Jarvis Emulator
Test Results
COP 4331, Fall 2015

Modification History

Version	Date	Who	Comment
v0.0	12/1/2015	Jimmy Lam	Worked on Document

Team Members:

- Jimmy Lam
- Julian Rojas
- Manuel Gonzalez
- Robin Schiro

Differences between planned testing and actual testing.

We've given Jarvis a preset dictionary of commands to improve the speech recognition. Jarvis won't be able to recognize commands outside this dictionary, which slightly changes the actual testing of test #11. Test #15 has also changed as well. While Jarvis is able to detect multiple users, he does so by seeing who is closer to the webcam instead of detecting mouth movement, since the detection of mouth movement would be too complex for us to implement in a reasonable amount of time.

Testing Results

It is assumed that the application is already running in every test case.

1. Facial Recognition	
Objective: Verify that the faces of different users are accurately recognized.	
Test Conditions: There are two or more trained users present ("trained user" is defined in SRS).	
Description:	**Expected Results:**
1. Have one user walk into view of the webcam (within five feet, facing the camera).	The application should greet that user by name.
2. Have the first user exit the room and a different user enter the room. This user should stand in a position similar to that described in Step 1.	The application should greet the new user by name.

Testers: Jimmy Lam
Date Tested: 12:32 AM 12/2/2015
Testing Environment: Windows 10
Result: Pass

2. Face Tracking	
Objective: Ensure that the application can track the position of a user's face.	
Test Conditions: See Test Environment	
Description:	**Expected Results:**
1. Click the 'Enable Tracking' button located in the 'Video Feed' tab of the application window.	A video feed coming from the webcam should appear inside the tab space.
2. Toggle the 'Display tracking borders' option on.	You should see a square surrounding the face of each user in view of the webcam (as long as those users are facing the camera).

Tester: Jimmy Lam
Date Tested: 12:33 AM 12/2/2015
Testing Environment: Windows 10
Result: Pass

3. User Interface – Training – New User	
Objective: Verify that a new user can provide training data to the application.	
Test Conditions: The user has not already provided training data to the application.	
Description:	**Expected Results:**
1. Go to the 'Configuration' tab and click the 'New User' button.	You should be redirected to the video feed tab. The feed should be visible, with 'Display tracking borders' enabled.
2. Enter the name of the new User at the top of the 'Video Feed' tab. 3. Press the 'Take Snapshot' button as many times as you'd like, preferably with your face at various angles and with various expressions.	The training pictures should be stored in the folder specified within the 'Configuration' tab (default to the folder called 'TrainingData' in the same directory as the executable). The pictures for the user should be in a folder named after the user in the 'TrainingData' folder.

Tester: Jimmy Lam
Date Tested: 12:35 AM 12/2/2015
Testing Environment: Windows 10
Result: Pass

4. User Interface – Training – Existing User	
Objective: Verify that an existing user can provide additional training data to the application.	
Test Conditions: The user's profile has already been created.	
Description:	**Expected Results:**
1. On the 'Configuration' tab, select your name from the 'Current User Profile' dropdown menu. 2. Click the 'Continue Training' button.	You should be redirected to the video feed tab. The feed should be visible, with 'Display tracking borders' enabled.
3. Press the 'Take Snapshot' button as many times as you'd like, preferably with your face at various angles and with various expressions.	The training pictures should be stored in the folder specified within the 'Configuration' tab (default to the folder called 'TrainingData' in the same directory as the executable). The pictures for the user should be in a folder named after the user in the 'TrainingData' folder.

Tester: Jimmy Lam
Date Tested: 12:40 AM 12/2/2015
Testing Environment: Windows 10
Result: Pass

5. User Interface – Configuration	
Objective: Verify that a user can customize his/her profile for the application.	
Test Conditions: Must be a trained user.	
Description:	**Expected Results:**
1. On the 'Configuration' tab, select your name from the 'Current User Profile' dropdown menu. 2. In the 'Applications' area of this tab, input a string of words in the 'Trigger Words' field. In the corresponding 'Application Path' field, browse and select an application that you will interact with using your inputted trigger words. 3. In the 'Websites' area of this tab, input a string of words in the 'Trigger Words' field. In the corresponding 'Website URL' field, input the URL of the website that you will interact with using your inputted trigger words. 4. Click the 'Save' button and close the application. 5. Reopen the application, go to the 'Configuration' tab, and select your name from the 'Current User Profile' dropdown menu.	You should see the configuration settings that you had set before you had closed the application.

Tester: Jimmy Lam
Date Tested: 1:10 AM 12/2/2015
Testing Environment: Windows 10
Result: Pass

6.	Voice Command

Objective: Verify that Jarvis can recognize user voice commands.

Test Conditions: The user is logged in and said the command clearly.

Description:	Expected Results:
4. A list of commands will be prepared and will be read clearly to Jarvis while using a microphone.	Jarvis should correctly output the words that the user said and respond accordingly.

Tester: Jimmy Lam
Date Tested: 1:25 AM
Testing Environment: Windows 10
Result: Pass

7.	Open other applications

Objective: Verify that Jarvis can open other applications.

Test Conditions: The user is logged in and clearly tells Jarvis to execute a valid command.

Description:	Expected Results:
1. A list of windows applications will be made. 2. Jarvis will be instructed to open each application in a new window.	Jarvis should open up the application that the user called for in a new window.

Tester: Jimmy Lam
Date Tested: 1:27 AM 12/2/2015
Testing Environment: Windows 10
Result: Pass

8.	Logging out

Objective: Verify that Jarvis can log the user out of his or her computer.

Test Conditions: The user is logged in and said the command clearly.

Description:	Expected Results:
1. Jarvis will be told to log out of the computer.	Jarvis should be able to log the user out of his or her computer.

Tester: Jimmy Lam
Date Tested: 2:10 AM 12/2/2015
Testing Environment: Windows 10
Result: Pass

9. Taking pictures of the user	
Objective: Verify that Jarvis can take a picture of the user for the user.	
Test Conditions: The user is logged in, positioned in front of the camera, and said the command clearly.	
Description:	**Expected Results:**
1. A keyword for taking the picture will be said to Jarvis, and the user will pose for Jarvis. 2. The user will then check for the picture in the file that Jarvis saves it in.	Jarvis will take the picture and store it in a folder set by the user.

Tester: Jimmy Lam
Date Tested: 1:36 AM 12/2/2015
Testing Environment: Windows 10
Result: Pass

10. Notifying the user through speech	
Objective: Verify that Jarvis can correctly notify the user of system specific events.	
Test Conditions: The user is logged in.	
Description:	**Expected Results:**
1. A list of fake events will be created (such as "System failure", "System busy", "Answer found", etc.) 2. Each event will be triggered during runtime and with a user present.	Jarvis will verbally inform the user of the respective event once the event gets posted internally in the system.

Tester: Jimmy Lam
Date Tested: 12:55 PM 12/2/2015
Testing Environment: Windows 10
Result: Pass. Jarvis is able to respond according to user's preset commands.

11. Verbal response from user questions	
Objective: Verify that Jarvis can respond accordingly to preset user questions.	
Test Conditions: The user is logged in and said the question clearly	
Description:	**Expected Results:**
1. The user will ask "How are you, Jarvis?"	1. Jarvis should verbally respond with a general status of the system.
2. The user will ask "Who am I, Jarvis?"	2. Jarvis should state the name of the user, or say that it doesn't know the user.
3. The user will ask "How's the day today, Jarvis?"	3. Jarvis should verbally respond with the weather report from that day, or notify the user that he doesn't have that information if

	the data is not available within 1 minute of the request.
4. The user will ask "What model is my car?"	4. Jarvis should respond that it doesn't know this answer.

Tester: Jimmy Lam
Date Tested: 12:50 PM 12/2/2015
Testing Environment: Windows 10
Result: Pass. We've limited Jarvis's recognition vocabulary to improve recognition. Jarvis can respond to user commands and when the user asks for the weather, but not "Who am I, Jarvis" or questions not in Jarvis's speech dictionary.

12. System response	
Objective: Verify that Jarvis' average response time is below 5 seconds.	
Test Conditions: The user is logged in.	
Description:	**Expected Results:**
1. Try a minimum of 10 randomly chosen events, commands or questions consecutively.	Jarvis should respond or notify the user accordingly within the 5 second threshold.

Tester: Jimmy Lam
Date Tested: 12:28 PM 12/2/2015
Testing Environment: Windows 10
Result: Pass

13. Memory usage	
Objective: Verify that Jarvis uses no more than 1GB of memory.	
Test Conditions: The user is logged in.	
Description:	**Expected Results:**
1. Have the system working for several days without shutting it down.	When monitoring memory usage and storage they shouldn't go over the threshold.

Tester: Jimmy Lam
Date Tested: 11:56 AM 12/2/2015
Testing Environment: Windows 10
Result: Pass

14. Jarvis acquires information from RSS Feed	
Objective: Verify that Jarvis can utilize weather forecast/news headlines data from a website.	
Test Conditions: Jarvis has already recognized the user. User says command clearly.	
Description:	**Expected Results:**
1. The user will speak to Jarvis through the microphone. 2. Jarvis will then recognize the keyword and match it with the command associated with it.	Jarvis will then pull information from RSS Feed or website's API, and either display it on the screen or speak it back to the user.

Tester: Jimmy Lam
Date Tested: 11:51 AM 12/2/2015
Testing Environment: Windows 10
Result: Pass

15. Detection of Active User – Multiple Users in View	
Objective: Verify that Jarvis can detect a user's mouth movement.	
Test Conditions: All involved users are trained users. There are at least two faces in view of the camera.	
Description:	**Expected Results:**
1. The user will speak to Jarvis. 2. Jarvis will detect multiple faces. 3. Jarvis will select an active user once it has noticed mouth movement.	If two or more users are present, Jarvis will try to recognize the active user depending on whether or not he/she is talking, hence mouth movement.

Tester: Jimmy Lam
Date Tested: 10:15 AM
Testing Environment: Windows 10
Result: Pass. Jarvis cannot detect mouth movement but can detect multiple users in the room depending on who is closer to the web cam.

Conclusion

We've passed our tests, however, test results with explanations were the result of changes to improve Jarvis, or to make the project completion more feasible.