CALIFORNIA STATE SCIENCE FAIR
2015 PROJECT SUMMARY

Name(s)

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Project Number

35621

Project Title

Using Human Brainwaves to Control Real World Devices

Abstract

Objectives/Goals

Our goal was to create a solution which could receive data from any brain sensing device, and use it to control external real world devices. As part of our solution, our goal was to create both software and hardware components, which will first receive brainwave signals, process them, and then convert them into useful data, which can then be used to control external real world devices.

Methods/Materials

Our solution is created using the AVR based ATMega chips for our hardware (Arduino based boards) and the software is programmed in C++ language.

Results

We were able to create a solution which met our design criteria, and were able to control different external real world devices using brain sensing. We used brain sensing device to sense brainwaves, and transmit the data wirelessly. Our controller (hardware/software created by us) then receives the brainwave signals and processes the signals, allowing it to control various external devices.

Conclusions/Discussion

The solution we created allowed us to successfully control external real world devices with focus. We concluded that human brainwaves produce distinct electrical signals, that can be captured and used for controlling real world devices. Our future direction is to take our solution to the next level and add new range of devices which can be controlled by our solution.

Summary Statement

Our project is about using human brainwaves to control external real world devices.

Help Received

Parents helped us to buy materials and components