**ABSTRACT:**

Autonomous car is a ground vehicle that is capable of driving without user interference. Traffic congestion and number of collisions are major issues in road traffic control due to rapid increase in vehicles day-by-day. Autonomous cars provide a solution to this problem in an efficient and economical way. Objective of this work is to build a self-driving car based on IoT and RF using entirely open source software (OpenCV, TensorFlow, Python) and hardware (Arduino) technology. The proposed system utilizes mathematical models like neural networks and image processing techniques to sense the environment and control the movement of car. This is implemented as three major components viz curved road detection (steering), road sign and signal detection and obstacle detection (collision avoidance). The data obtained is used for steering control with detection of curved roads; TensorFlow object detection is used for road signal, sign detection and distance for collision avoidance. Data collected from the camera is sent to a server for processing. Based on the result, a command is sent to the car. Python scripts are used to control and integrate all the units together. The designed system can attain high accuracy with real – time constraints.