Minitrack Introduction: Decision Support for Smart Cities

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Abstract

This minitrack received 10 research papers and accepted 3 research papers. It covers some top research topics in smart cities such as smart transportation, smart business, and smart finance by using intelligent information technologies and decision support methods.

1. Introduction

Decision Support for Smart Cities Minitrack focuses on the application of artificial intelligence and big data analytics for smart cities. With massive applications of Internet of things (IoT), social media, and social network platforms, large amount of heterogeneous data are gathered and processed with advanced analytic tools to support the development of smart cities. Furthermore, decision support tools and various data mining techniques can be employed to speed up the whole process. To bring technical, behavioral, and managerial perspectives together, this minitrack provides new insights into decision support for smart cities.

2. An Overview of Abstracts

The forthcoming minitrack papers emphasize providing decision support by integrating theories, sensor data processing techniques, and big data analytics. We summarized these leading studies in decision support for smart city and digital services as follows.

Smart transportation and environmental protection is one of the most important streams in decision support for smart cities. Urban traffic congestion is related to the massive urbanization and excessive number of cars on our streets, and causes a variety of problems, such as health, and environmental warnings caused by high CO₂ and NO₂ emissions. Shakil and Juric propose a novel software engineering solution, which generates a

software application aimed at individual drivers on urban roads, in order to help and ease overall congestion. The proposed software engineering application may have and helps in choosing the best possible solution for an individual.

Smart business and finance has becoming an important issue with the rapidly growing transaction and social media data. With the development of technology and the increase of people's demand, multichannel plays a vital role in many industries. Especially in the healthcare industry, expert service now provides both online and offline channels for consumers. To explore how to manage multichannel expert service strategy, Wang et al. develop a mathematical model and employ game theory into the healthcare industry. When the misdiagnosis rate is small, multichannel expert service can be used and is helpful to improve efficiency, and while the misdiagnosis rate is not as small as possible, a certain rate of misdiagnosis is helpful for customer diversion. The results may have implications for managers in the multichannel service and medical industry managers. Meanwhile, with the rapid development of the Internet, cryptocurrencies have been gaining increasing amounts of attention dramatically. As a digital currency, it is not only used worldwide for online payments, but also traded as an investment tool on the market. Therefore, Wang and Chen constructs a price prediction model of cryptocurrencies using a variety of machine learning and deep learning algorithms with the transaction data of three different markets and online social media data. The results show that it is conducive to investors who encrypt currencies to make more scientific decisions.

3. Conclusions

The forthcoming papers provide perspectives in terms of main issues in smart cities, i.e., smart transportation and environmental protection, smart business and finance. The contributions to these areas are appreciated, and they bring new perspectives in both theory and technology.