



SDSU
presents
a thesis defense for
Master of Science
degree in
Computer Science

Tuesday,
September 15, 2015

1:00pm
GMCS 418

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Designing Persuasive Eco-Feedback System To Promote Energy Conservation Behavior

Abstract

In response to growing concerns over rising energy costs and global warming, researchers have begun exploring innovative energy feedback mechanisms to serve as a support to reduce energy consumption. In order to promote more efficient energy conservation behavior the feedback system needs to engage with consumers in meaningful and effective ways.

This thesis presents an eco-feedback system that focuses on improving the homeowners' "know" and "care", aiming to influence actions through transformation of moral in addition to monetary savings. The system developed accesses consumers energy consumption using smart meters installed on customers premises, predicts future energy consumption and provides the know and care information to the users in a mobile gaming application. By identifying and evaluating the requirements for designing an effective eco-feedback system, the Android mobile application enables users to track both historical and predicted energy consumption, historical and predicted expenditures, and their contribution to carbon emissions. The application helps users to reduce or shift their electricity usage during peak periods and encourages them to offset demand during peak hours to off-peak hours, thus reducing the strain on the grid. Also, integrating gamification elements can stimulate the sense of competition for motivating long-term energy-efficient behavior.

Thesis Committee

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