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Detection Of License Plates In Mobile Device Dashcam

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DETECTION OF LICENSE PLATES IN MOBILE DEVICE DASHCAM

ABSTRACT

Systems and methods for detection of license plates using mobile dashcams are disclosed. The system includes a mobile device installed with a dashcam app connected to a server and a law enforcement agency through a mobile network. The dashcam app maintains an on-device database of vehicle data. The vehicle data is obtained from a server after pre-computation of the detection parameters from the issued Amber Alerts on the server-side. This enables the detection task to be more computationally feasible on the mobile device. The method includes detecting a vehicle that matches the description provided in Amber Alerts. The user is alerted of a matching vehicle and prompted with options for sharing the dashcam data with a law enforcement agency. The systems and methods disclosed herein allow for detection of a matching vehicle even in the absence of a network or a poor mobile network.

BACKGROUND

In many countries, mobile devices are enabled for the users to receive emergency alert notifications, such as an Amber Alert from a police organization that indicates details of child abduction. The details included in the alert may frequently include a vehicle make, model, and license plate information. The user receiving such an alert is then able to use this information to visually identify the mentioned vehicle make, model and license plate information.

DESCRIPTION

Systems and methods for detection of license plates using mobile dashcams are disclosed. The system as depicted in FIG. 1 includes a mobile device installed with a dashcam app connected to a server and law enforcement agency through a mobile network. The mobile device is configured to function as a vehicle dashcam using the dashcam app. The mobile device may
include a high-quality camera and a built-in processor with sufficient computational ability in order to be able to run detection tasks in real (or near-real) time. The dashcam app maintains an on-device database of vehicle data such as a vehicle make, model and license plate information for current and recently issued Amber Alerts. The vehicle data is obtained from a server which pre-computes the detection parameters from the issued Amber Alerts and sends the vehicle data to the device. This enables the detection task more computationally feasible on the mobile device.

The mobile device may automatically download vehicle data for current alerts depending on connectivity. The dashcam app then detects vehicles that match the description provided in Amber Alerts, such as a vehicle make, model, and license plate information. Additionally, the dashcam app records information, such as the time, location and still frame of the detection. The app then alerts the user and allows them to take any appropriate action via preset or customized actions that may include alerting law enforcement.

FIG. 1: A system for detection of license plates using mobile dashcams

The method for detecting license plates using mobile dashcams is depicted in FIG. 2. The
dashcam app captures video data including appropriate metadata and various parameters such as time, location and still frame. The dashcam app scans the captured video against the vehicle data in the stored database. In the event of detection, the user is alerted and provided with customizable options for easily reporting the event to law enforcement officials. The app may be configured by the user to automatically report the sighting to law enforcement officials. For instance, the app may be configured to report an event to a law enforcement agency with a single click reporting from the device.

FIG. 2: A method for detection of license plates using mobile dashcams

The systems and methods disclosed herein allow for detection of a matching vehicle even in the absence of a network or a poor mobile network, since a component of the vehicle database is stored locally on the mobile device.