

Seminar Talk

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Title: Collaborative Mobile Charging and Coverage: From Abstraction to Solution

Abstract:

Wireless energy charging using mobile vehicles has been a viable research topic recently in the area of wireless networks and mobile computing. This paper gives a short survey of recent research conducted in our research group in the area of collaborative mobile charging. In collaborative mobile charging, multiple mobile chargers work together to accomplish a given set of objectives for energy charging and crowdsensing coverage. These objectives include charging sensors at different frequencies with a minimum number of mobile chargers and reaching the farthest sensor for a given set of mobile chargers, subject to various constraints, including speed and energy limits of mobile chargers. Through the process of problem formulation, solution construction, and future work extension for problems related to collaborative mobile charging and coverage, we present three principles for good practice in conducting research, that is, select a simple problem, find an elegant solution, and use imagination for extension. The talk ends with some discussion on security and privacy issues, especially in crowdsensing coverage applications.

Bio:

Jie Wu is the Associate Vice Provost for International Affairs at Temple University. He also serves as Director of Center for Networked Computing and Laura H. Carnell professor in Computer Science. Prior to joining Temple University, he was a program director at the National Science Foundation and was a distinguished professor at Florida Atlantic University. His current research interests include mobile computing and wireless networks, routing protocols, cloud and green computing, network trust and security, and social network applications. Dr. Wu regularly publishes in scholarly journals, conference proceedings, and books. He serves on several editorial boards, including IEEE Transactions on Service Computing and the Journal of Parallel and Distributed Computing. Dr. Wu was general co-chair for IEEE MASS 2006, IEEE IPDPS 2008, IEEE ICDCS 2013, ACM MobiHoc 2014, ICPP 2016, and IEEE CNS 2016, as well as program co-chair for IEEE INFOCOM 2011 and CCF CNCC 2013. He was an IEEE Computer Society Distinguished Visitor, ACM Distinguished Speaker, and chair for the IEEE

Technical Committee on Distributed Processing (TCDP). Dr. Wu is a CCF Distinguished Speaker and a Fellow of the IEEE. He is the recipient of the 2011 China Computer Federation (CCF) Overseas Outstanding Achievement Award.