Eye Tracker – A Reading Assistant

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**ABSTRACT**

The use of Eye tracker in everyday life is still in development stages. In recent years, it is being used in gaming industry. This paper focuses the use of Eye-Tracker to recognize the word and reproduce the sound of the word. All the discussed experiments are done using Tobii eye tracker.

**Keywords:**

*Eye tracker, gaming, word, sound, Tobii*

# INTRODUCTION

Eye Tracking is a technology that allows computers to understand what gamers are looking at – using an eye tracker. An eye tracker consists of illuminators and cameras, and with it, you now can complement keyboards, mice, and gamepads as an input method for a new game experience.

Tobii components are designed optimal usage in Tobii eye tracking systems, optimal eye tracking and biometric performance. The Tobii EyeChip is the brain of the eye tracker and includes the EyeCore algorithm. Tobii EyeChip is the result of 15 years of eye tracking condensed into a single SoC. Tobii uses different NIR sensors and illuminators called Tobii EyeSensors. Tobii EyeSensors are a specific set of sensor and illuminators for each design. Tobii uses a combination of custom-designed and standard components. Here, we focus the use of eye tracker in highlighting the word and producing sound when the words are highlighted. Tobii eye tracker interaction engine has various features like eye-gaze point, eye positions, user presence, fixations, gaze aware region, activatable region and pannable region.

We should always do calibration before we use the Eye Tracker. Because, during calibration procedure, the eye tracker measures characteristics of the user’s eye and uses them together with an internal, physiological 3D eye model to calculate the gaze data.

Our experiment mainly helps people having speech disability. People no longer have to worry about teaching their children. Using eye tracker, they can raise their children just like normal people. Eye tracker does very good gob in recognizing the words you see by highlighting it and producing the sound of the word.

# Lessons Learnt

* As a developer, we have limited support from Tobii.
* You need to use SDK provided by Tobii. Building a custom engine is highly challenging.
* There are various options to engage with Eye tracker depending on user requirement.
* Eye tracker is greatly accurate which helps to achieve your experiments.
* Since Eye tracker is mostly used in gaming industry, there are not much resources to help you get started with implementation of new ideas.
* There are lot of things that eye tracker can achieve. Like making payments by detecting the user’s eye, Automate many manual processes etc.
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# ACKNOWLEDGMENTS

Our thanks to ACM SIGCHI for allowing us to modify templates they had developed.

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