

History-based Dynamic Estimation of Energy Consumption for Mobile Applications

Kwang-Ho Lim, Byoung-Dai Lee

Department Of Computer Science, Kyonggi University, Suwon Korea

khlim@kyonggi.ac.kr, blee@kyonggi.ac.kr

Abstract—Mobile cloud computing is one of the primary research areas that aims to overcome the problem of limited mobile device energy. For this purpose, computational tasks of mobile applications that consume a high amount of energy are offloaded to the cloud. In order to perform effective computation offloading, the energy consumed by application programs in mobile devices and the cloud needs to be estimated first. Previous studies have proven that energy consumption estimators showed optimal performance with targeted mobile application programs. However, optimal performance has yet to be achieved with other mobile application programs. Thus, this paper proposes a dynamic energy consumption estimator in which a mobile application program selects an appropriate energy consumption estimator for its own benefit. In addition, performance and effectiveness of the proposed dynamic energy consumption estimator are validated through experiments.

Keyword—Energy-Efficient, Energy Estimate, Mobile Cloud Computing, Offloading Decision Making



Kwang-Ho Lim is a master's degree at the department of Kyonggi University, Korea. His current research interest includes mobile cloud computing, open mobile platform, mobile application, and mobile framework. After earning his M.S., he plans to start software engineer.