CALIFORNIA STATE SCIENCE FAIR
2015 PROJECT SUMMARY

Name(s)

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Project Number

35458

Project Title

Comparing the Versatility of an Aftermarket Controller from Its Standard Counterpart

Abstract

Objectives/Goals

The goal of the experiment was to create a controller that was better fitted for single armed people than the normal controller designed to be operated with two hands. A second objective was to devise a test method to quantitatively measure the difference between the two controllers.

Methods/Materials

Soldering iron and solder. Four buttons, Cherry MX# red linear switches from Cherry . A PR2H2 ProtoBoard-2H-2 printed circuit board (PCB). An Altoids# aluminum container. A WLtoys# Mini Race Car.

Results

When the participants in the study drove the car in the predefined track five times with each controller, there was an average of 2.25 mistakes and an average time of 10.63 seconds for the WASD Controller, and an average of 4.92 mistakes and an average time of 13.58 seconds for the standard controller. The WASD controller produced better times in the course than the other controller. Fewer mistakes were detected with the WASD controller than the Standard Controller. Even though the times are better, they are only so by a small portion. The WASD Controller use was able to produce significantly less mistakes. The concept of mistake was put in place to help better evaluate the efficiency of the controller. The data support that the WASD controller was significantly easier to use with one hand. A Student T Test was conducted on the data acquired and it supported the theory of the controller with less than five percent uncertainty (>5%).

Conclusions/Discussion

In conclusion, the hypothesis presented was supported, the WASD Controller was superior to the Standard Controller. The amount of mistakes clearly provided evidence of the superiority of the WASD controller. Based on the combined improved time and the reduced number of error it can be concluded that the WASD Controller performed better than the Standard Controller. This small car competition is not the direct application for this type of controller. This experiment is just an introduction into the world of interphases, showing that the in some cases the standard is not the best

The amputated limbs are just the beginning of the long list of purposes this experiment had.

Summary Statement

Design of a controller for one armed persons

Help Received

None

Preliminary