Ph: 9585554590, 9585554599
Email: support@salemsmartreach.com
URL: www.salemsmartreach.com

Energy-Efficient Link Selection and Transmission Scheduling in Mobile Cloud Computing

Abstract:

Mobile cloud computing (MCC) converges mobile computing and Cloud computing for augmenting resource-poor mobile devices to run heavier applications. With the increasing ubiquity of mobile devices, MCC exhibits vast application potential in various areas. Energy-efficient data transmission is a key issue in MCC due to energy-poverty of mobile devices. In this letter, we address the issue of energy-efficient link selection and data transmission scheduling for delay-tolerant and data-intensive applications in MCC. We first formulate the problem as a discrete-time stochastic dynamic program (SDP) that aims to optimize both system throughput and energy consumption. To solve the formulated SDP, we then propose a scalable approximate dynamic programming (ADP) algorithm that does not require the statistics of exogenous stochastic information (e.g., data arrival). Simulation studies show that the proposed ADP algorithm can reduce the average energy consumed for delivering a packet by a maximum of over 40 percent compared to alternative minimum-delay and SALSA policies.