World Academy of Science, Engineering and Technology
International Journal of Electrical and Computer Engineering
Vol:12, No:03, 2018

An Approach to Building a Recommendation Engine for Travel Applications Using Genetic Algorithms and Neural Networks

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Abstract : The lack of features, design and the lack of promoting an integrated booking application are some of the reasons why most online travel platforms only offer automation of old booking processes, being limited to the integration of a smaller number of services without addressing the user experience. This paper represents a practical study on how to improve travel applications creating user-profiles through data-mining based on neural networks and genetic algorithms. Choices made by users and their 'friends' in the 'social' network context can be considered input data for a recommendation engine. The purpose of using these algorithms and this design is to improve user experience and to deliver more features to the users. The paper aims to highlight a broader range of improvements that could be applied to travel applications in terms of design and service integration, while the main scientific approach remains the technical implementation of the neural network solution. The motivation of the technologies used is also related to the initiative of some online booking providers that have made the fact that they use some 'neural network' related designs public. These companies use similar Big-Data technologies to provide recommendations for hotels, restaurants, and cinemas with a neural network based recommendation engine for building a user 'DNA profile'. This implementation of the 'profile' a collection of neural networks trained from previous user choices, can improve the usability and design of any type of application.

Keywords : artificial intelligence, big data, cloud computing, DNA profile, genetic algorithms, machine learning, neural networks, optimization, recommendation system, user profiling
Conference Title : ICNN 2018 : International Conference on Neural Networks
Conference Location : Prague, Czechia
Conference Dates : March 22-23, 2018