Editorial Preface

Recommendation Algorithm Optimization and Innovation

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This regular issue of the International Journal of Web Services Research (IJWSR) collects five papers.

The first paper, titled Buyagain Grocery Recommender Algorithm for Online Shopping of Grocery and Gourmet Foods, proposes a novel buyagain recommender algorithm, which is evaluated using the grocery and gourmet dataset of Amazon e-commerce websites. The experimental result shows that the algorithm accurately recommends the product that the user likes to purchase once again.

The second paper, titled Topology- and Topic-Aware Service Clustering, aims to address the problems in existing service clustering approaches, such as relying heavily on WSDL documents and neglecting the topological information in service profiles and usage histories. Pan et al. propose a novel service clustering approach by combining the topological and topic similarities to quantify the service similarity and by using the Chameleon clustering algorithm to cluster services automatically. The empirical evaluation on a real-world dataset highlights the benefits provided by the combination of the topological and topic similarities.

The third paper, titled LocPSORank-Prediction of Ranking of Web Services using Location-Based Clustering and PSO Algorithm, introduces a cluster-based PSO method which helps Web service recommendation systems to enhance their commercial value. The proposed approach can improve the prediction accuracy of Web services ranking by combining the efficiency of location-based clustering and the strength of PSO algorithm. The experimental results show that this approach provides the best outcome of prediction accuracy and overcomes the scalability problem.

The fourth paper, titled A Secure Robust and Privacy Enhanced Mobile Healthcare Framework, aims to resolve the challenges in the area of security protocols for mobile health systems. Alsaghir et al. propose a secure, robust and privacy-enhanced mobile healthcare framework (SRPF) by adopting Community Cloud, WPKI cryptosystems, Universal Integrated Circuit Card and Trusted Platform Module. The framework ensures all the security properties mentioned above. SRPF can, therefore, overcome replay attacks, Man in the Middle Attacks, Impersonation attacks, and Multi-Protocol attacks because it has been successfully verified using the scyther tool and by BAN logic.

The fifth paper, titled Cross-Urban Point-of-Interest Recommendation for Non-Natives, aims to address an interesting problem: to what degree is human mobility behavior predictable in new cities a person has never visited before. Xu et al. analyze millions of check-in records from Foursquare to reveal the motives and behavioral patterns of non-natives in 59 cities across the United States, and they propose a machine learning model to predict cross-urban human whereabouts after non-natives move to new cities. The experimental results validate the effectiveness and efficiency of the proposed model, allowing to predict and control activities driven by cross-urban human mobility, such as mobile recommendation, visual (personal) assistant, and epidemic prevention.

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