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| Title | An Approach to Recognize Vehicles Context Flow for Smartphone-Based Outdoor Parking Using Supervised Machine Learning Classifiers | | |
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| Abstract |  |
| Finding an available parking space in outdoor environments such as university campuses and roadsides need a good parking system. In a general parking system, detecting a vehicle entering and leaving the parking premise is one of the major steps. Currently, there are parking systems that use cameras or external sensors to detect the leaving and entering of automobiles. Both parking systems need very high cost of deployment and maintenance. To encounter the issues, this paper presents a parking system for outdoor parking systems using only smartphone-oriented sensors. The proposed approach does not require additional sensors installation nor manpower support. It takes the inputs from smartphones to detect the driver’s context that is used to recognize the flow of the vehicle. Context flow recognition indicates whether a driver is parking or unparking his/her vehicle. Supervised classifiers like support vector machines (SMV) and decision trees (DT) are used to recognize the parking or unparking actions to enable vehicles tracking in the parking area. The outcome of the proposed approach is a significant contribution for outdoor parking as it solely utilizes the sensors smartphones embedded to detect parking behaviors. | |