UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

NEO TANDEM TECHNOLOGIES

User Manual
V0.1

Author:	*Student number:*
Duran Cole	u13329414
Michael Nunes	u12104592
Molefe Molefe	u12260429
Tebogo Seshibe	u13181442
Timothy Snayers	u13397134

July 27, 2015

Contents

DOCUMENT REVISIONS

Version: Version 0.0:Initial creation of document
Version: Version 0.1:Added basic content relating to Introduction,Processes and Appendix.

1 Introduction

1.1 Scope and Purpose

The purpose of this eye-tracking software is to provide the user with a eye-tracking software which will allow for the tracking of the eye on 2D and 3D models and videos.The system is centred around making eye-tracking possible for all media types.

1.2 Process Overview

There are a few core process that have been implemented and that will allow for more effective eye-tracking across mediums.The process are as follows:

- Eye tracking on 2D and 3D models and videos.

- Creation of heat maps from eye-tracking.

- Saving heat map on specific media.

The following process listed are the core of this program as they carry out the basic and most important functionality of this software.

2 Configuration

2.1 System Configuration

2.1.1 Minimum Hardware requirements

- 1.6 GHz or faster processor

- 4GB of RAM

- 1GB of available hard disk space

- 5400 RPM hard drive

- DirectX 9-capable video card

- Internet connection required

2.1.2 Recommended Hardware requirements

- 2.6 GHz or faster processor

- 8GB of RAM

- 2GB Graphics Card

- 1GB of available hard disk space

- 5400 RPM hard drive

- DirectX 9-capable video card running at 1024 x 768 or higher display resolution

- Internet connection required

2.1.3 Recommended Software requirements

- The EyeTribe software. That comes with the EyeTribe camera.

- Windows Media Player Version 12

2.1.4 Recommended External Devices

- The EyeTribe eye-tracking camera.The camera can be purchased here ...

2.2 Installation

Please ensure that you meet the minimum requirements.It it is recommended that you meet the recommended requirements as this will ensure that the best performance is achieved.

Installation instructions will be filled in later.

3 Getting Started

The program is made to run with as little configuration as possible.There are no authentication processes that are associated with the program.The user will be able to just run the application and use it if the minimum requirements have been met.

3.1 Basic use

Once the application is run the user will be presented with a screen which will allow them to select the option to start a new recording session or use a previously created session.A new form will pop up with options to navigate to different sections of the application.The calibration button will navigate to the calibration page will allow the setup of the EyeTribe eye camera.This form will allow you to calibrate the camera to ensure that the data recorded is correct.The calibration process will be discussed further in section ... .The recording button on the main page will open the recording set up.This page will allow the user to select the type of recording which will then take them to the appropriate pages to do the recording.The recording the page will allow for recording on the selected media.You would select the appropriate media and then start the recording.The data will then be saved and then used to make the heatmaps and all

the associated files.

The application can be exited easily by just pressing the exit button(red cross) on the top right of the application.This will end the application and end all its accompanied processes.This will ensure that the application does not cause harm to the computer.

4 Using the System

The following section will go in to in depth detail about the system and how to use it. This section of the user manual will show you how to perform actions throughout the application.There will also be sections on what to expect from each action.Certain troubleshooting sections will be referenced in this text and if you encounter any of these errors please refer to the troubleshooting section to try and solve the error.

4.1 Starting the program

The program will allow you to perform eye-tracking on different kinds of media.Different media can be recorded and so the program will allow for multiple recordings of the same or different media.The program allows you to create what is known as a eye-tracking recording project.This project is used to keep all the information of your recordings for a specific session.You can always return to the session and continue recording in that project which allows you to move between recording projects.

When the user runs the Eye tracking software a form will appear.The form is split into two sections, start a new recording or to open a existing project.Below are the execution pf both methods

4.1.1 Start a new project

To start a new project you will need to specify a name for the project and location to store all the files.A default name will be given to the project called "project".This will create 3 files and a series of folders in the location selected.The 3 files created are the .eye file which contains all the information about the recording project.This information is all that is needed to continue recordings.The two other files that are created are the settings files for general user settings and then settings for 3D recording.The folders that are created are just the folders for the recording data and the results.Once this all the folders are created then the program will proceed to the main menu.

4.1.2 Open existing project

This will allow you to select an existing project and continue recording.Press the open button to select a file.The only file that will be accepted are .eye files.Once you select the file the settings are loaded up from the files and then the program moves to the main menu for you to continue recording.

4.2   Menu Screen

The menu screen is where the program will allow the user to navigate through the entire application and perform all the tasks.The menu is divided into two sections.The calibration and the recording sections.The calibration button will navigate the user to the configurations page and will allow the user to calibrate the EyeTribe camera.This will need to be done to ensure that the camera is recording the data accurately.There is more detail on the calibration in section ... .The recording option will navigate to the recording setup form which will be used to set up a recording.This will be discussed later on in the manual.While the menu screen offers navigation for the application it also provides a exit point for the application.This is where the the program is exited.This is achieved by pressing the red X in the top right corner of the form.This will safely end the program and ensure that nothing harms the computer

4.3   Calibration Screen

Pressing the calibration button on the menu screen will navigate to the calibration screen.The calibration of the EyeTribe camera is vital as this will ensure that the program will accurately create the heatmaps for the media that has the eye tracking performed on it.This will also allow the user to configure the settings of the recording to their needs.The pressing of the calibration button will open the EyeTribeUIWin program which initiates the server and opens up the calibration.Use the calibration to calibrate the camera.Leave the server window open as this is what will transfer the data from the camera to the program.The server is connected to the internet so also ensure that there is a stable internet connection available.Once you have calibrated you may then proceed back to the menu screen and then start recording.

4.4   Recording Setup Screen

Pressing the Recording button on the menu screen will navigate to the Recording Setup screen.This screen is used to setup the recordings.This screen will allow you to do multiple recordings.These recordings are executed sequentially and can not be performed at the same time.The application will be navigated to either of three screens: 2D recording screen,3D recording screen or the Video recording screen.This navigation will be dependant on the options taken in the recording setup.You will also be allowed to name the recordings,this will create new folder in the recordings directory.The folder will be placed in the appropriate recording type subfolder of the recordings folder.The folder will house all the information about the recordings such as eye-tracking data and also the resulting heatmaps.The screen has a text box for the user to enter the name of the recording.The name should contain only alpha numeric characters so that when the folder is created it will not fail.If it does not follow these rules then it will not be allowed to continue to the next section of the application.There is also a drop down list to select what type of recording is needed to be performed.Once ready then press the start recording to proceed to the recording page.

5 Troubleshooting

6 Appendices

6.1 EyeTribe

The EyeTribe is a low cost development kit this is used with the OGAMA project to track the movement of the eye.The Eyetribe eye tracker includes a SDK(Software Development Kit) that allows the integration of eye tracking on multiple applications on multiple platforms.More information on the EyeTribe and its various components can be found at http://www.theeyetribe.com.

7 Index

This is where the index will be located. Here the user will be able to look for specific words and see where they are located