Title: Mobile Cloud and Green Computing
Author: Ivan Stojmenovic

Abstract

Mobile devices (smart phones, tablets, laptops, embedded boards, robots) can serve as ‘dumb’ terminals for cloud computing services over intelligent network. Mobile cloud has emerged as a new cloud computing platform that ‘puts cloud into a pocket’. Important issues include optimizing the scheduling and transport schemes, access management, and application optimization, for mobile devices to achieve energy saving. This talk will first introduce the development of mobile cloud computing and describe some applications involving multimedia, vision/recognition, graphics, gaming, text processing. Next, it will present the transmission, computation, and sensing challenges of green computing in mobile cloud. It will also discuss the possible solutions from various perspectives. Energy savings for task outsourcing and location based services will be discussed in detail. ‘Crowd computing’ combines mobile devices and social interactions to achieve large-scale distributed computation. Examples include task farming, participatory and opportunistic crowd-sourced sensing. One particular emerging concept is the ‘vehicular cloud’ or ‘vehicular crowd’. For instance, traffic lights in a congested area could be rescheduled by running the rescheduling code (controlled by municipality) on the collective computational platform provided by the cars.