# Project milestone #2

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Title: Driving behavior monitor

Progress:

(1) Android application for sensor data collection (Done)

The sensor data collector app features a very simple user interface: a large button to switch between ON and OFF status. Every switch generates a text file recording data read from three different sensors: GPS (time, latitude, longitude, speed), Accelerometer (time, value_X, value_Y, value_Z), and Gyroscope (time, value_X, value_Y, value_Z). The sensor data can only be read upon changes, and sensors have different sensitivities, so the data needs to be aligned according to the time.

(2) Data analyzer algorithm (In progress)

The algorithm will empirically find unsafe patterns utilizing one or more kinds of data. E.g., hard acceleration/deceleration, making turns at a high linear speed, swing between lanes, picking up/putting down the cellphone when driving, etc. Things need to be considered include: data fluctuation, different thresholds at different speeds. Real world data will be used to analyze these patterns. Manually injected data (difficult to obtain due to safety issues) will be used for evaluation.

(3) Android application for real time analysis (Pending)

This part of the project depends on the progress of developing analyzer algorithm.

**Appendix:** Partial data collected

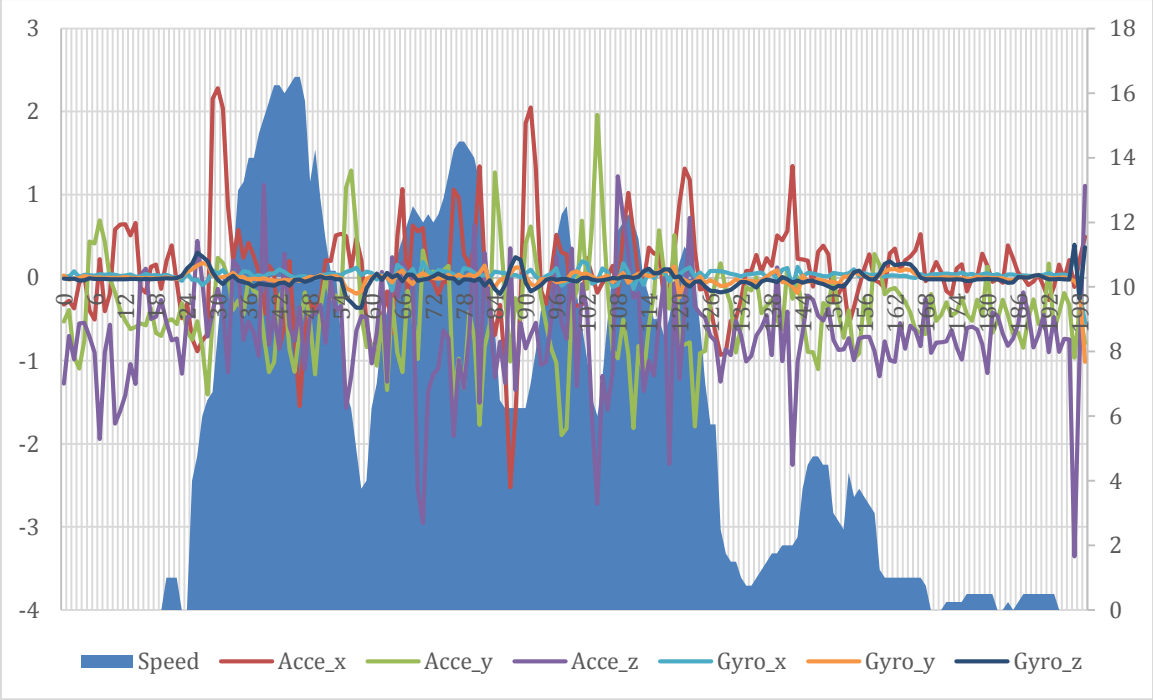


Figure 1. A 3’20’’ local trip

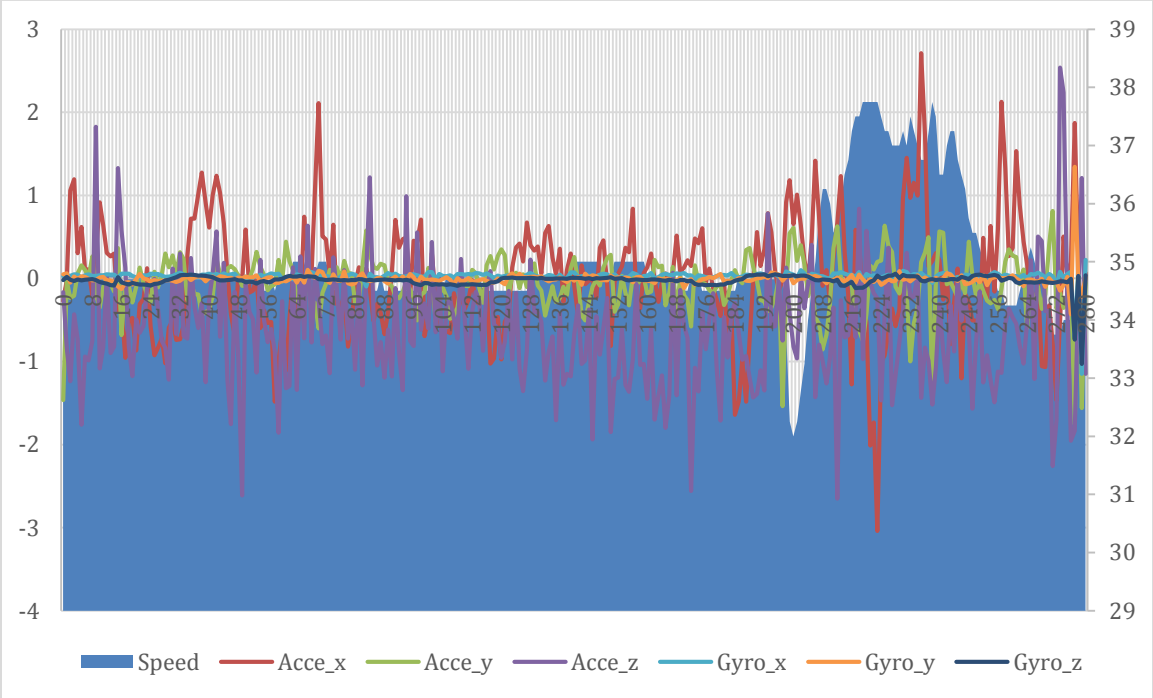


Figure 2. Part (4’41’’) of a highway trip