

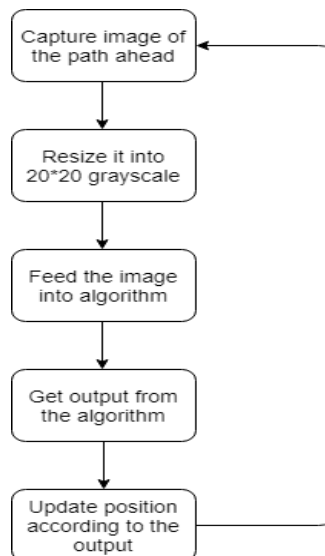
## **Design, Fabrication and Testing of Self-Driving Robotic Car**

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Machine learning is changing the world. Machine learning together with robotics can be deployed in various fields like agriculture, industry, security systems, medicine and market analytics, for tasks that are nearly impossible for human to code explicitly. Application of machine learning on self driving vehicles and driver monitoring systems using computer vision has raised the topic to another level than it was a decade before. There are notable projects and challenges related to autonomous vehicles that are going on around the globe. We aim to design, build and test the movement and behaviour of a small self driving robotic car that uses different machine learning algorithms like logistic regression and neural network to learn to trace the path, avoid obstacles and drive itself in an environment we set up. Supervised learning based algorithm is used to train the algorithm over the datasets. The dataset comprises of pixel values of 20 by 20 grayscale image pixels as features and decision taken by a human controller corresponding to the image frame as labels. Continuous shots of image taken by a camera placed at the front part of the robotic car are fed into the brain (machine learning algorithm) of the robot, which then gives a probabilistic output of possible decisions. This concept can be implemented in a bigger scale for traffic control and management, self-parking of cars, goods transportation inside industry, driving tutoring to human, etc.



**Figure 1.** General step by step working of the robotic car

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