Guest Editorial Preface

Special Issue on S2 ICIOT 2016

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INTRODUCTION

The rapid advancements of mobile Internet, cloud computing and big data, which have caused significant changes in device-centric Internet of Things (IoT), are shaping a new era that is termed as Internet of Things Services. In this era, sensors and other types of sensing devices, wired and wireless networks, platforms and tools, data processing/visualization/analysis and integration engines, and other components of traditional IoT are interconnected through innovative services to realize the value of connected things, people, and virtual Internet cyberspace. Because the way of building new IoT applications is changing, we indeed need creative thinking, long-term visions, and innovative methodologies to respond to such a change. Sponsored by the Services Society, the First International Conference on Internet of Things (S2 ICIOT 2016) was organized to promote research and application innovations of IoT around the world.

According to the quality of accepted papers as well as their oral presentations in the conference, we selected the top ten papers from the proceedings of the S2 ICIOT 2016 and organized them in two separate special issues of the IJWSR.

CONTENTS OF THIS SPECIAL ISSUE

This special issue of the IJSWR contains five articles based on the extended versions of the papers that were presented at the S2 ICIOT 2016.

The first contribution, by Li Kuang, Gaofeng Cao, and Liang Chen, has the title "Extracting Core Users Based on Features of Users and Their Relationships in Recommender Systems". The authors proposed a new approach to identifying core users based on trust relationships and interest similarity between users, as well as individual user's popular degree, trust influence and resource. They also validated the effectiveness of the proposed method by comparing it with other existing similar methods in terms of evaluation metrics such as accuracy.

The second contribution, by Jian Wang, Zejin Zhu, Junju Liu, Chong Wang, and Youwei Xu, with the title "An Approach of Role Updating in Context-aware Role Mining", is concerned with service offerings in IoT and mobile environments. The authors presented a novel role updating approach in context-aware role mining according to the change of the input user data. Besides, they conducted empirical experiments based on real-world data to indicate the effectiveness of the proposed approach.

The third contribution, by Mingjun Xin, Yanhui Zhang, Shunxiang Li, Liyuan Zhou, and Weimin Li, has the title "A Location-context Awareness Mobile Services Collaborative Recommendation Algorithm based on User Behavior Prediction". The authors proposed a collaborative filtering

recommendation algorithm based on the Location-aware Hidden Markov Model that mixes the geographic factors and personalized user behavior, and the experimental results showed that it outperformed the state-of-the-art algorithms in terms of both precision and recall.

The fourth contribution, by Cun Ji, Chao Zhao, Li Pan, Shijun Liu, Chenglei Yang, and Lei Wu, with the title "A Fast Shapelet Discovery Algorithm Based on Important Data Points", is concerned with the problem of time series classification in IoT systems. The authors presented a fast shapelet discovery algorithm based on important data points, and the experimental results showed that the proposed algorithm was able to reduce the discovery time of shapelets while maintaining classification accuracy at an elevated level.

The fifth contribution, by Ping Gong, David Knuplesch, Zaiwen Feng, and Jianmin Jiang on "*bpCMon*: A Rule-based Monitoring Framework for Business Process Compliance" is concerned with business processes compliance monitoring. The authors introduced a framework named as *bpCMon* for business process compliance monitoring, which consists of an expressive compliance rule language *ECL* and a rule system *ERS*. Furthermore, the efficiency of the framework was demonstrated by a comparison of it with other related approaches.

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Liang-Jie Zhang received a BS in EE at Xidian University in 1990 and then at Xi'an Jiaotong University an MS in EE in 1992 and a PhD in Patten Recognition and Intelligent Control in 1996 at Tsinghua University. Now he is the Chief Scientist and Senior Vice President of Kingdee International Software Group Co. Limited, the President of Shenzhen Big Data Industry Alliance and Vice Chair of China Computer Federation (CCF) Task Force on Big Data, and the EIC of IJWSR.

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