

VEHICLE AUTOMATION USING FUZZY BASED PID TYPE CRUISING CONTROLLER

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ABSTRACT

In view of the increasing number of road accidents in recent years, it is conceded that road accidents have assumed the dimensions of a serious social problem. This paper describes the designing of fuzzy based PID-type (Proportional-Integral-Derivative) controller using VERILOG HDL to avoid the collisions between vehicles on the road. The proposed controller provides a reference for controlling the vehicle speed to either increase or decrease based on the distance of the preceding vehicle. A separate Fuzzy algorithm is developed to monitor and control the engine temperature. The model is established on a SIMULINK platform.

The model is coded and simulated using VERILOG HDL. The verified VERILOG model is synthesized using the synthesis tool from Xilinx to get Register Transfer Level (RTL) hardware architecture of the PID modulus. This controller is cheaper in cost compare with the conventional PID controller system. This can be used to reduce the road accidents and ensure the safety of the road users in the future.

KEYWORDS: PID, Fuzzy