

Intro

This project was a collaboration between the Applied Computational Intelligence Laboratory, and the Psychology department to look at Human and AI interactions, and how humans perceive cooperative AI in various environments.

Experiment

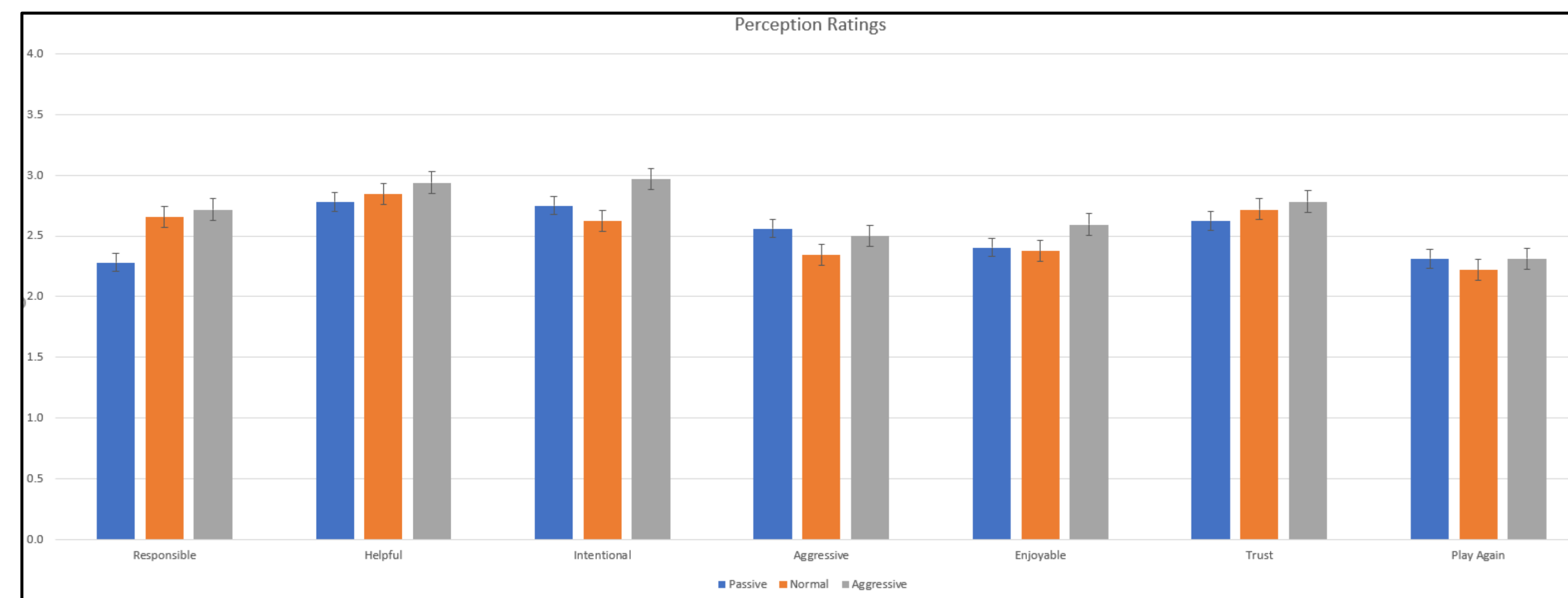
A custom scenario for the game of StarCraft 2 was designed in which a human controlled unit must work together with an AI controlled unit to survive as long as possible.



The pair are trapped in a circle, and an increasing number and difficulty of enemy units are spawned. By correctly working together with the AI, the two can kill many enemies while taking as little damage as possible.

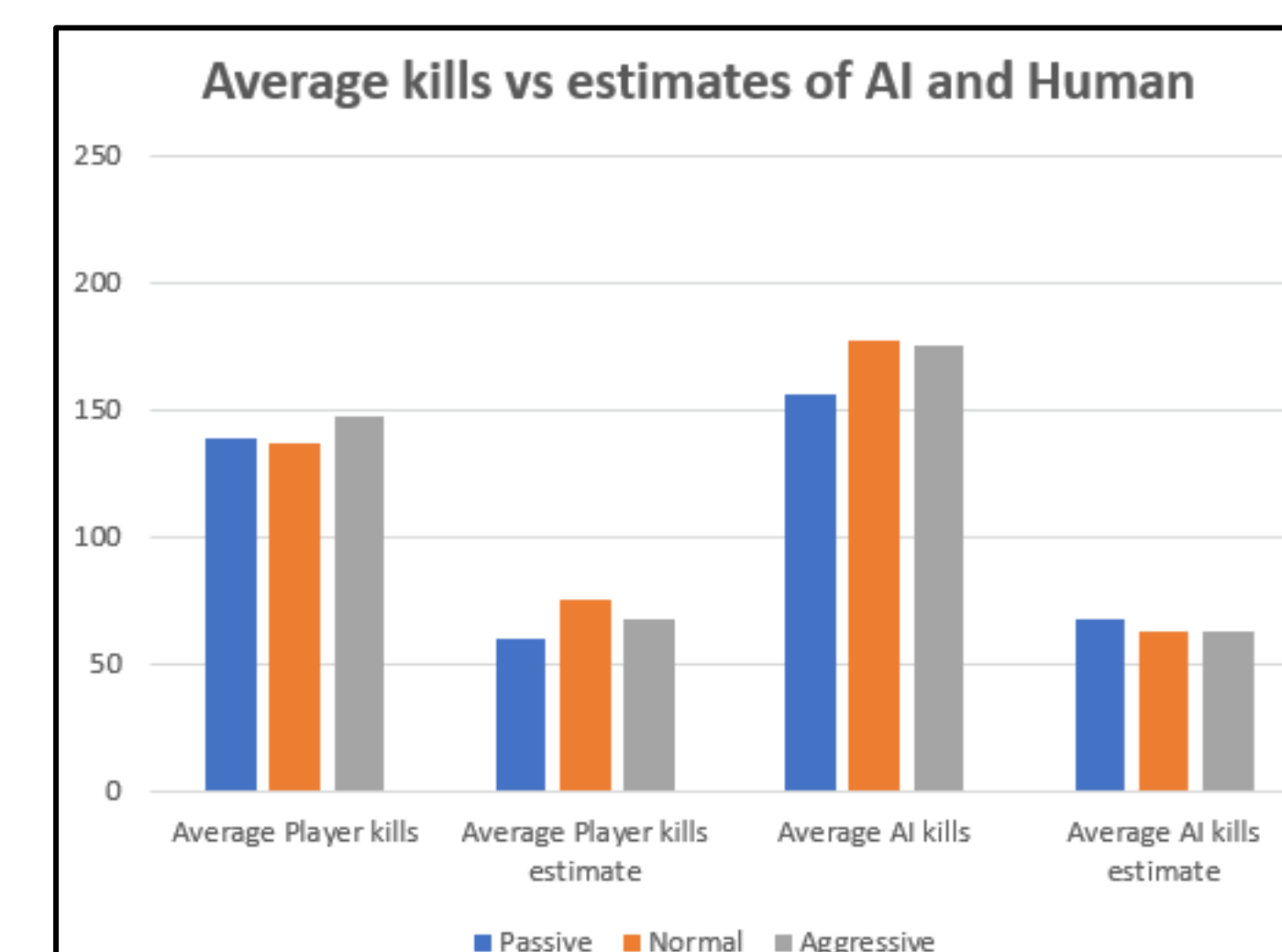
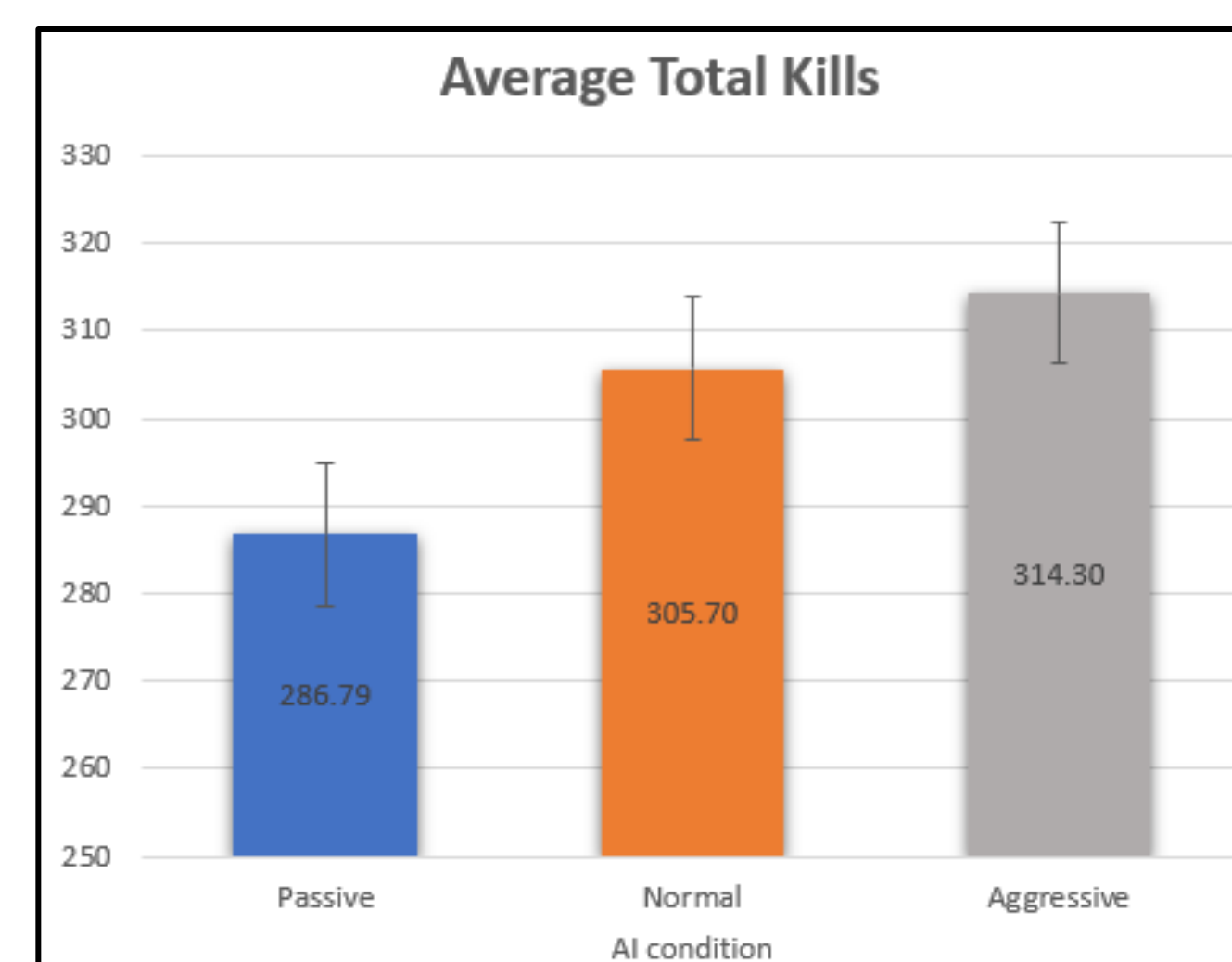
Experiment Proceedings

Each of the 32 participants in the study participated in three rounds of testing, one with every available AI. After each round, participants were asked to score the AI in various aspects of the game, such as how responsible the AI was for the results of the game, or how enjoyable it was to play with the AI. As well, various parameters were recorded in each round, such as how many kills the player and AI achieved.



Results and Conclusion

As seen in the above graph, many participants could not differentiate the three AIs in their responses to the post game questions. However, when looking at the recorded data from each game, there is a noticeable difference in performance. The participants in the study had a lot of difficulty accurately evaluating the score being achieved in the game, often underestimating the kills achieved by them and the AI by large margins. With this we conclude that raw performance may not be the best criteria to judge cooperative AIs with, in terms of human compatibility.



Continued Work

We hope to continue this work in the future, and have already planned another experiment, with an AI as an advisor to a human player, and how best to relay information between them.



Acknowledgements

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