



**CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY**

Name(s) Tejas N. Rao	Project Number S1420
Project Title Reduce Accidents with Automobile Driving Tracker Using Raspberry Pi, Python, and OBD Port	
Abstract Objectives/Goals The objective of this study is to determine over speeding, fast braking and other driving hazards to reduce accidents and increase fuel efficiency. By capturing data from automobile engine via an On Board Diagnostic Port and identifying risky driving we can track driver behavior and provide feedback for better driving habits. This is especially helpful for teen drivers, for whom accidents are #1 cause of death. Methods/Materials Connect car OBD port to Raspberry pie with Bluetooth protocol. Write a Python program on Raspberry pie to read engine data and log to file. Add GPS location to log. Collect logs for each trip. Upload logs to Google Cloud to analyze and highlight risky driving. OBD port Bluetooth reader, Raspberry Pi, Python Programs and Google Cloud. Results From multiple test drives car engine data was captured for speed, rpm, gps and engine temp using a Python program. GPS data was overlaid on top of speed to determine exact location of overspeeding and visually displayed on Google maps. Log files were analyzed on Google Cloud and from charts the number of times of hard braking was determined. Charts and Maps were used to provide feedback to drivers. Conclusions/Discussion Car/Auto/trucks can be monitored for risky driving using OBD port reader and Raspberry Pi. The data can help reduce reduce accidents and damage to life and property, specially teen deaths. The solution can also help with diagnosing engine faults and fix them before car breaks down. Also fule efficiency can be increased by better driving habits.	
Summary Statement Reduce Accidents and save lives with Automobile Driving tracker using Raspberry Pi, Python and OnBaord Diagnostic Port	
Help Received I got help with Python programming.	