

Expert-Driving-Criteria Based on Fuzzy Logic Approach for Intelligent Driving Diagnosis

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Abstract : This paper considers people's driving skills diagnosis under real driving conditions. In that sense, this research presents an approach that uses GPS signals which have a direct correlation with driving maneuvers. Besides, it is presented a novel expert-driving-criteria approximation using fuzzy logic which seeks to analyze GPS signals in order to issue an intelligent driving diagnosis. Based on above, this work presents in the first section the intelligent driving diagnosis system approach in terms of its own characteristics properties, explaining in detail significant considerations about how an expert-driving-criteria approximation must be developed. In the next section, the implementation of our developed system based on the proposed fuzzy logic approach is explained. Here, a proposed set of rules which corresponds to a quantitative abstraction of some traffic laws and driving secure techniques seeking to approach an expert-driving-criteria approximation is presented. Experimental testing has been performed in real driving conditions. The testing results show that the intelligent driving diagnosis system qualifies driver's performance quantitatively with a high degree of reliability.

Keywords : driver support systems, intelligent transportation systems, fuzzy logic, real time data processing

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