GSM, GPS and Facial Recognition Based Vehicle Security System

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This study is focused on developing an improved version of vehicle security system for a bearable price. In this study GSM, GPS, facial detection and recognition technologies are used to overcome liabilities in the existing vehicle security systems. In the proposed system, the real time image processing user authentication is done by comparing a freshly taken photo of the driver with an existing database. Whenever the driver sits on the seat a hidden camera established inside the vehicle turns on and captures a photo of the driver. Cascade Object Detector and Fisher vector features of MATLAB software is being used for facial detection and recognition. Captured image of the driver is compared with the images in the database of authenticated drivers using the above mentioned features and verify the authentication. The GSM technology build up the communication between the vehicle and the owner and it provides the control of the vehicle to the owner's mobile phone. The GPS technology provides the access to gain the co-ordinates of real time precise location of the vehicle. The system consists of a vehicle lock down system that provides owner the facility to lock down the vehicle using a simple text message. Whenever the owner received the security alert he can reply with the predefined text message to activate the lock down system. The lock down system consists of a relay switch system and a fuel supply control valve. When the lock down system initiate it breaks the fuel supply and electric supply to the vehicle. A microprocessor based control system processes the functions of this security system. This well improved vehicle security system provides efficient security for the vehicle.

Keywords: GPS Technology, MATLAB, Facial detection, Detector, GSM Technology