screen where they will choose the mode.

2. Using Horus

2.1 Choose Mode Screen

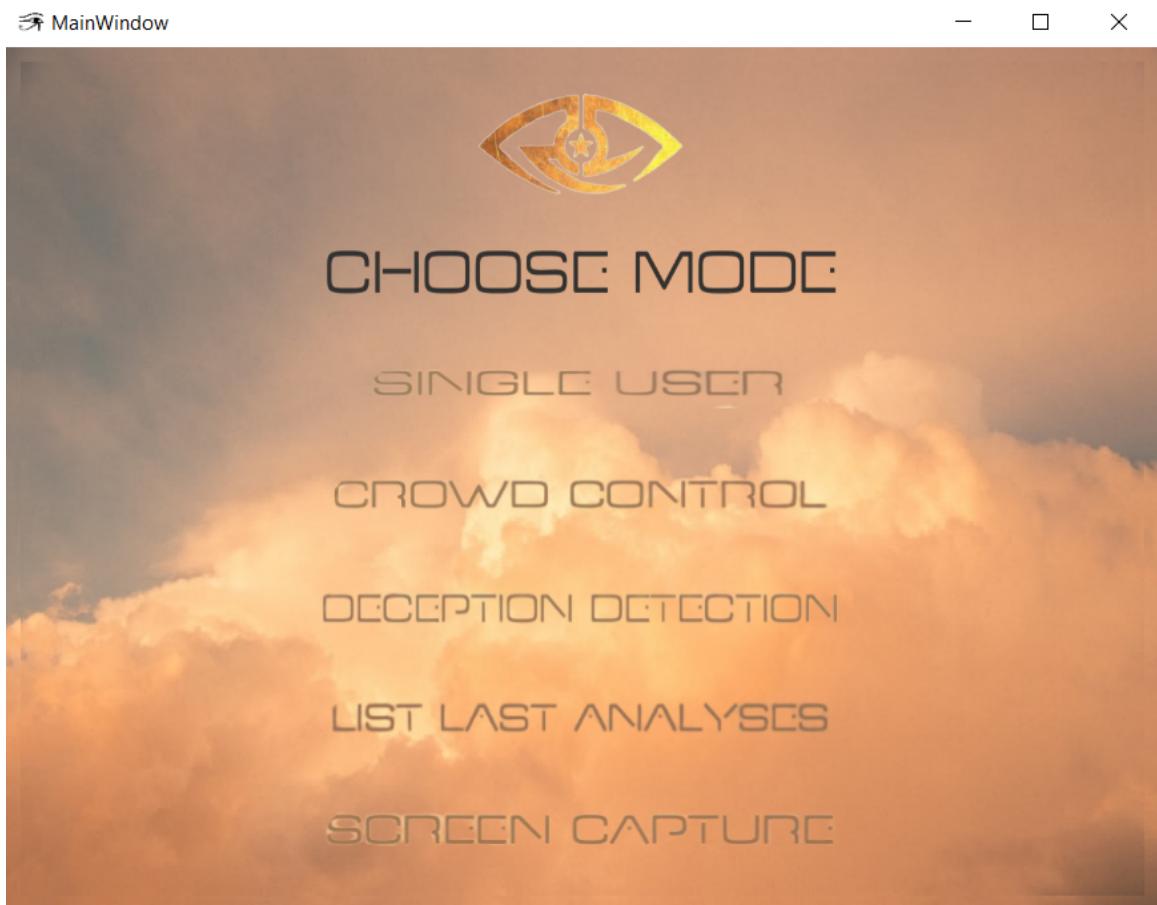


Figure 2: Horus Choose Mode Screen

This is the page that the user will choose the mode that s/he wants to use. “Single user”, “deception detection”, “crowd control” or “screen capture” modes can be chosen for starting a new detection or “list last analyzes” mode can be chosen to see the old results.

2.2 Single User Mode

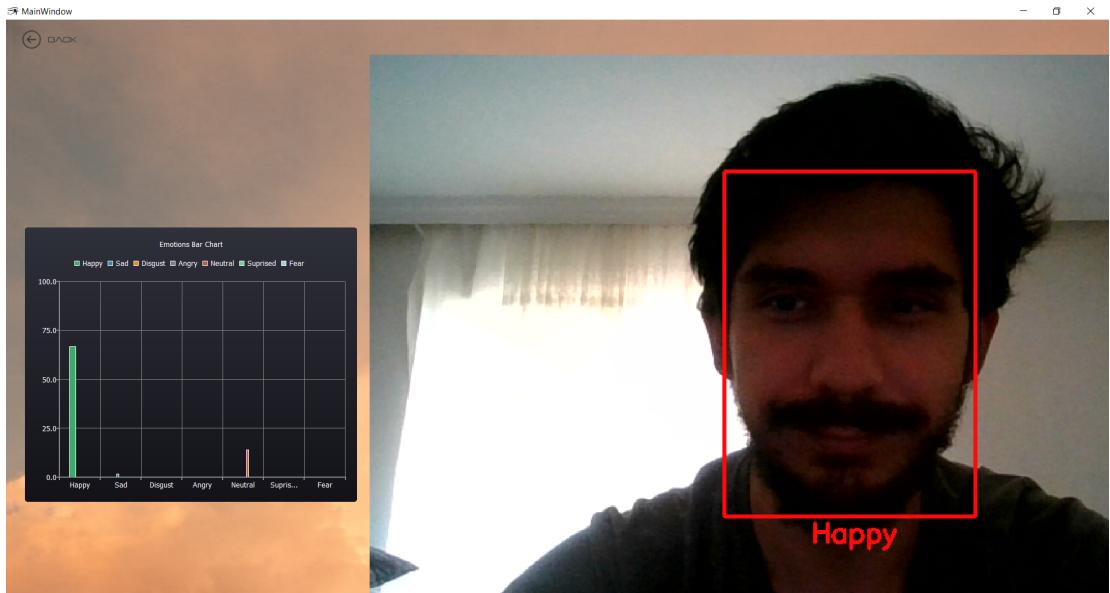


Figure 3: Horus Single User Mode Screen

This screen comes up if the “single user” mode is selected. The user can go back to the mode selection menu by clicking on the “back” button. The camera needs to be open for the analysis. When clicked on the replay button, the analysis starts from the beginning, when the pause button is clicked, the analysis stops and the analysis continues when the play button is clicked. If the “go to results” button is pressed, the analysis stops and the results are saved. With the “upload from the computer” button on the top right corner, videos or photos can be uploaded for scan instead of using the camera. An error message is shown if a face cannot be detected after some time. The drawer on the left side shows the real time results.

2.2 Crowd Control Mode

2.2.1 Crowd Control Mode: Selecting Camera(s) Screen

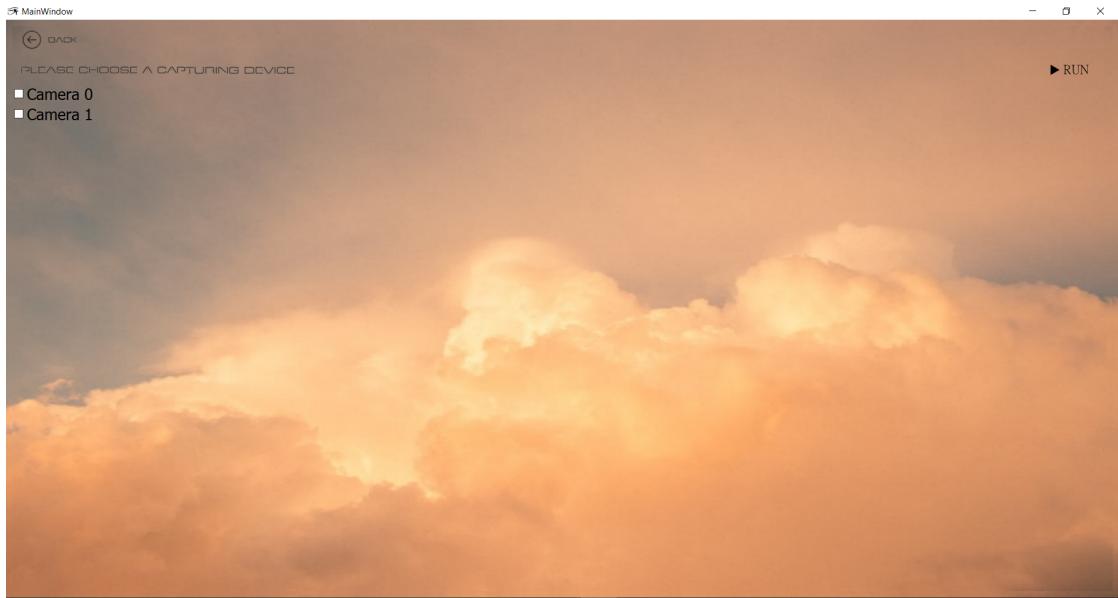


Figure 4: Selecting Camera(s) Screen

This is the screen where the user chooses the hardwares that s/he wants to use as cameras. It comes after selecting the “crowd control” mode. Multiple devices can be chosen by clicking on.

2.2.2 Crowd Control Mode Screen

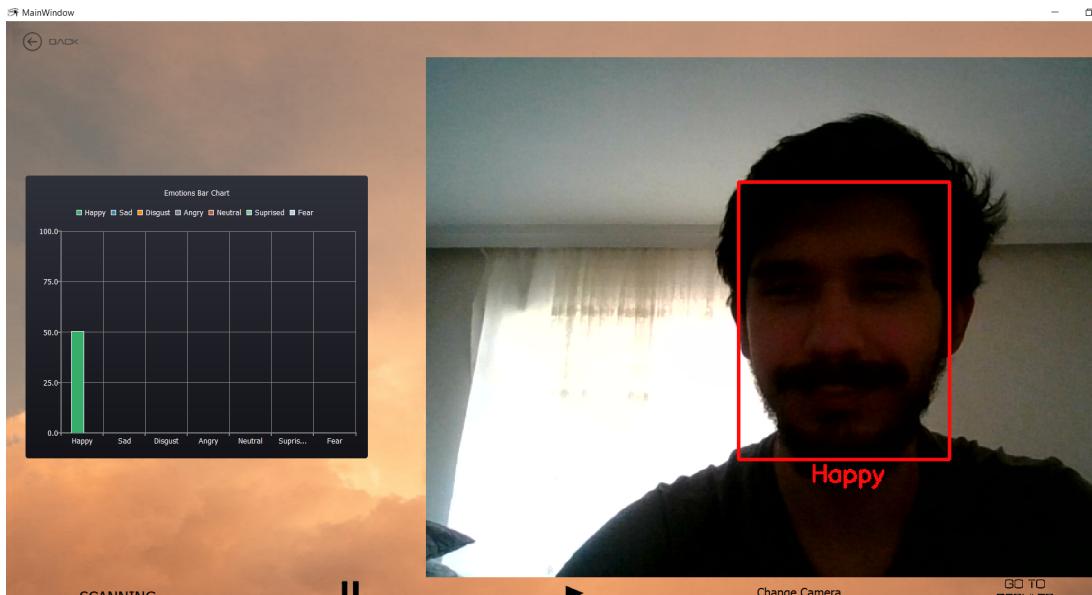


Figure 5: Crowd Control Mode Screen

This screen comes up if the “crowd control” mode is selected. The user can go back to the mode selection menu by clicking on the “back” button. The camera needs to be open for the analysis. If multiple cameras are selected, the screen splits into the number of cameras selected. When clicked on the replay button, the analysis starts from the beginning, when the pause button is clicked, the analysis stops and the analysis continues when the play button is clicked. If the “go to results” button is pressed, the analysis stops and the results are saved. With the upload from the computer button on the top right corner, videos or photos can be uploaded for scan instead of using the camera. An error message is shown if a face cannot be detected after some time.

2.3 Deception Detection Mode

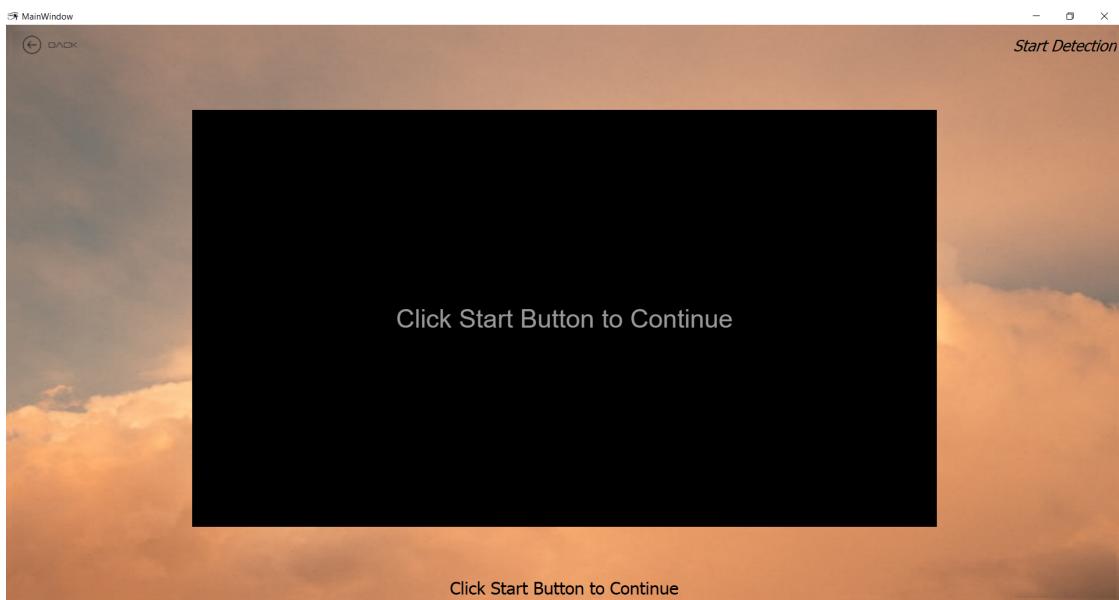


Figure 6: Deception Detection Mode Start Screen

This is the screen that comes up if the “deception detection” mode is selected. The user can go back to the mode selection menu by clicking on the “back” button. The camera needs to be open for the analysis. It waits for the user to stand still and after the face is detected it forwards the user to the next screen. An error message is shown if a face cannot be detected after some time.

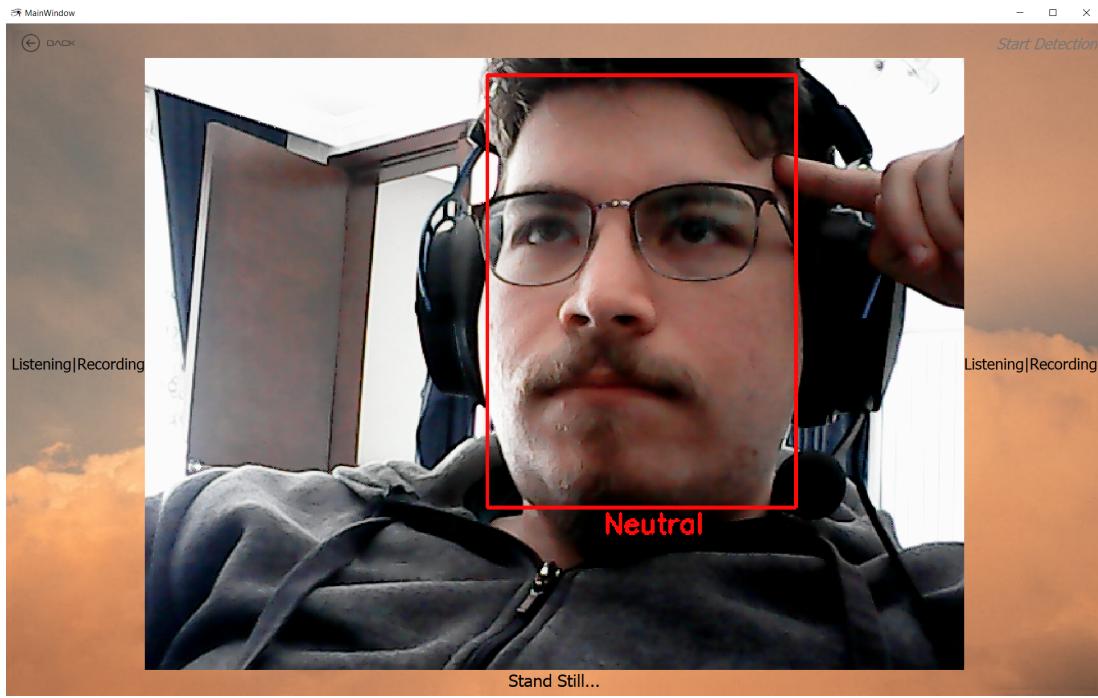


Figure 7: Deception Detection Mode Processing Screen

This is the screen that comes up after the face is detected in the “deception detection” mode. The user can go back to the mode selection menu by clicking on the “back” button. The camera needs to stay open for the analysis. It asks the user to compose a sentence. An error message is shown if a sentence cannot be received after some time.



Figure 8: Deception Detection Mode Truth Screen



Figure 9: Deception Detection Mode Lie Screen

This is the screen that comes up in the “deception detection” mode after the sentence is accepted. The user can go back to the mode selection menu by clicking on the “back” button. The result is shown in a pop up. It can be either “A lie” or “Not a lie”. By closing the pop up, the user can remake a test.

2.4 List Last Analyses Mode

2.4.1 Choose an Analysis Screen

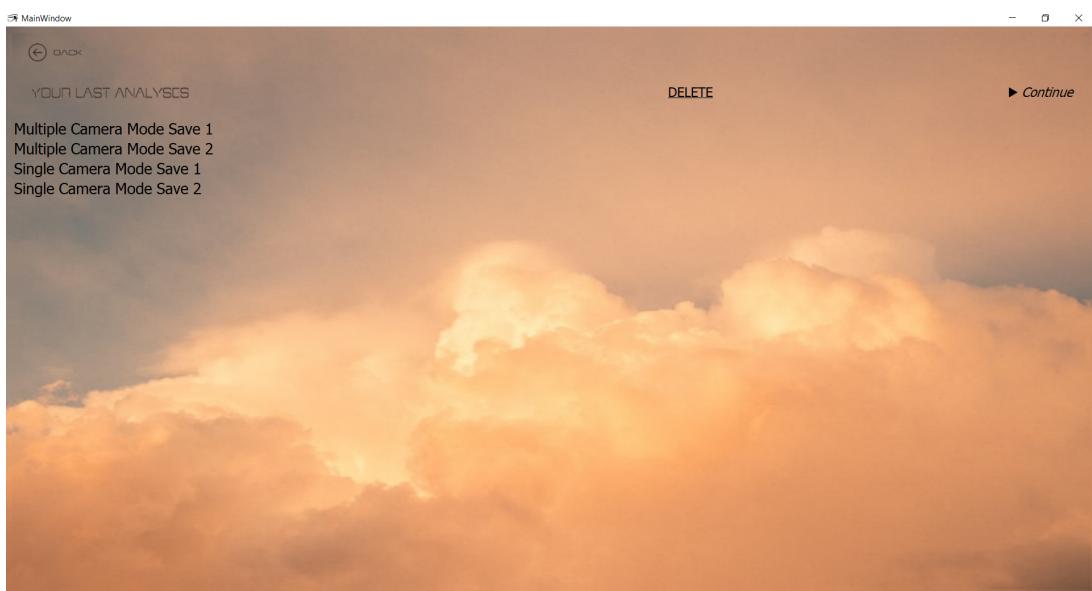


Figure 10: List Last Analyses Mode Choose Analysis Screen

This is the screen that comes up if the “list last analyses” mode is selected. The user can go back to the mode selection menu by clicking on the “back” button. The last analyses are shown with their type and dates. By clicking on one of the scans, the analysis can be viewed.

2.4.2 Choose Output Type Screen

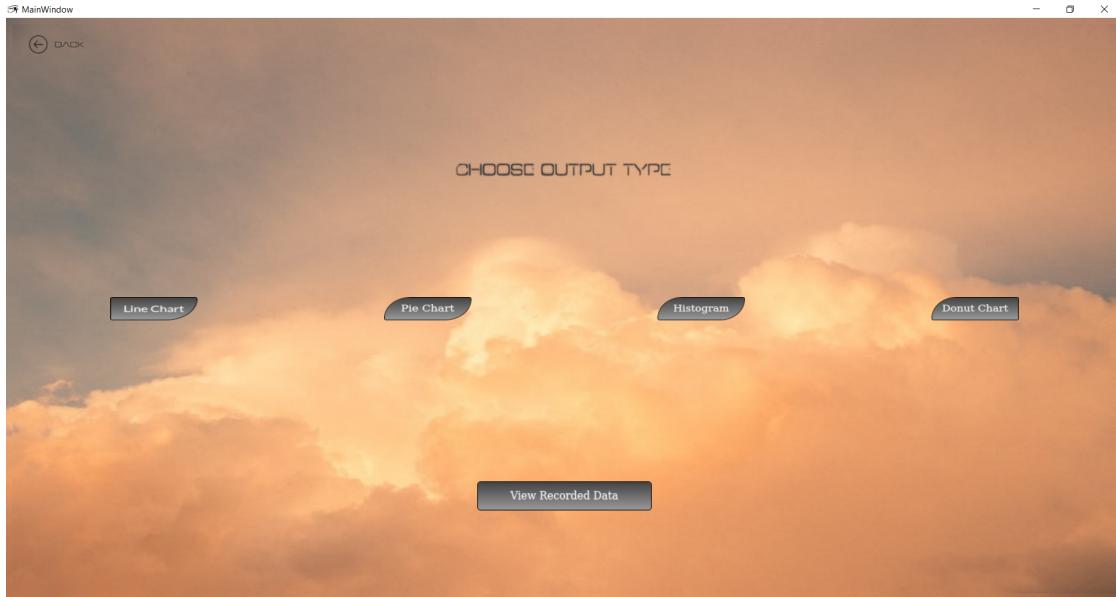


Figure 11: List Last Analyses Mode Choose Output Type Screen

This is the screen that comes up after one of the analyses is chosen in the “list last analyses” mode. The user can go back to the mode selection menu by clicking on the “back” button. The output result can be chosen to be line chart, pie chart, histogram or donut chart. By pressing the “View Recorded Data” the analysis can be seen as the desired output type.

2.4.3 Analysis Screen

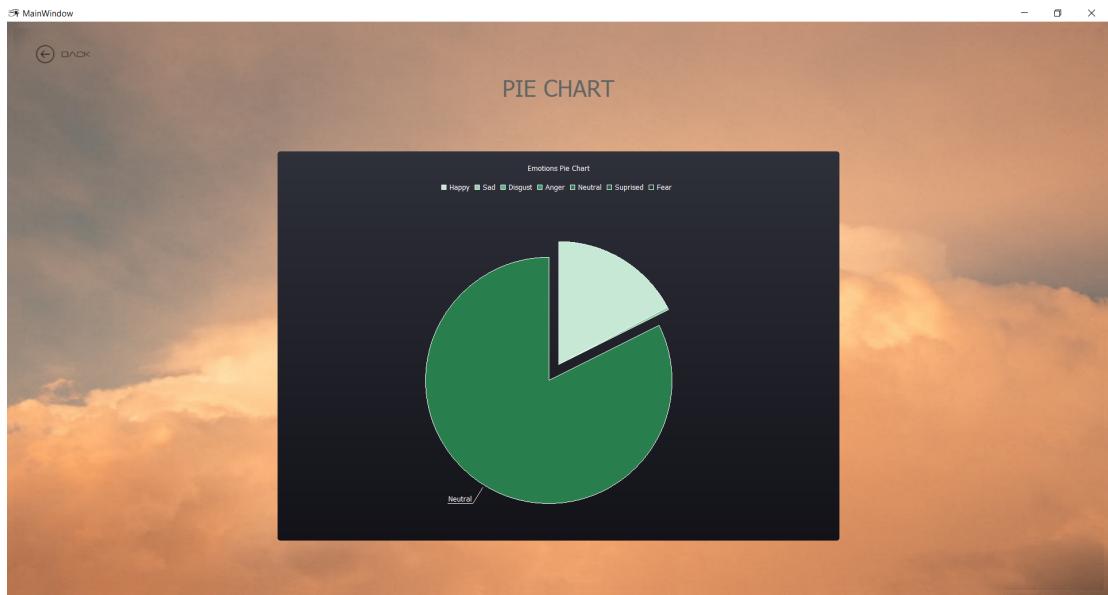


Figure 12: List Last Analyses Mode Pie Chart Output Screen

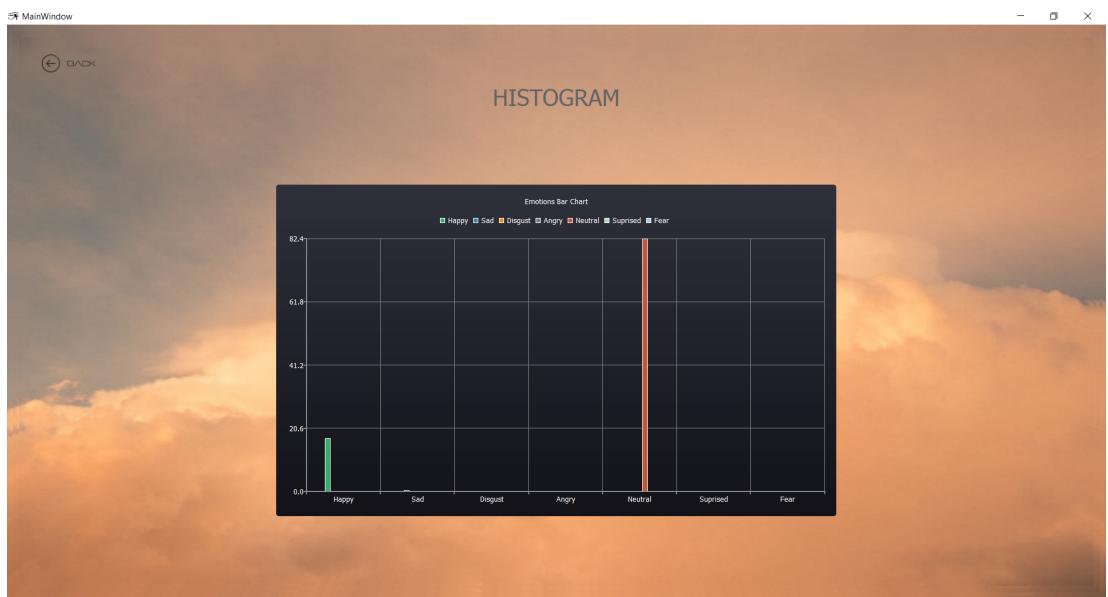


Figure 13: List Last Analyses Mode Histogram Output Screen

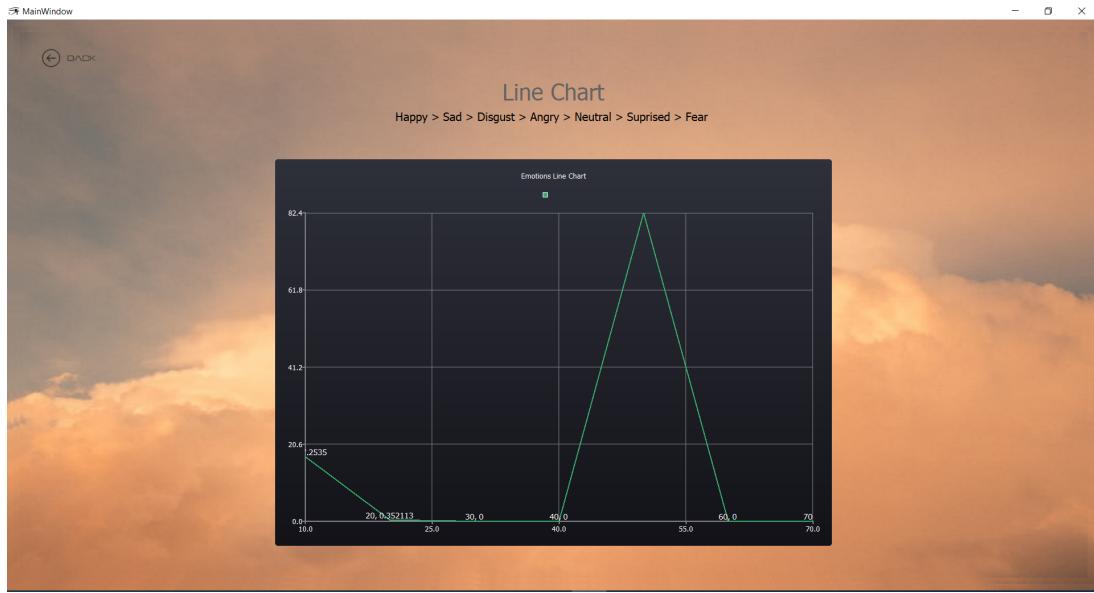


Figure 14: List Last Analyses Mode Line Chart Output Screen

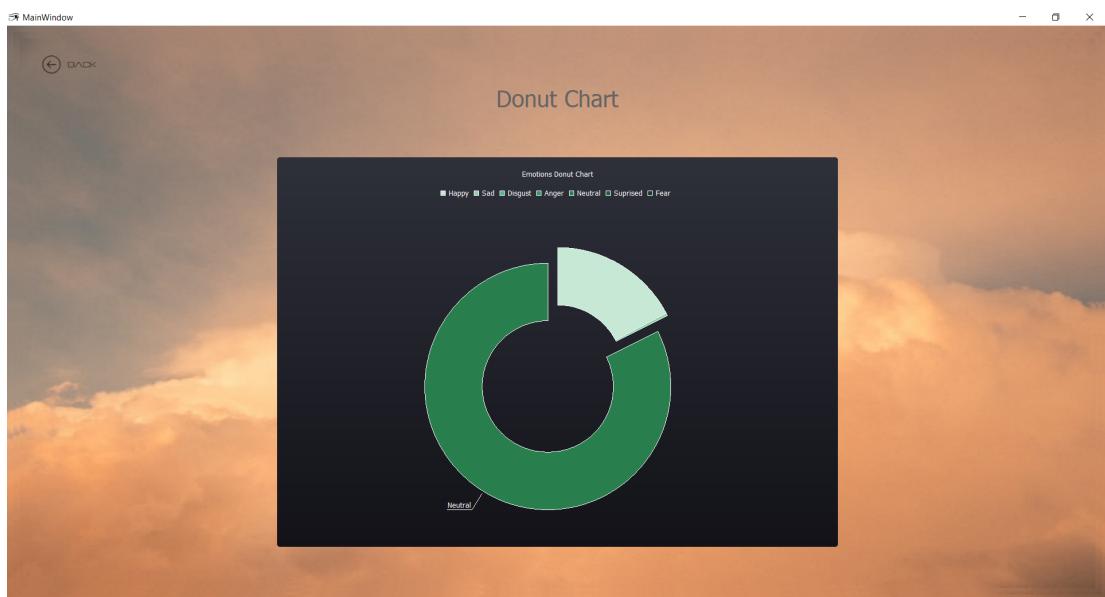


Figure 15: List Last Analyses Mode Donut Chart Output Screen

This is the screen that comes up after the analysis output type is chosen in the “list last analyses” mode. The user can go back to the mode selection menu by clicking on the “back” button. The result is shown with the selected graph type.

2.5 Screen Capture Mode

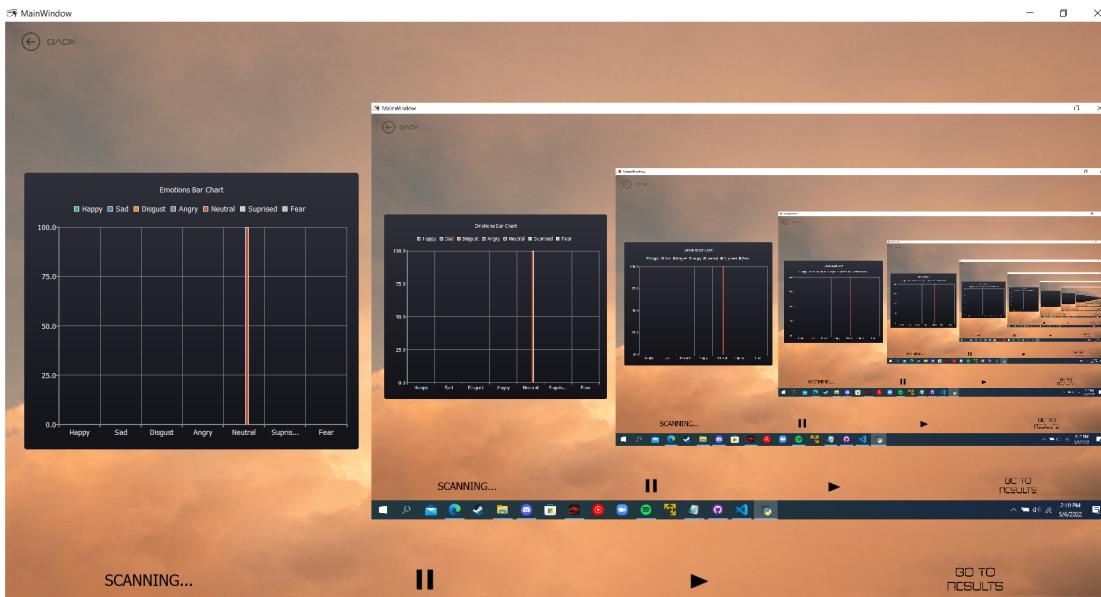


Figure 16: Screen Capture Mode Screen

This screen comes up if the “screen capture” mode is selected. The user can go back to the mode selection menu by clicking on the “back” button. The screen capture/share needs to be open for the analysis. When clicked on the replay button, the analysis starts from the beginning, when the pause button is clicked, the analysis stops and the analysis continues when the play button is clicked. If the “go to results” button is pressed, the analysis stops and the results are saved. An error message is shown if a face cannot be detected after some time.

3. Mobile App

3.1 Screen Menu

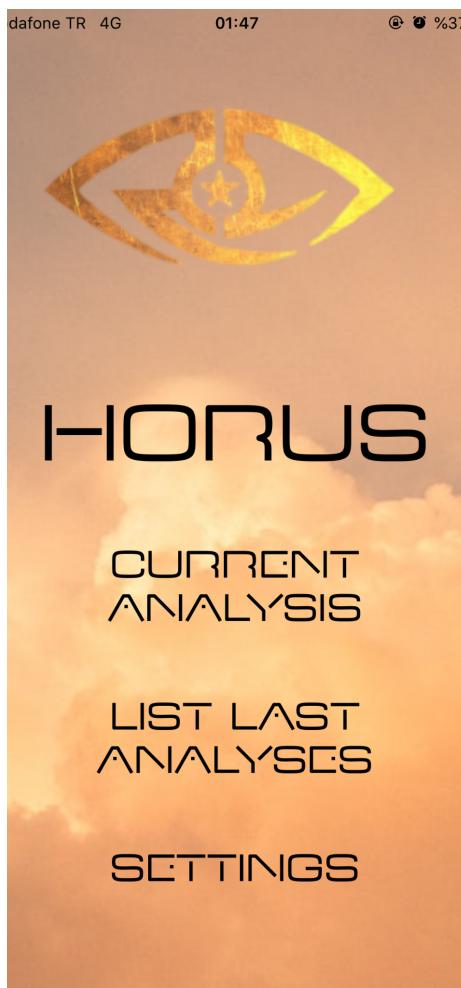


Figure 17: Horus App Start Screen

This is the menu screen that the user will choose what s/he wants to do. “Current analysis” can be chosen to track the current analysis in real time, “list last analyses” can be chosen for viewing the analyses of the scans done before and “settings” can be chosen to adjust bluetooth settings. If there is no current analysis at the moment, that option cannot be chosen.

3.2 Current Analysis Screen

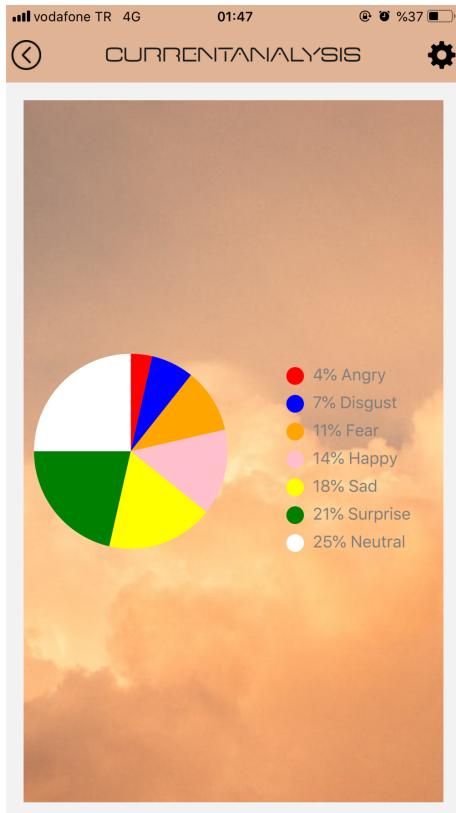


Figure 18: Horus App Current Analysis Screen

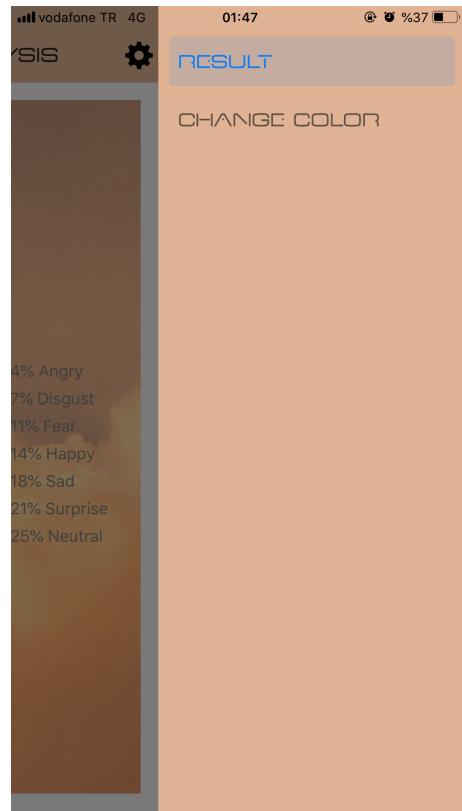


Figure 19: Horus App Current Analysis Settings Screen

This screen comes up if the “current analysis” option is chosen. It shows the graph of the current analysis in real time if there is an analysis running at the moment. The user can go back to the main menu by clicking on the “back” button. When the settings button on the top right corner is clicked, the drawer menu comes in. In that menu, the user can change the color of the graph.

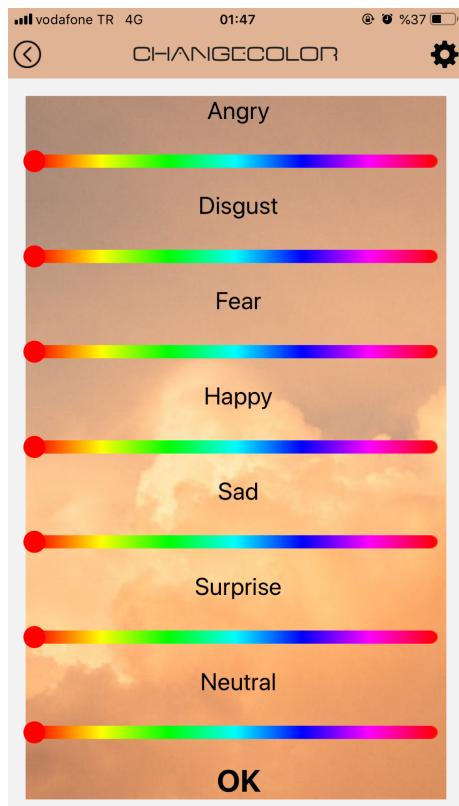


Figure 20: Horus App Current Analysis Change Color Screen

This screen comes up if the change color option is chosen. With sliders a color can be chosen for each emotion type and when the ‘OK’ button is clicked, the colors are set.

3.3 Choose Analysis Screen



Figure 21: Horus App List Last Analyses Screen

This screen comes up if the “list last analyses” option is chosen. The user can go back to the main menu by clicking on the “back” button. The scans made before are listed and the user can choose one of them.

3.4 Analysis Screen

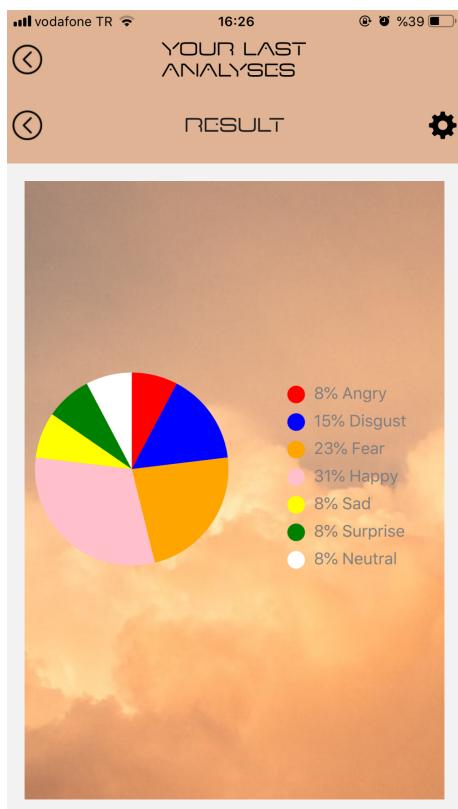


Figure 22: Result of the Desired Scan

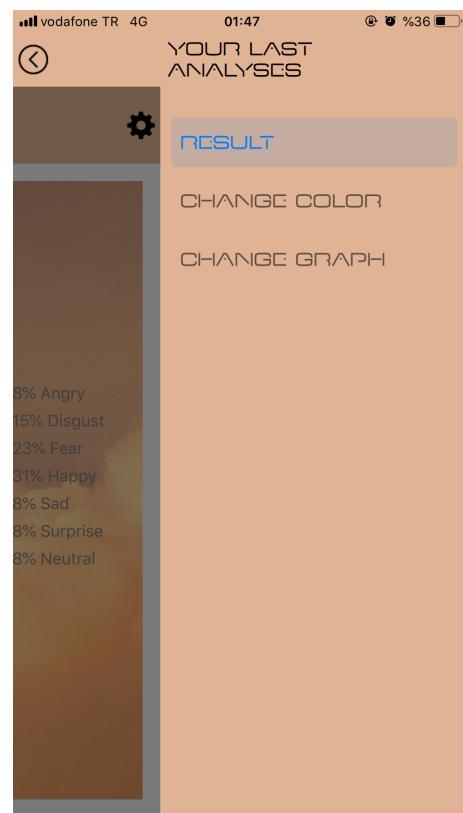


Figure 23: Horus App Current Analysis Settings Screen

This screen comes up if the desired scan is chosen under ‘list last analyses’ option. It shows the graph of the current analysis in real time if there is an analysis running at the moment. The user can go back to the main menu by clicking on the “back” button. When the settings button on the top right corner is clicked, the drawer menu comes in. In that menu, the user can change the color of the graph and the graph type.



Figure 24: Horus App Current Analysis Change Graph Screen

This screen comes up if the ‘change graph’ option is chosen. The graph type can be chosen by clicking one of the ‘bar’, ‘pie’ or ‘line’ buttons.

3.5 Settings Screen



Figure 25: Horus App Settings Screen

This screen comes up if the settings option is chosen. The user can see the bluetooth connection setting. However, bluetooth connection is not functional at the moment.