

Summary of Design

This dashboard encapsulates detailed information of car crashes covered in Victoria from 2013 to 2019, aiming to learn how multiple factors including road geometry, rainfall, alcohol and motorcycles influence the occurrence of accidents.

The map on the left side is a heatmap showing all the accidents in Victoria. Details of a specific case including accident number, date, severity and road geometry appear when mouse hover on this point. To take deeper look on how road geometries influence, a bubble chart indicating proportions in related LGA(Local Government Area) is also incorporated with case details while hover.

On the right side are there two bar charts. This dashboard focuses on connection between road geometries and involved motorcycles; thus, a sorted barchart is used, where we consider average numbers of involved motorcycles in each month. It is shown the result covered in all Victoria in default. Specific cases will be highlighted in the map if user hover on any of these geometries.

It is obvious that Melbourne city is the most dense area of accidents; therefore, a detailed chart on the bottom right corner comprising of two lines and bars, aims to look particularly on accidents in Melbourne city between 2013 and 2019 in each month. Average rainfall amount and alcohol are two factors this dashboard investigates. A spreadsheet of daily rainfall amount in city is joint with the original data source to get the information we want. Height of bars is the amount of crashes in each month while colours indicate the average rainfall amount. Lines suggest average serious injuries changes monthly which are distinguished by whether it is alcohol related or not. Map interacts when users click on the bar to see where these cases happened in selected month within Melbourne city. Road Geometry – Involved Motorcycle chart will also react to it by changing itself to be Melbourne-city-specific, enabling users to find the connection between road geometry and involved motorcycles only in city. Map can still be highlighted when users hover after clicking one of those bars.

This interface inspects on the impact of alcohol, rainfall, motorcycles and road geometries. Users can draw many conclusions from this interface after interactions. It is helpful for VicRoads to investigate that how these multiple factors influence accidents and their connections between each other so as to decide what actions need to be performed to avoid crashes. For instance, after clicking October and highlighting each geometries, we see that Y intersection has the most motorcycles involved and roads that are not at intersection have the most cases; therefore, we can put more traffic signs in Y intersection for motor cyclers and in roads that are not at interaction for drivers.