Smart Traffic Lights

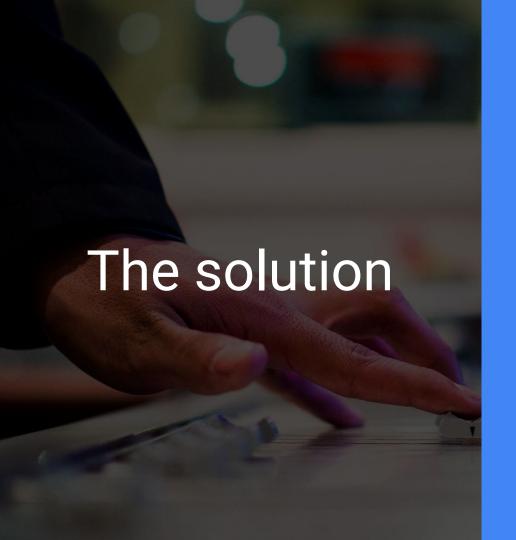
The problem

Traffic lights' timings and intervals are fixed.

This leads to:

- 1) Traffic Jams and Congestion
- 2) Increased Travel Time
- 3) High air and noise pollution





Dynamic timings of red traffic light based on the number of vehicles on each road of the square.

How it works

Camera Input Processing Algorithm Sending Output **Dynamic Lights** Input is taken from a **Processing is done** An algorithm decides The Output of the Traffic Lights glow which of the three algorithm is send rotating camera or 4 to get the number of automatically based vehicles from the back to the same on the number of stationary cameras at lights- Red, Yellow, centre of the square. Green should glow. Raspberry Pi. vehicles. input.

It is then sent to the nearby Computer through **WiFi** of Raspberry Pi or uploaded to the server through the same Pi.

Faster R-CNN implemented in tensorflow is used along with Computer

Vision.

It depends on the number of incoming vehicles from each of the four roads. This is done either using the same **WiFi** connection or sending the signal through the internet from the same

server.

Hardware circuit is implemented on the same Raspberry Pi and output is given to the connected traffic lights.

Implementation Challenges

- Designing the algorithm that works for all the cases.
- Real time accurate processing of the trained model.
- Speed of sending and receiving the camera fed from and to the controller.