

1. AU2020103222 - AUTONOMOUS NAVIGATION, GUIDANCE AND CONTROL BASED ON ARTIFICIAL INTELLIGENCE FOR THE VEHICULAR SYSTEMS



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Title

[EN] AUTONOMOUS NAVIGATION, GUIDANCE AND CONTROL BASED ON ARTIFICIAL INTELLIGENCE FOR THE VEHICULAR SYSTEMS

Abstract

[EN] The invention relates to a system for controlling and maneuvering a vehicle without human intervention that comprises a plurality of sensors affixed at multiple locations of the said vehicle for sensing the trajectory of the vehicle, obstacles along and around the said trajectory, distance between the said obstacle and the vehicle, operating speed of the vehicle, at least one RADAR at the front end of the said vehicle for detecting the vehicles travelling at the front end of the said vehicle, a 2D image capturing device mounted on the vehicle at multiple distances from one another for collecting image data to identify the location of the subsequent vehicles and obstacles, a LIDAR including a light source and a deflection mirror for scanning the received reflected light beam to detect the trajectory of the moving vehicle and the obstacles, a GPS module for periodically sensing the geographical co-ordinates of the moving vehicle and transmitting the said data to the controller, a wheel encoder mounted on the wheel axle and drive shaft for estimating the longitudinal speed of the traversing vehicle and a smart controller with built-in artificial intelligence to receive the data from the multiple units, process the said data and navigate the said vehicle in the pre-set trajectory and to instruct the vehicle to modify the said trajectory based on the data for reaching the destination.

