AutoMatic Car Driving System

Using Vehicle Pattern Analysis

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Abstract:

Now, in the early decades of the 21st century, the industry appears to be on the cusp of revolutionary change—with potential to dramatically reshape not just the competitive landscape but also the way we interact with vehicles and, indeed, the future design of our roads and cities. The revolution, when it comes, will be engendered by the advent of autonomous or “self-driving” vehicles .In this Project
We have designed a automatic car parking system with self governance from the parking entrance.this is implemented to form a hassle-free parking facilities and to reduces accident or damage due to careless driving.Our system governs and assigns parking slots and drives them using a steering control integrated in the car and communicated a wifi/Bluetooth module.

Keywords: Bluetooth /Wifi module (HC-05/Esp8266),Arduino Uno, Accelerometer, Gyroscope(MPU-6050),ultrasonic sensor

Model overview:

We are implenting our driving algorithm in a parking system to demonstrate our driving System.

This system consist of a miniature car (base model) integrated with accelerometer ,gyroscope and a Bluetooth/wifi module .

This base model is driven to the parking slot from the entrance and the accelerometer and gyroscope reading are transmitted to the main server .these sensor send the direction and speed for the car at a time interval of 10ms .

IF there are N parking slots ,then the base model is driven N times and all the values of each slot is stored in the main server respectively.

Now the consumer cars are Intergrated with a Bluetooth//wifi module, servomotor drivers, a microcontroller and four ultrasonic sensors for precision. When this car moves to the parking garage entrance,the main server will receive the details of the car and send the accelerometer and gyroscope signal to the car microcontroller which drives the servomotors.

Once the driver leaves the car at the parking entrance ,we transmit datapoint to the car which driving the car to the parking Slot

Note: This is one of the application of our driving Protocol, which we are implementing to demonstrate our methodology.