
An Adaptive Scenario-Based Reasoning System Across Smart Houses

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Abstract Today smart houses are rapidly developing and are widely used. There are two approaches for automation of smart houses. First approach is constructing a smart house and then adapting users with it and the second one is adapting smart home with user's behaviors. In this thesis, second approach is used. On the base of user's repetitive behaviors (habits) some scenarios are made and then a reasoning engine uses these scenarios to make the smart system of house. Scenarios should be divided in two classes. One class for not repetitive behaviors and the other for repetitive ones. In order to do this, in this thesis, Support Vector Machines (SVMs) have been used. Also SVM parameters are optimized with Genetic Algorithm (GA) and results are compared with Not-Optimised values. Finally results show that with optimizing SVM parameters, the accuracy of classification will significantly increase.

Keywords : Key Words: Smart Houses, Adaptive Scenario-Based Reasoning System (ASBR), Optimized SVM, Optimized MLP, Genetic Algorithm

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