FUZZY LOGIC APPLICATION IN TRANSMISSION CONTROL FOR VEHICLE

AMALINA BINTI TAIB

FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
MALAYSIA

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Amalina Binti Taib
Faculty of Electrical Engineering
Universiti Teknologi MARA
Shah Alam

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ABSTRACT

This report describes the fuzzy logic application in transmission control for vehicle. The developed program performed by Fuzzy TECH Version 5.12 is proposed for the design of controller to be applied in the transmission control. The developed program is then simulated using MATLAB SIMULINK to verify its performance in this application. The advantage of the fuzzy logic system is that it allows multiple types of input such as that from vision and ultrasonic sensors as well as stored map information to be used to guide the vehicle when detecting objects. The data is collected through environment surroundings which is detected by the vehicle sensors by moving at all angles. For the purpose of this project, the Mamdani type of fuzzy controller was used. The developed program is based on two behaviors consists of angle and distance of objects. This project also applies efficient command fusion, which helps the fuzzy controller to generate crisp command that carries information from both behavior requirements. The assessments of the controller performance are performed using the MATLAB Fuzzy logic toolbox and MATLAB SIMULINK programming environment. The alternative type of process monitor forms an assessment of controller performance based on readily measured variables.

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