

Allstate Drivers' Behavior Analysis

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Introduction

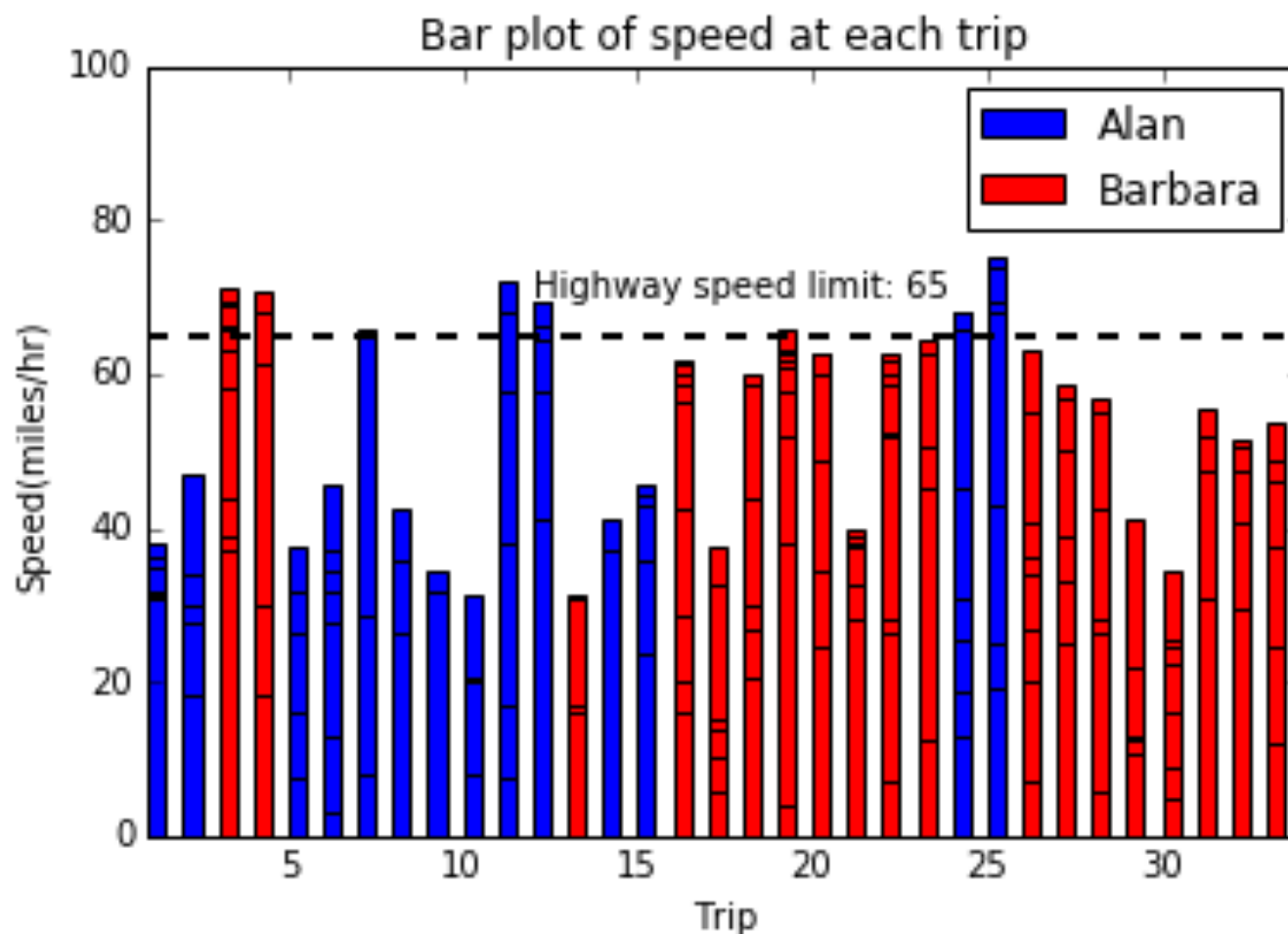
- As a car insurance provider, we want to know whether our customer is a safe driver or not. Thus, we could provide better coverage and the best price for their vehicle.
- In this study, I compared the acceleration events in each trip to determine which customer is the safer driver. By using speed information for each trip, I could also predict whether they drove on highway or not.

Data and methods

- The data used in this analysis was provided by Allstate. It contains information from the event data recorder in a car driven by two drivers, Alan and Barbara.
- Data analysis was done in python by using pandas data frame, and data plotting was accomplished through python matplotlib library (python code can be found in the ipython notebook file).

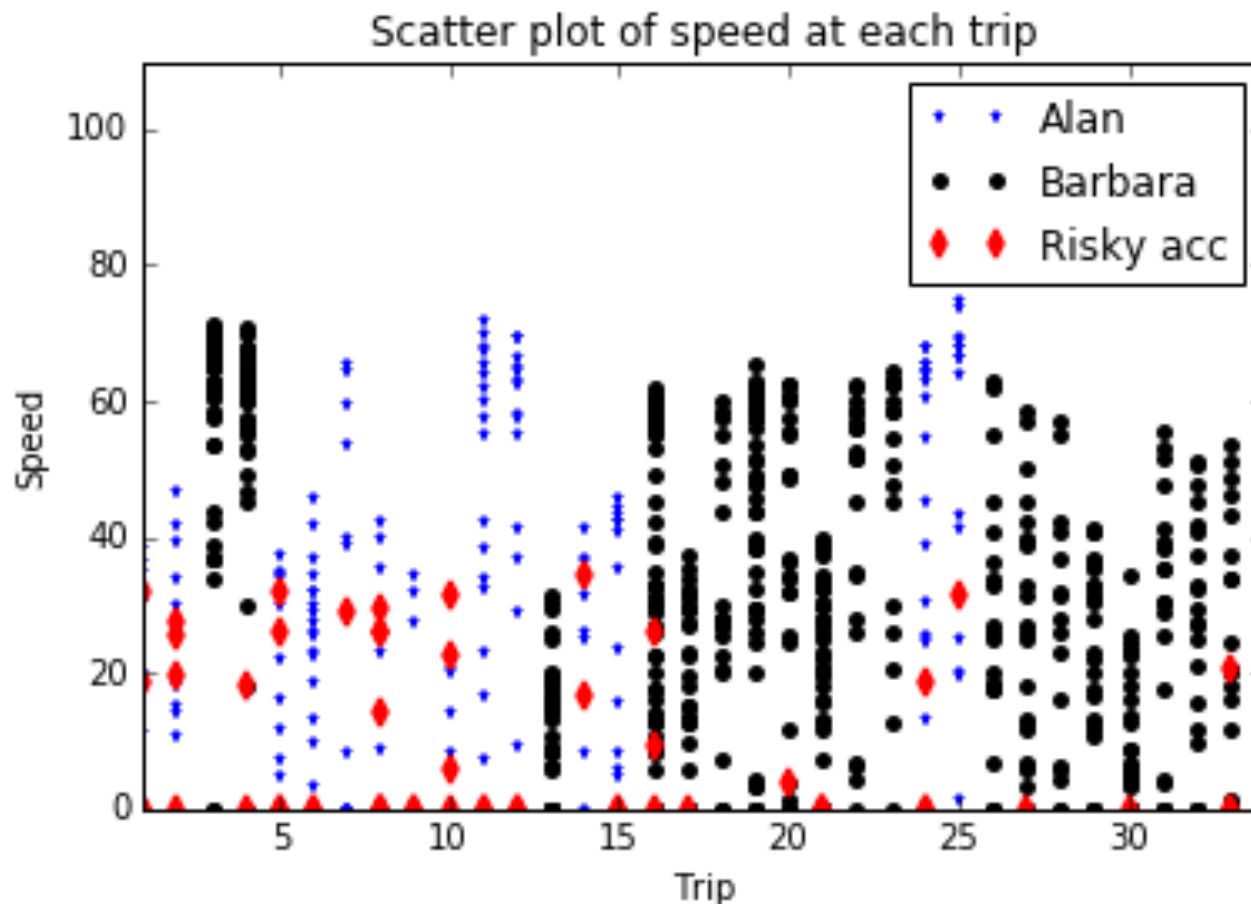
Data Analysis:

This dataset contains 848 data points, including 34 trips with 14 trips from Alan and 20 trips from Barbara.



Data Analysis:

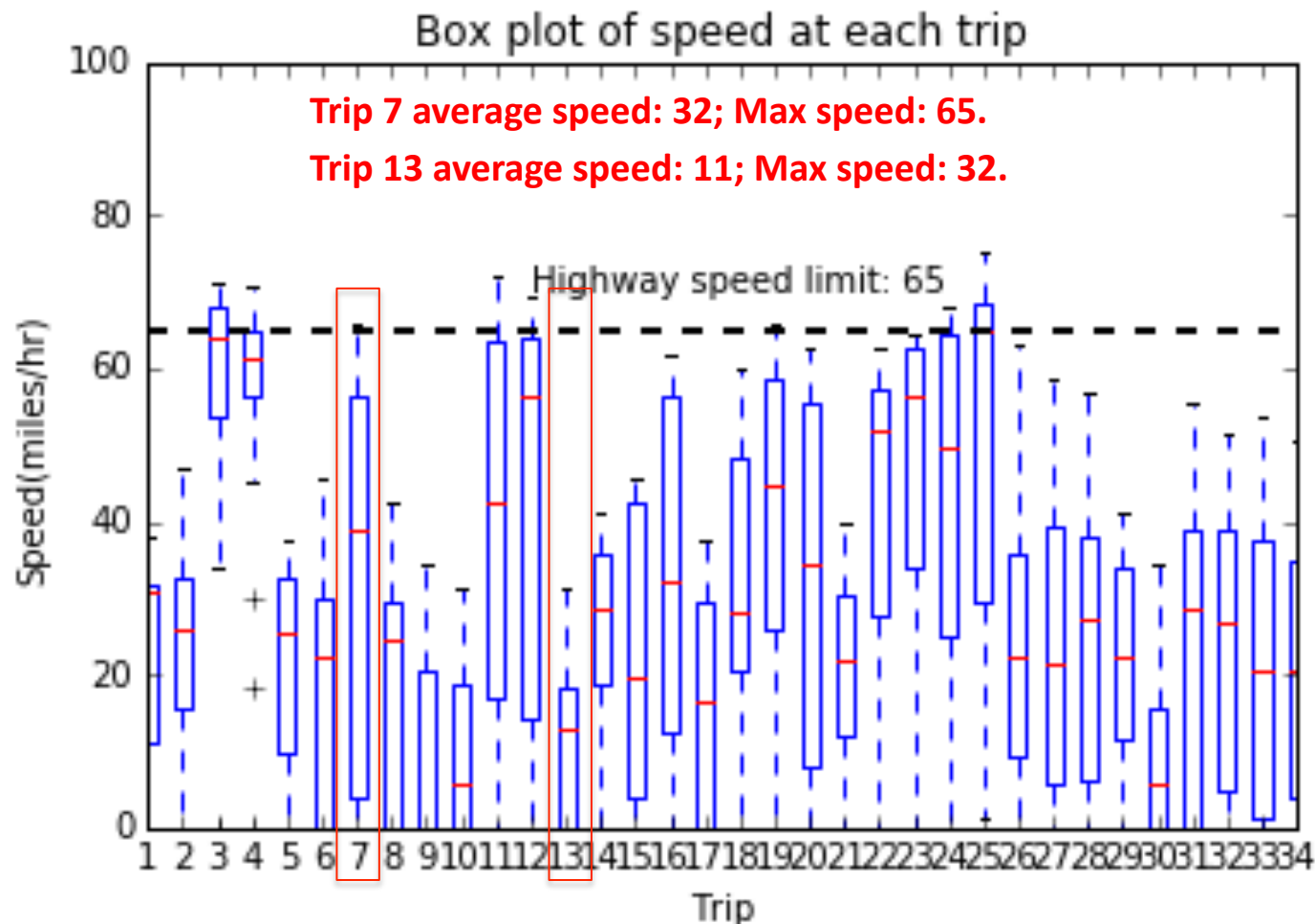
Question1: Who would you say is the safer driver?



In average, Alan had 2.9 risky events per trip while Barbara had 0.8. There are statistically different with a p value of 0.0003.

Answer: Barbara is the safer driver.

Question2: Between the trip 7, driven by Allen, and 13, driven by Barbara, who drove on the highway?



Answer: It is likely that Allen drove on highway on trip 7.

Conclusion

- In this presentation, by comparing two drivers behaviors, I conclude that Barbara was the safer driver.
- By plotting speed in each trip, I am also able to estimate whether a trip was on highway or not.