
Guest editorial: Data and business analytics

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73

Introduction to the special issue on data and business analytics

Recent advances and continuous innovation in information technology have drastically altered how business is conducted. This has led to the emergence of many novel business models such as social commerce, mobile commerce, FinTech, cloud computing services, sharing economy, blockchain economy, crowdfunding, crowdsourcing and so on. There is also an increased focus, in both academia and industry, on further improving business intelligence and analytics with the help of advanced computing technologies to support decision-making and enhance the competitive advantage of enterprises. This special issue on “Data and Business Analytics” highlights the need for and the importance of data and business analytics in both traditional and novel e-business models.

In this special issue, we solicit high-quality papers focusing on advanced analytics techniques with their applications in e-business and various emerging business models. Only four papers from the 30 submissions received were accepted for publication based on rigorous reviews and revisions. They are briefly summarised as follows:

- (1) The first article, “Forecasting of stock price index using support vector regression with multivariate empirical mode decomposition” by Huang *et al.*, aims to predict the stock price index more accurately based on multivariate empirical mode decomposition (MEMD). In this article, MEMD is first applied to simultaneously decompose multiple variables related to the stock price index into several sub-components; support vector regression (SVR) is then employed to set up prediction models for each component; and in the final step of this process, another SVR model is built to combine the forecasts of each component. The results indicate that the proposed MEMD-based model outperforms other selected competing models.
- (2) The second article, “Low rank representation and discriminant analysis-based models for peer-to-peer default risk assessment” by Yuan *et al.*, investigates the default risk assessment of borrowers in peer-to-peer online lending platforms. This study proposes a risk assessment model based on low-rank representation (LRR) and discriminant analysis (DA), where LRR is applied to clean high-dimensional data by removing outliers and noises, and DA is used for dimension reduction. The results of experimental comparisons on borrower data from the Lending Club confirm the effectiveness of the proposed method.
- (3) The third article, “Modeling user preferences in online stores based on user mouse behaviour on page elements” by SadighZadeh and Kaedi, aims to predict users’ implicit interest in products of an online store based on their mouse behaviour through various product page elements. By using the extracted mouse behavioural features on product page elements, several prediction models are built with machine learning techniques. Experimental results indicate that the use of mouse behaviour improves user preference prediction accuracy compared to other available methods.

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- (4) Finally, the fourth article, “Examination of fake news from a viral perspective: an interplay of emotions, resonance, and sentiments” by Nanath *et al.* explores factors that significantly affect the prediction of fake news from the virality theory perspective. A mix of emotion-driven content, sentimental resonance, topic modelling and linguistic features of news is applied to build machine learning models for fake news detection. The results are of great significance for developing automated fake news detectors.

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