G.A.P.S. Garage Assisted Parking System

Jacob De Loa | Tom Jimenez | Sara Kouyoumjian | Jordan Trinh

“Closing the GAPS between YOU and the FUTURE”

Background

- Why?
  - People are looking to find new ways to modernize their homes and assist themselves in simple tasks such as parking their vehicles in the garage

Overview

- Problem
  - Damage caused by vehicle bumpers by accidentally hitting objects/walls
  - Carbon-monoxide poisoning

- Solution
  - Assisted parking system
  - Active vehicle motor (sound) detection

System Block Diagram or Design Specs

Overview / G.A.P.S.

- System
  - Garage Model: Ultrasonic Sensor, Mechanical Door, Sound Detection, WiFi, RFID
  - RC Car: Receiver and Transmitter

Hardware / Key Components

- Ultrasonic Sensor
  - Measures the distance to the target by measuring the times between the emission and reception.

  Nano 33 IoT
  - Low Power Arm Cortex-MO 32-bit SAMD21, with WiFi and Bluetooth connectivity operating in 2.4GHz range.
  - Operating voltage at 3.3V with 11 PWM Pins.

- Garage Model
  - Unipolar 5V stepper motor: 513 steps per revolution
  - RC522 RFID Module 13.56MHz
  - Micro-controller

Garage Block Diagram

Budget

- Total Spent: $359.37

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