

Design and Implementation of Neural Network Based Controller for Self-Driven Vehicle

Authors : Hassam Muazzam

Abstract : This paper devises an autonomous self-driven vehicle that is capable of taking a disabled person to his/her desired location using three different power sources (gasoline, solar, electric) without any control from the user, avoiding the obstacles in the way. The GPS co-ordinates of the desired location are sent to the main processing board via a GSM module. After the GPS co-ordinates are sent, the path to be followed by the vehicle is devised by Pythagoras theorem. The distance and angle between the present location and the desired location is calculated and then the vehicle starts moving in the desired direction. Meanwhile real-time data from ultrasonic sensors is fed to the board for obstacle avoidance mechanism. Ultrasonic sensors are used to quantify the distance of the vehicle from the object. The distance and position of the object is then used to make decisions regarding the direction of vehicle in order to avoid the obstacles using artificial neural network which is implemented using ATmega1280. Also the vehicle provides the feedback location at remote location.

Keywords : autonomous self-driven vehicle, obstacle avoidance, desired location, pythagoras theorem, neural network, remote location

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