

Computer Games Development

Project Report

Year IV

[Muhammad Danial Hakim Bin Nor Azman]

[C00253517]

[Date of Submission]

[Declaration form to be attached]

**Contents**

[Acknowledgements 2](#_Toc54714373)

[Project Abstract 2](#_Toc54714374)

[Project Introduction and/or Research Question 2](#_Toc54714375)

[Literature Review 2](#_Toc54714376)

[Evaluation and Discussion 3](#_Toc54714377)

[Conclusions 3](#_Toc54714378)

[References 4](#_Toc54714379)

[Appendices 4](#_Toc54714380)

# Acknowledgements

I would like to thank the following people who assisted in completing this project including;

John Doe of ACME who kindly agreed to …

I would also like to thank ICME for use of ….

Use this template when writing your research report. As a rule of thumb, the report should be of the order of 10 pages (about 250 words/page).

# Project Abstract

# Project Introduction and/or Research Question

Why should game developers consider utilizing eye tracking technology when developing a game?

In this project, I want to demonstrate that employing an eye tracker, like the Tobii, for game creation or game play is a real possibility. Some gamers are merely unable to play games using conventional methods because of their impairment or disability. For game developers, including eye tracking as an input might increase the number of players, which is an advantage. There aren't many games that support eye tracking, but as gaming has developed over the years, the number of games made to support it has increased.

Summarize the main contributions of the project.

# Literature Review

The fact that gaming is one of the most well-liked pastimes out there and that there are over 3 billion players worldwide—nearly half of the world's population—comes as no surprise (Jovanovic, 2022). 20.5% of casual gamers had disabilities in 2008. This figure does not account for the professional gamers with a range of disabilities, which would bring the total up even higher (Eyeware Beam , 2022). The majority of computer interfaces and game controllers are designed with non-disabled users in mind. With the development of eye trackers and games that allow the use of eye trackers as one of their optional inputs, options for gamers with disabilities have increased. However, using eye trackers when playing games is different like using them while performing normal chores because playing games requires extreme accuracy and quick thinking. Fortunately, technology has advanced significantly, and specialized hardware like TrackIR or Tobii makes tracking quick enough to be employed in video games.

As was already established, most people play video games with a mouse, keyboard, and controller. However, according to studies by Pedro Santana and Joao Antunes, utilizing an eye tracker increased player immersion (João Antunes, 2018). This includes both unfavourable and advantageous consequences. The player may experience increased annoyance, tension, and frustration as a result. The data shows that the player performs better and achieves greater scores when the eye tracker is turned on. A more entertaining experience all around.

Eye tracking technology has other advantages when utilized in video games besides immersion. Response time would be another advantage, as demonstrated in a study conducted by a team of experts from Iraq (Tara Qadir Kaka Muhammad, 2022). The test was carried out in Unity, where the player deflates balloons to get points as they appear on the screen. Prior to the game, the player can select their input options. According to the findings, eye input performs better than mouse input in 45% of cases. Therefore, in addition to mouse input, eye interface technology can be used in the gaming sector.

Eye tracking technology can be utilized to highlight how long and where you should gaze. This is done in a research study carried out by a team of Belgian experts (Jorge De Greef, 2018). To teach students how to function more effectively, a medical team used eye trackers. They accomplish this by hiring a specialist to use augmented reality, to whom they attach an eye tracker to monitor where his eyes were directed and how long they stayed there before shifting their focus. Compared to the conventional method, it enables students to learn more rapidly and with more comprehension. Additionally, streamers and professional gamers use this technique to demonstrate to their audience where their gaze would be, which makes it easier for those who have trouble focusing or have a particular sort of vision impairment to know where they should be looking (Eyeware Beam , 2022).

# Evaluation and Discussion

Replace this text with Results and Discussion.

Describe the results using diagrams such as graphs etc. as appropriate, and discuss what the results mean.

Example: Results indicate that once the threshold gets over a certain point it significantly reduces player performance and player experience

**Project Milestones**

Replace this text with Project Milestones.

Key project milestone dates and measurement on schedule, was project schedule adhered to, effectively planned for delivery on-time or ahead of schedule if appropriate.

**Major Technical Achievements**

What are your major technical achievements?

**Project Review**

What went right? What went wrong? What (if anything) is still outstanding/missing (i.e., still left to do)? If starting again, how would you approach this project differently? What advice would you have for someone attempting a similar project in the future? Were your technology choices the right or wrong ones? If you chose the wrong technology, provide justifications for why you think this. What were the implications of your technology choices?

# Conclusions

summarise your work and findings.

**Future Work**

Indicate what might be some next steps to try (if a student next year was going to undertake a project in this area what might be an interesting thing for him/her to examine?).

# References

# Appendices

Replace this text with Appendices.

This might include ethics application and other relevant material e.g. copy of any questionnaires used.