# Capstone 3 - Project Proposal

# SELF DRIVING CAR

Automation can help reduce the number of crashes on our roads. Government data identifies driver behavior or error as a factor in 94 percent of crashes, and self-driving vehicles can help reduce driver error. Higher levels of autonomy have the potential to reduce risky and dangerous driver behaviors.

Self-driving car project is divided into 3 steps. Lane Detection, Object Detection and Steering Tracking.

**LANE DETECTION**

Data Source:

https://github.com/Sandy593/SpringBoardDS-J21/blob/main/30\_Capstone03/LANE\_DETECTION/test2.mp4

https://github.com/Sandy593/SpringBoardDS-J21/blob/main/30\_Capstone03/LANE\_DETECTION/solidWhiteRight.mp4

https://www.youtube.com/watch?v=KWJaBJYJIjI

**OBJECT DETECTION**

Data Source:

Data for Object Detection for the Capstone project is gathered from

<https://bitbucket.org/jadslim/german-traffic-signs>

Dataset contains train.p - Training set, test.p - Test set, valid.p - Validation set, Signnames.csv - Traffic sign Names.

The pickled data is a dictionary with 4 key/value pairs. The dimensions of the images are 32x32x3.

**STEERING TRACKING**

Data Source:

https://github.com/udacity/self-driving-car-sim

The simulator has two modes - Training mode and Autonomous mode. Training mode is used to collect training data by driving through the tracks and recording the driving data in a folder. The Autonomous mode is used to test a trained model.