The unmanned vehicle is composed of three parts: the front & side sensor system for keeping the lane and avoiding obstacles, the acceleration & brake control system for longitudinal motion control, and the steering control system for the lateral motion control. Each system helps the unmanned vehicle of which should take notice of its location and recognize obstacles around the place by itself and make a decision how much fast to proceed according to circumstances. During the operation, the control strategy that the vehicle can detect obstacles and avoid collision on the road involves with vehicle velocity very much. Therefore, we have to define a traction system which is powered by DC motor so that, unmanned vehicle can control its velocity accurately. In this study, we find mechanical …

The main object of this work is the development of an intelligent multi-sensor integration and fusion model that uses fuzzy inference system. Sensor data from different types of sensors are integrated and fused together based on the confidence which is not typically used in traditional data fusion methods. The information is fed as input to a fuzzy inference system (FIS). The output of the FIS is weights that are assigned to the different sensor data reflecting the confidence in the sensor’s behavior and performance. We interpret a type of fuzzy inference system as an interpolator of B-spline hypersurfaces. B-spline basis functions of different orders are regarded as a class of membership functions. This paper presents a model that …

This paper is concerned with the vehicle platooning in the AHS (Automated Highway Systems). For this, a relative navigation system is developed for the vehicles operating as a platoon. The relative navigation system is based on two sensors including GPS and MMWR (Millimeter-Wave Radar) and the federated Kalman filter processing measurements of them. The architecture of this system requires GPS measurements of a preceding vehicle via communication link. Even if GPS measurements are available, they contain errors which are unacceptably high in vehicle platooning. Therefore, GPS carrier phase is considered. Integer ambiguities of GPS carrier phase measurements are determined by using MMWR …