

SEMINAR NOTICE

Preston M. Green Department of Electrical and Systems Engineering

Novel Mobile Computation Offloading Framework for Android Devices

MS Dissertation Defense

By

Meng Wang

MS Candidate

Preston M. Green Department of Electrical and Systems Engineering
Washington University in St. Louis

Abstract: The thesis implements an offloading framework for Google™ Android™ based on mobile devices. Today, the full potential for smartphones may be constrained by certain technical limits such as battery endurance and computational performance. Modern mobile applications own more powerful functions but need larger computation and faster frame rate, which consume more battery energy. Using the proposed offloading framework, mobile devices can offload computational intensive workload to servers to save battery energy consumption and reduce the execution time. The framework can also enable software developers to easily build and deploy services on the servers to support mobile devices to run computationally intensive jobs. Compared with other offloading schemes for android cell phones, the scheme enables developers to choose which parts of the codes are potentially offloading. As developers fully understand the data flow models of the apps, they are considered most capable of making offloading decisions. Developers can minimize communication overhead brought by offloading by carefully partitioning source code by data dependency. Experiment results and data showed that the proposed offloading scheme could significantly reduce computational time and battery energy consumption.

DATE: Monday, December 1, 2014
TIME: 10:10 a.m.
PLACE: Green Hall. Room 0120

Research Advisor:
Dr. Paul Min

This seminar is in partial fulfillment
of the Masters Degree