Abstract

Building professional and efficient systems by using user experience became one of the important research activities that focus on the interactions between products, applications, designers, and users. Unfortunately, using user experience faces many problems. One of these problems is how to predict a user experience efficiently to build robust, effective, and flexible applications. To solve this problem, it is needed to design an optimal and efficient method for predicting user experience which includes behavior and emotions experiences. In this paper, a two-tier ranking scheme by using two multi-criteria decision making approaches is proposed. This proposed scheme considers a user experience as a sequence of executed actions or operations and it can predicate the most efficient user experience sequence of operations among a group of user experiences or experiences of individual users on a certain system or application. It uses the combination of two multi-criteria decision making approaches, the analytic hierarchy process (AHP) and the technique for order performance by similarity to ideal solution (TOPSIS) in Fuzzy environments to rank each operation or action in a user sequence.
Based on operation rank, in the first tier, the proposed algorithm selects all sequential operations with the highest ranks. If there are sub goals are not satisfied in the first tier, then in the second tier, the algorithm ranks all unselected operations and add all operations with the highest ranks which satisfy these sub goals. This new scheme is presented as a flexible and efficient method for predicting user experience which will help designers and developers in building professional systems and applications.

References

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**Index Terms**

Computer Science  
Fuzzy Systems

**Keywords**

Human computer interaction, User experience design, Fuzzy sets, AHP, TOPSIS.