UMass Dartmouth
COLLEGE OF ENGINEERING

Computer and
Information Science
Department

MASTER'S PROJECT (SPRING 2014)

TOPIC: ***Automatic Object Identification for Cloud-Based Real-Time Map Services Used by Android Devices***

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ABSTRACT

Mobile cloud computing (MCC) combines the mobile computing paradigm and the cloud computing technology to allow resource sharing in the cloud among mobile users. As one of the major benefits of using MCC, real-time data can be continuously uploaded into the cloud; while a mobile user can retrieve such data from the cloud at any time anywhere using a wireless connection such as Wifi or 4G. In order to demonstrate this advantage, we develop a prototype cloud-based real-time map service used by Android devices. In this project, we adopt Google App Engine (GAE) as the cloud service platform for storing and retrieving real-time map information. We use Parking Spot Locator as an example to analyze real-time map images of parking lots and automatically identify car objects in order to provide on-the-fly parking information to mobile users. The system consists of three major components, namely, the real-time map service, the camera client, and the mobile client. The camera client takes a parking lot image as an input, processes the image and identifies those car objects that occupy parking slots. Once the car objects are captured, the parking information with occupied and empty parking slot numbers is sent to the real-time map service for storing in the cloud. When the mobile app client is started, it periodically retrieves the real-time parking information from the cloud-based map service, and graphically displays such information on the screen of an Android device.