

Objective

The goal of this project is to automate a children's electric vehicle's driving system to drive from its current location to a designated location using computer vision and GPS to sense position and direction.

Design

HARDWARE COMPONENTS

The following components provide the vehicle with awareness of its surroundings and motion.

- GNSS receiver (Beitian BN-880) for location and heading
- Hall effect sensors (49E) for wheel encoding
- 10KΩ potentiometer for reading steering angle
- Raspberry Pi Camera for computer vision

SOFTWARE COMPONENTS

We have an Arduino. Some stuff funder the Arduino. Pi and what pi is running. Overview of what each section does. The Arduino tells this to do this. At some point say hw link between hw and sw. maybe in components 3v3 to 5v lvl cnv. PID controller.

ARCHITECTURE

Describe the (wiring?) layout and functionality of the car, how everything is tied together and what is connected to what.

Experimentation

Car drove toward fire hydrant.

Results

The car can drive limited accuracy via GPS. The camera may or may not work? Update that here.