

“Data Analytics Using Accelerometer Data Obtained From ADXL345 Mounted on a Wi-Fi-Based Remotely Controlled Model Car”

With the world progressing into a technological era of artificial intelligence, the current economy is transitioning from a human-response centric mode of transportation to sensor-feedback-based autonomously driven vehicles. Vehicle manufacturers have just begun to research and develop ‘smart’ cars with distance-sensing and nearby-vehicle detection capabilities, but as these features are crucial to enhancing the safety of every day vehicles, they are not enough to fully protect and prevent drivers from getting into road accidents. Thus, collecting, storing, and analyzing sensor-generated data from various sensors mounted on smart vehicles can be telling of how these smart vehicles operate, and allow researchers to make new discoveries on how vehicles can become even more automated for the safety of every person on the road.

That being said, the governing objectives of this project are to (1) build a software-and-hardware-based system to manage a host of sensors mounted on a model car, and (2) fully automate the vehicle and gather all data collected for analysis. As an initial step, we plan to demonstrate an accelerometer sensor attached to the car and control it remotely over a secure wi-fi connection. By controlling the car over wi-fi and gathering position data from the accelerometer, we observe the car’s motion and analyze the sensor-data as a means of understanding vehicle operational status.