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Cognition of Driving Context for Driving Assistance

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Abstract : In this paper, we presented our innovative way of determining the driving context for a driving assistance system. We invoke the fusion of all parameters that describe the context of the environment, the vehicle and the driver to obtain the driving context. We created a training set that stores driving situation patterns and from which the system consults to determine the driving situation. A machine-learning algorithm predicts the driving situation. The driving situation is an input to the fission process that yields the action that must be implemented when the driver needs to be informed or assisted from the given the driving situation. The action may be directed towards the driver, the vehicle or both. This is an ongoing work whose goal is to offer an alternative driving assistance system for safe driving, green driving and comfortable driving. Here, ontologies are used for knowledge representation.

Keywords : cognitive driving, intelligent transportation system, multimodal system, ontology, machine learning
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