ROAD ACCIDENT SEVERITY PREDICTION AND RECOMMENDATIONS (RASPAR)

INSPIRATION

- **Our concern was the high motor vehicle accident rate in Jamaica.**
- **We want to preserve human life by reducing the number of accidents on our roadways.**

WHAT OUR MODEL DOES

- **It predicts the likelihood and the severity of motor vehicle accidents on the roadways.**

HOW WE BUILT IT

- **We got some data from Kaggle, used the Google BigQuery tools to create various models based on different criteria.**
- **We then connected to the Google BigQuery dataset using Google Data Studio and visualized the results.**

CHALLENGES

- **Difficulty in finding a complete dataset in Jamaica so we decided to use a US dataset.**
- **Finding real time data to put in the system to make the predications.**

ACCOMPLISHMENTS

- **New Technical skills for e.g.**
  - **Data Modelling using BigQuery**
  - **Visualization using Google Data Studio**

WHAT WE LEARNT

- **How to manipulate data using different tools**
- **New skills**
- **How to find publicly available datasets**
- **How useful data can be**

WHAT'S NEXT FOR OUR PROJECT

- **Acquiring local dataset**
- **Retrain model based on local dataset**
- **Make the tool available by use by Ministry of Transport and Mining, Insurance companies etc.**
- **Implementation of the system based on real-time data to produce dynamic and pertinent recommendation to reduce the likelihood of severe accidents.**
- **Identification of local crash hotspots**

RECOMMENDATIONS

- **Drive at slower speeds during adverse weather conditions such as heavy rain, winds, or thick fog.**
- **Beware of debris on the road, such as tree limbs or branches.**
- **Drive within the speed limit or impose strict enforcement of speed limits by charging fees.**
- **Installing speed bumps in areas with high predicted accident rates.**
- **Be vigilant. Focusing on the road while driving can help you identify any debris or quickly other drivers that may put you in danger.**
- **Adopt anti-skid brake systems in the cars, so that the risk of cars skidding can be reduced.**
- **Have police presence at areas where accidents are most likely to occur**
- **Ensure roads are maintained well.**
- **Installation of video cameras by police at regular intervals on high-risk roadways**
- **Ensure accident data is logged by the police.**
- **Avoid driving at times when accidents are most likely to occur, for example:**
    - **leaving out at 9/10 instead of 7/8 to avoid rush hour.**
- **Do not drive after drinking or using mind-altering substances.**
- **Wear seatbelts, front seat and back seat passengers should practice this behaviour.**
- **Avoid distractions such as using a cell phone, playing music too loud.**

LIMITATIONS

- **The data used was confined to one state**
- **The timeframe for the accidents Feb 2016 – Dec 2020**
- **Some of the records were incomplete and were not usable in our project.**