Fingerprint authentication-based traffic offence control and enforcement system on smart mobile devices for smart city

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ABSTRACT

The evolution of communication and information technology in today's time should not despise the various practical aspects of daily life, regardless of economic, education, health, or other government services. Various functions of smart mobile devices meet the needs of users in many ways, where different mechanisms like templates, locks, fingerprints, and passwords are used to protect those functions. Due to the increased number of vehicles in smart cities, it becomes difficult for traffic officers with less manpower to complete many of their tasks related to registration, license, and issuance of summons in time, even reviewing the traffic violation's history. In addition, existing traffic systems are not real-time, data related to traffic management can be lost at any time, leading to the wastage of money and resources. To overcome these difficulties in smart cities, this paper proposes a fingerprint authentication-based traffic offence control-and-enforcement system on smart mobile devices. This scheme introduces a security framework to facilitate many tasks related to identification, registration, licensing, and issuance of summons to traffic violators by implementing fingerprint authentication. Functionality tests and user acceptance tests related to traffic offence problems have been conducted on the proposed system by analyzing biometric data of vehicle users' fingerprints.

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