Automated Vehicle Identification

EE368 Final Project Proposal

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Android Phone-based: Yes

Description

We propose a phone-based automated vehicle recognition application for law enforcement. The application will display, in real time, the make and model information of the car currently within the cameras field of view. Law enforcers could use this system to identify stolen or suspicious vehicles registered in a database.

The platform will consist of an Android phone in communication with a PC over a WLAN or VPN. First, the user will point the phones camera at the vehicle in question. The phone will perform SIFT [3] or SURF [1] descriptor extraction on the image, and send the descriptors to the remote PC. The remote PC will compare the descriptors with those of known automobiles in the database, and choose the match with the greatest number of equivalent descriptors [2]. It will send the vehicles make and model to the phone, which will display the information on the screen.

The dataset available to compare cars against will largely determine the quality of our algorithm. Thus we will limit the scope of this project by aiming to recognize only five significantly different automobiles: a Ford truck, a Toyota Camry, a large minivan, a station wagon, and a BMW 3-series. For each of these five automobiles, we will store a large selection of images to maximize the chance of finding a good match when the appropriate car is within the field of view.

References

