Abstract

The Internet of Things goes beyond the regular Internet by offering new functionalities and creating new range of services provided by the deployed objects. Therefore, one of the most challenging issues is to select the best service among similar functionally available ones. In this paper, we propose to involve both artificial intelligence through the use of Artificial Neural Network (ANN) and multi criteria analysis through the use of Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) model in order to return the best service to the requestor. First, The ANN is introduced as a predictive model to estimate the Qualities of services (QoS) according to user context, service context and network context. Second, the TOPSIS model evaluates, then aggregates these QoS values in order to provide the best service according to user preferences. To improve the scalability of the proposed service selection system we conduct a parallel implementation of the prototype.


Scalable and Self-Adaptive Service Selection Method for the Internet of Things

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Index Terms

Computer Science

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Keywords

Internet of Things, non-functional properties, QoS, Contextual attributes, preferences