**Summary of Melbourne Traffic Accidents Analysis 2014-2017**

1. **Overview**

From 2014 to 2017, it recorded 54,248 accidents including 129,405 persons, 97,850 vehicles. 67,440 persons injured 1,031 persons died. Melbourne CBD and LGA (land grid array) around Melbourne port are high accidents areas. In general, both monthly distributions and weekly distributions of accidents are even. Daily distributions meet traffic peak time that 08:00-09:00 and 14:00-19:00.

1. **Type of Accidents**

“Collison with vehicle” is the most common accidents. In addition, DCA (Definitions for Classifying Accidents) defines over 50 detailed categories in the dataset. Within the “Collison with vehicle”, “Rear end (Vehicles in same lane)” has the largest number of cases.

From personal experience and searched information, common factors contributing to rear end are driver distraction, tailgating, wet weather, and worn pavement. Based on these factors, improvements come with good education for drivers (focus on driving, keep enough safe distance, avoid panic stop, safe drive under bad weather, etc.), necessary policy and publishment for distracted drivers, and road maintenance.

1. **Fatal and Serious Accidents**

The data set includes 16,310 fatal and serious accidents, 17,877 persons seriously injured, and 1,031 persons killed. After building a decision tree model, it shows “Road Geometry Desc” and “SPEED\_ZONE” are key factors to identify fatal and serious accidents. Fatal and serious accidents are more likely to happen at no intersection roads. Approximately 79% serious and fatal accidents happen in over 60 (included) speed zone, and 60.47% of them happen at no intersection roads.

Depends on experience and searched information, common factors are speeding, reckless driving, sleepy driving, drunk driving, extreme weather, animal crossing, etc. For these factors, again well-educated drivers with safe drive knowledge are mandatory. More strict policy or punishments are suggested for dangers of driving. To lower speed limit of dangerous roads is also a good choice. For unexpected crossing animals, put warning signs.

1. **Other Recommendations for Accidents Control**

Implement smart city strategy to solve traffic congestion, monitor and measure traffic. Unblocking the data, control driver and vehicle profiles in the smart city.

The latest technology of smart cars such as automatic breaking may help.

1. **Limitations**

More datasets such as driver data and traffic data would help.

Comprehensive research and assist of traffic or accidents experts would help.