**CST8354 – Industrial Design and Testing**

**Facial Analysis System – Test Plan**

**Team: Green Bit**

**Date: April 18th, 2019**

**UI Testing**

**On Screen Button Unit Test**

For testing we used simulation testing and manually determined each test result.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Button*** | ***Description*** | ***Key binds*** | ***Output/Result*** | ***Acceptance Criteria*** | ***Pass/Fail*** |
| Facial Analysis | Switches the video processing to data analysis mode | Control-g | Calls the setemotion function, invoking the emotion detection class, and processes the video stream for emotion results | Function to start Facial Analysis mode is called and succeeds | Pass |
| Normal Mode | Switches the video to normal mode. | Control-f | Calls the setnormal function to switch video stream to normal mode | Function to start Normal View mode is called and succeeds | Pass |
| Emotion Detection | Switches the video processing to Emotion Detection mode | Control-h | Calls the setdlib function, invoking the facial analysis class, and processes the video stream for facial data results | Switches the video processing to output Emotion Detection | Pass |
| Save Emotion Data | Saves the data in the emotion text box to a csv file | Control-s | Emotion data stored in a csv file for the user | Button calls appropriate function (saveEmotionData) | Pass |
| Save Facial Data | Saves the data in the facial analysis text box to a csv file | Control-s | Facial data stored in a csv  File for the user | Button calls appropriate function (saveDlibData) | Pass |
| REC – Record | Records the current video stream | Control-r | Proceeds to prompt for file input | Function to start Recording the video stream is called and succeeds, with notifier on screen being displayed | Pass |
| Exit button X | Closes the application | Control-q | Calls a function to close the application | Function to check if video is recording or not and closes application | Pass |

**Menu Bar Button Unit Tests**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Button*** | ***Description*** | ***Key binds*** | ***Output/Result*** | ***Acceptance Criteria*** | ***Pass/Fail*** |
| File->Open | Opens a file | Control-o | Prompts user to open a file, and if the any file format for video | Function call to open a video file | Pass |
| File->Save Data | Opens a message box, prompting user to choose which data they would like to save. | Control-s | Message box prompts user for which data to save | Opens the message box to prompt user to choose which data to save | Pass |
| File->Save Data-> Message box -> Save Facial Data | Saves the data in the facial analysis text box to a csv file | N/A | Button calls appropriate function (saveDlibData) | Function call to save the facial data | Pass |
| File->Save Data-> Message box -> Save Emotion Data | Saves the data in the emotion text box to a csv file | N/A | Button calls appropriate function (saveEmotionData) | Function call to save the emotion data | Pass |
| File->Record | Records the current video stream | Control-r | Function to start Recording the video stream is called and succeeds, with notifier on screen being displayed | Function call to start recording the video stream and notifier on screen is visible | Pass |
| File->Stop Recording | Stops and saves the recording | Control-t | Function to stop Recording the video stream is called and succeeds, notifier for recording becomes hidden | Function call to stop recording the video stream notifier on screen is hidden | Pass |
| File->Exit | Exits the Application | Control-q | Function to check if video is recording or not and closes application | Function call to check if video is recording or not and closes application | Pass |
| View->Detect Colors | Switches the video processing to output Detect Colors Mode | Control-d | Function to start Detect Colors mode is called and succeeds | New window opens containing the color detection mode | Pass |
| View->Change View->Normal View | Switches the video processing to Normal Mode | Control-f | Function to start Normal View mode is called and succeeds | Function call to start Normal View mode | Pass |
| View->Change View->Facial Analysis | Switches the video processing to output Facial Analysis Mode | Control-g | Function to start Facial Analysis mode is called and succeeds | Function call to start Facial Analysis mode | Pass |
| View->Change View->Emotion Detection | Switches the video processing to output Emotion Detection | Control-h | Function to start Emotion Detection mode is called and succeeds | Function call to start Emotion Detection mode | Pass |
| Help->About | Opens a Message box with info about the authors | Control-i | Message box window pops up | Message box pops up and displays information about the software | Pass |

**Function Testing**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Function Name*** | ***Description*** | ***Output/Result*** | ***Acceptance Criteria*** | ***Pass/Fail*** |
| saveEmotionInfo | Saves data collected in the emotion text box to csv file format | Emotion data is saved and printed into a table displaying the results. | Retrieves the data from the entry boxes and emotion text box to generate a csv file | Pass |
| SaveDlibInfo | Saves data collected in the facial analyses text box to csv file format | Facial Data is saved and printed into a table displaying the results. | Retrieves the data from the entry boxes and facial data text box to generate a csv file | Pass |
| detect\_color(self) | It detects RGB values from video frame by frame. | Square boxes on the object, stating the color name on it. | Detect color mode window pops up and colors can now be detected through the live video stream | Pass |
| record | Video write object stores the video frame by frame in .avi format. | “REC” text appears on the window of the Gui to show the user that recording has been started | Recording of the video stream starts and a notifier is visible on screen | Pass |
| stop\_recording | To the stop the recording of the live feed | Pops up the option for saving the recorded feed. | Prompts the user, yes/no for confirmation and proceeds. If yes, recording stops and a file is saved | Pass |
| openfile | To re-run the recorded live feed from webcam | A recorded file is played again | Open file explorer pops up, opens a video file to be played | Pass |
| setEmotionResults | Used to retrieve the current emotion from Emotion capture | The correct output from the emotion capture class has been received and set to a string, ready to be used to display the results. | Writes the emotion values generated from emotion detection to a data table, and Sets the emotion display text | Pass |
| setdlibResults | Used to retrieve the aspect ratios and the state of the eyes (Opened/closed) | The correct output from the facial capture class has been received and set to a string, ready to be used to display the results. | Writes the data values generated from facial analysis to a data table, and Sets the facial data display text | Pass |
| getDlibResults | Returns the current aspect ratios and the state of the eyes (Opened/closed), used to display the results | The string that was created from the setdlibResults function has been placed into a variable to be used to display the results in the update function | Returns the facial data display text | Pass |
| getEmotionResults | Returns the current emotion state, used to display the results | The string that was created from the setEmotionResults function has been placed into a variable to be used to display the results in the update function | Returns the emotion display text | Pass |