

Eye Tribe v/s Leap Motion

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Abstract - Just imagine what will happen if you don't have hands? .You won't be able to play android games. Is that so?.Put down your worries when Eye Tribe is with you. The Eye Tribe is a company which develops eye tracking software for android.They have decided to launch developers kit for apps and games.The Eye Tribe has been the first ever in the world of android to make eye controlled software for the android device.It is said that Samsung galaxy S4 have the eye tracking software,But it can recognize whether your face is looking away from it or at it. You can play games ,move your webpages up and down ,lock unlock your screen only using your eyes with the help of this software.You need to tilt the phone in case of smart scroll.with this you can scroll up and down without moving the device.this software will make your hand for no use.we are sure any body can spend a few dollars to take the benefits of such software.

Key words – Eye tribe, leap motion, handless , using eyes

1. INTRODUCTION

The eye tribe is a Danish start up company that produce eye tracking technology and is selling it to software developers for them to incorporate the eyetracking device into their applications and programs .the eye tribe software allows a user to direct a smart phone, tablet or computer with just the look of an eye. Eye tracking or gaze tracking is a technology that consists in calculating the eye gaze point of user as he or she looks around.

A device equipped with a eye tracker enables users to use their eyegaze as an input modality that can be combined with other input device like mouse,keyboard, touch and gestures,referred as active application.Furthermore, eye gaze data collected with an eye tracker can be employed to improve the design of a website or a magazine cover. Applications that can benefit from eye tracking include games, OS navigation ,e-book, market research studies and usability testing.

Eye tracking makes it possible to observe and evaluate human attention objectively and non-intrusively,enabling you to increase the impact of your visual designs and communications.theeyetribe tracker can be employed to collect eye gaze data when the user is presented with different stimuli.e.g. a website ,a user interface ,a commercial or magazine cover . the data collected can then be analysed to improve the design and hence get a better response from customers .

Leap motion ,is an American company that manufactures and markets a computer hardware sensor device that support hand and finger motion as input,analogous to a mouse, but requires no hand contact or touching.the leap motion controller is well constructed and relatively inexpensive. However ,it's more a novelty than a tool. Leap motion ,the minuscule device is as big as a USB flash drive

,pretty handy to operate. There are two cameras and three infrared LEDs installed in the device which make it capable of tracking hands and finger movements in all dimensions.

HISTORY :

Sunealstrup john ,Javier san Augustine, martintall, andhenriksskovsgaard are the four founders of the company started in 2011.the four quickly found their ambition to create eye tracking technology at a affordable cost ,and soon took the rights and ownerships for their ideas from the university where they were working and created their names to "the eye tribe" .the company started to take off in 2011

When the eyetribe participated in the European startup bootcamp accelerator program.after the start upbootcamp ,the company started to make its mark and become more wellknown,earning a spot in the "cool vendors in human – machine interface.

II .TECHNOLOGY:

As of October 2013 ,the eye tribe was getting ready to send out the first shipments of their eye tracking technology. The eye tribe is compatible with Microsoft windows 7 or newer and OSX, but the company is in the process of working on support for other major platforms,such as android.they are selling the device to developers with a simple software development kit using c++ ,c# and java programming platforms.

Main components of the eye tribe tracker are a camera and a high resolution infrared LED Which can easily be set up in a cell phone or mobile device . The eye tribes device uses a camera to track the users eye movement .the camera tracks even the most minuscule movements of the users pupils ,by tracking the images and running them through a computer vision algorithms .

A. EYE MOVEMENTS

Eye movement can be classified into fixations and saccade ;

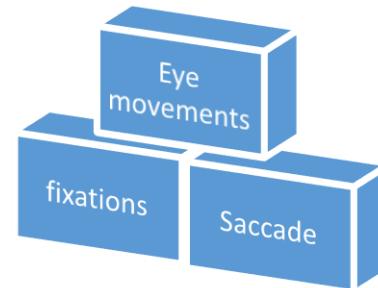


Figure 1: Classification of Eye Movements

Fixation occur when we look at a given point,while saccade occur when we perform large eye move ments.by combining fixations and saccade information from different users ,it is possible to create a heat map of the regions of the stimuli that attracted most interest from the participants

B. USES:

Eye tribe company is developing their eye tracking device in hopes that some time in the near future many products such as smart phones ,tablets and computers will carry eye tribes software .the eye tribe makes it clear that they hope their technology will become versatile,used for many things from games to working ,from browsing the web to security. A game most often used in their demos is fruitninja,an application on most smar phone. The games usually usese a touch screen to slice fruit, but with eye tribe technology, the gamer would just look at the screen and use their gaze to play.the eye tribe is working with other application designs to integrate their technology into other games for pleasure .Eye tribe company often demonstrates how their software woks in their demos by showing some one scrolling down a web page by just strating at the screen .it exemplifies how the device can be hands free when needed ,making it easy and quick to read and browse the web.

C. EYE TRIBE V/S LEAP MOTION

Mouse, keyboard,trackpad, most of these device have been relegated to the realm of aspecific function and extreamergometry.they were required ,and they will be required till eternity. In truth ,only touch screens and track pads have arrived as appropriate alternatives.yet ,these popular device are not good enough to replace the easy to get and inexpensive mouse. Some ground making device like leap motion and eye tribe can statisfy your yearning for motion control.

Eye tribe ,a gadget that came to the world with a mission to take the technology market with a tracker.

It is small device, similar to a USBflash drive which you attach to your pc,lap top or tablet.ther are some alternate motion sensors including the leap motions,kinect and MYO, but an itch for eye tracking is harder to scratch.eye track thus comes as a revolutionary product.

Simple ,it tracks your eyes and figures out where you are looking at.the tracker uses infrared illuminations to create a pattern of reflections ,which are used in our mathematical models to determine the points of gaze.therefore,the device works fine enogh for various purposes such as playing games,eye-activvated login an hand-free typing.

Leap motion ,the miniscule device is as big as usb flash drive ,pretty handy to operate.there are two cameras and three infrared LEDs installed in the device which make it capable of trackin hands and finger movements in all dimensions.when you start using the leap motion,you are asked to calliberate the device by pointing towards a shining surface and moving your finger around .the device is pretty strong,strong enough to detect every tiny movements without any delay.

The real challenge appears when it comes to open an app,or clicking ,in other words,to do so ,you need to push you finger forward with a certain level of perfection.theorectically ,ther is an invisible barrier that seperates movement from action.

III. ADVANTAGES:

Eye tribe is very powerful if we compare it with leap motion ,that later one is here in competitions . itois very accurate and it read the correct instructions almost every time.and needless to say the biggest feature of the eyetribe is its price suits the buget of every individual.

Leap motion is very powerful ,accurate, and easy to use.initially you may face some issues operating the device,particularly while opening an application. You get no idea exactly where that “wall” is located which seperates movements and actions.but after sometime,every thing become easier.

IV. DISADVANTAGES:

The eye tribe is currently in the starting face and needs much improvement.one of the big issues that you feel is while navigating through a page.blink means action for the device .so if you blink in the middle while moving from one icon to other ,the item you blinked on will open.

The leap motion is ideal for exploring google maps and playing games,but this is not what you use your computer for.most of the applikcations do not respond properly when operated with leap motion .

The next drawback is,a longer use of this device may case neck strain and arm pain as you have to keep your hand moving in the air all the time.

The last but not the least ,the way the controller sees your finger tips depends upon your finger being perpendicular to the screen and parallel with the table. you need a high level of expertise to maintain the proper arrangement of yopur fingers and a slight misplacement may result to the device not identifying your instructions.

CONCLUSION

At first instance, the leap motion controller is something we want to fall in love with. however ,we start hating it as we use it. for now, its more of a neat conceptual ‘toy’ and nothing else.

Eye tribe on the other hand, solves all the issues that you had with leap motion with its fast speed ,superior functionality ,easily usability and comfort.

REFERENCES

- [1] http://en.wikipedia.org/wiki/leap_motion
- [2] https://en.wikipedia.org/wiki/The_Eye_tribe