Project report

# **Abstract**

GABOT is a primary stage of the driverless motor vehicles that are being developed. The car will analyse its surrounding only up to a particular distance, using the front camera of the car, and then will cover the analysed distance based on the situation, repeating the above mentioned steps every time the analysed distance is covered. The car will be made to change its course upon obstacle identification and follow the further defined course.

# **Existing system**

Currently the system consists of

1. Object detection module

2. Colour detection module

3. Partial implementation of robot

# **Problem definition**

GPS Autonomous Bot, aka GABot, is a prototype of GPS based driverless vehicle. The GPS here will guide the vehicle from its source to destination. A camera will act as an eye that will capture a video of the path ahead. This video will be then evaluated for obstacle identification. A laptop will be used as the mandatory processor, which will ascertain the non-involvement of any human.

# **Scope**

Car will move along a straight-line path.

It’ll analyze the surrounding up to a particular distance, using the front camera.

It’ll cover the analyzed distance based on the situation.

Situations include:

Obstacles

Road signs and symbols.

Car will be made to change its direction based on the situations.

Analysis will be done by splicing video into frames.

# **Proposed system**

The system will be pre-fed with a GPS coordinates of the source and destination. Using its camera, it will anaylse its surroundings and decide its movements. Along its movements, it will also detect road signs and traffic signals to follow their instructions.

# **Programming tools**

1. Matlab, for Image Processing.

2. Arduino IDE, for Arduino Programming