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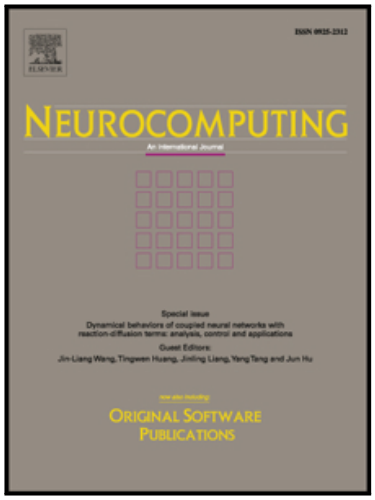

Recent Advances in Semantic Computing and Personalization

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Recent Advances in Semantic Computing and Personalization

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With the rapid growth of social communities and intelligent web services in recent years, there has been a huge volume of user-generated data in the internet every day [6]. To exploit such a large collection of web data, it is essential to identify the underlying high-level semantics of data in multiple modalities and sources. Such semantically-rich information facilitates the understanding of user intentions, needs and preferences. Furthermore, the paradigm of personalized information access, which has been increasingly employed in various mobile and web-based systems to avoid information overload and better satisfy end users' information needs, is supported by various semantic computing techniques such as ontology [1], user profiling [7], social annotations [4] and so on. Many research questions and challenges need to be addressed for the realization of powerful personalized models with semantic computing techniques.

This special issue aims to investigate (i) how high-level semantics are extracted and exploited from web and social data sources via state-of-the-art data mining techniques (e.g., support vector machines [2], Adaboost [5], deep neural networks [3], etc) and (ii) how personalized models are facilitated and supported by underlying semantics. In addition, the research issues in applying semantic computing and personalization in web-based social communities and interactive platforms are covered and discussed.

To balance the quality and coverage of user reviews, **'More Focus on What You Care About: Personalized Top Reviews Set'** presents a review recommendation model which identifies important aspects of the review and selects a top personalized reviews set according to user preferences. The effectiveness of the proposed model is further verified by conducting experiments on the datasets crawled from two e-commerce sites (i.e., Yelp and TripAdvisor).

In **'Real-time Personalized Twitter Search based on Semantic Expansion and Quality Model'**, authors propose a personalized search framework for real-time twitter data stream by implementing the semantic expansion based on user preferences and employing the quality model based on social features. The evaluation is based on a real twitter data stream consisted of 51, 770, 318 tweets. The experimental findings showed that the framework can improve ranking effectiveness and identify user preferences appropriately.

By analyzing the semantic features in multi-aspect vocal ratings and karaoke machine ratings, a personalized song recommender system based on a joint model is proposed in the article **'Karaoke Song Recommendation Using Multiple Kernel Learning Approximation**. Specifically, the latent features of the vocal ratings are learnt by a multiple kernel learning method and then fed into the training classifier for predicting the song ratings. The prediction model demonstrates its effectiveness in song recommendations.

The article **'Document Representation and Feature Combination for Deceptive Spam Review Detection'** tackles the research question of how to detect the deceptive spam reviews. Rather than constructing a set of handcrafted features based on the linguistic patterns, the latent semantic features such as sentence representation are obtained through the convolution neural networks. In their cross-domain experiments, the learnt semantic features gain 86.1% improvements in $F1$ values compared to state-of-the-art baselines.

A supervised learning model based on a semantic joint model is proposed in **'A Multi-Relational Term Scheme for First Story Detection'** to identify the first story in the online event stream. Specifically, the semantic joint model

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