Race of Doom

Team 8

Project Overview

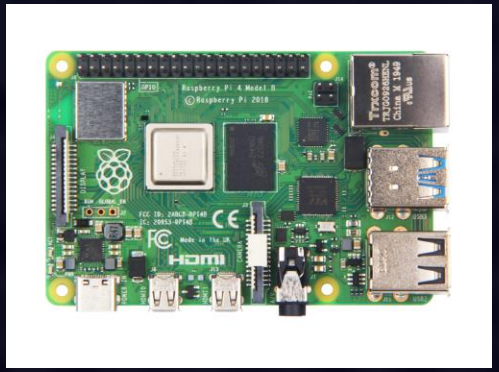
- *Race 2 completely autonomous vehicles against each other.*
- *Get through different obstacles successfully*

- Obstacles include
  - People crossing the street
  - Stop signs
  - Bad guys popping up that need to be shot
  - Yield signs
  - Walls

Problem Statement

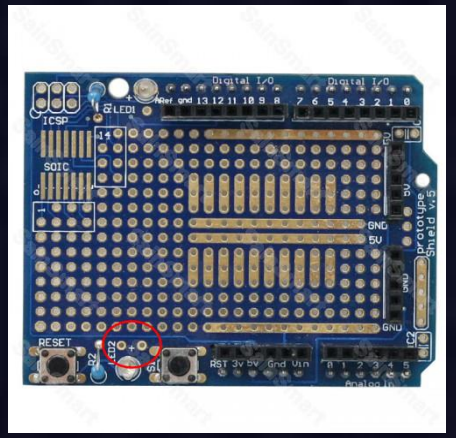
People driving badly, causing car crashes.

List and description of related products



Raspberry Pi 4 Computer Model B 2GB V1.2

- *More efficient microcontroller for connecting to the internet*
- Has a built in Bluetooth processor and operating system to allow for more data to be processed
- Additional Camera module to be implemented for visual detection of objects



Arduino Proto Shield v5 by Elegoo

- *Microcontroller used by previous Race of Doom groups*
- *Allows for easy circuit implementation directly*
- *It is not as effective for our use of a camera sensors and Bluetooth*

New Ideas Generated by Product Research

- *Our group came the consensus that we want to use color as a way to detect obstacles, the raspberry pi will be more effective in doing so*
- *Being able to connect to a laptop for higher processing power as opposed to relying on the microcontroller will expand the depth of our project*
- *The more in-depth implementation will allow for a more realistic representation of the broad-scale autonomous car*

Conclusions

For our autonomous vehicle we have to be able to transport data from sensors and cameras to a computer via Wi-Fi or Bluetooth. This will allow us to use the higher processing power in our computer to make analysis much quicker and move through the track quicker without running out of storage.

Based on research we have concluded that the raspberry pi processor will make this more possible and connect easier with Wi-Fi and/or Bluetooth being built in to many at a cheaper price.

This will also link better with raspberry pi camera sensor for image processing on computer.

Thank You!