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Special Issue of Graph Data Management, Mining, and Applications (APWeb-WAIM 2020)

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We are pleased to present a special issue of World Wide Web Journal (WWWJ), which contains a collection of six extended papers from the APWeb-WAIM 2020 conference.

The Asia Pacific Web (APWeb) and Web-Age Information Management (WAIM) Joint International Conference on Web and Big Data (APWeb-WAIM) is aiming at attracting professionals of different communities related to Web and Big Data who have common interests in interdisciplinary research to share and exchange ideas, experience and the underlying techniques and applications, including Web technologies, database systems, information management, software engineering and big data. Starting in 2017, the two conference committees have agreed to launch a joint conference. With the increased focus on Big Data, the new joint conference is expected to attract more professionals from different industrial and academic communities, not only from the Asia Pacific countries but also from other continents. APWeb-WAIM 2020 was held in Tianjin during September 18–20, 2020, and attracted a total of 259 research paper submissions. The conference program committee selected 68 full research papers, 29 short papers, and 8 demonstration papers to be presented at the conference and published in the conference proceedings [1, 2]. The conference program also included keynote presentations by Prof. James Hendler (Rensselaer Polytechnic Institute, USA), Prof. Xuemin Lin (The University of New South Wales, Australia), Prof. Masaru Kitsuregawa (The University of Tokyo, Japan), and Prof. Xiaofang Zhou (University of Queensland, Australia).

The six extended papers for this special issue were selected from among all the accepted papers by the special issue guest editors Xin Wang, Rui Zhang, and Young-Koo Lee, based on the relevance to the journal and the reviews of the conference version of the papers. The authors were asked to revise the conference paper for journal publication and in accordance with customary practice of adding at least 70% new materials.

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The revised papers again went through the review process in accordance with WWWJ guidelines and are finally presented to the readers in the present form.

The six extended papers in this special issue cover a variety of topics related to Web information management and applications, specifically, on graph data management, mining, and applications.

In the first paper, "Unified-memory-based hybrid processing for partition-oriented subgraph matching on GPU", authors design a novel storage structure Level-CSR and a corresponding partition-oriented joining strategy for subgraph matching on GPU. Moreover, a unified-memory-based hybrid processing strategy is proposed to support out-of-GPU subgraph matching on large-scale graphs.

In the second paper, "Knowledge based natural answer generation via masked-graph transformer", authors propose an improved knowledge extractor containing post disambiguation and simplifying strategy to retrieve supporting graphs from knowledge bases, a masked-graph transformer to encode the supporting graph, and a multi-task training method which combines classification and sequence decoding jointly.

In the third paper, "Multi-task attributed graphical lasso and its application in fund classification", authors propose the multi-task attributed graphical lasso to learn graphs with observations and attributes jointly, where two implementations of the graphical lasso are introduced to explore latent relations between attributes of the variables and linkage structures among the variables. The proposed method is applied to estimate stock graphs for fund data.

In the fourth paper, "Bayesian networks and chained classifiers based on SVM for traditional Chinese medical prescription generation", authors train a standardized prescription generation model using traditional Chinese medicine prescriptions to provide an auxiliary prescription reference for physicians. Bayesian networks and chained classifiers are used with SVM models to deal with class imbalance within the label in multi-label classification.

In the fifth paper, "Contrastive heterogeneous graphs learning for multi-hop machine reading comprehension", authors investigate the multi-hop machine reading comprehension task and propose a contrastive learning model on heterogeneous graphs such that the produced representations of candidates and the answer are more distinguishable.

In the sixth paper, "CrowdMed-II: a blockchain-based framework for efficient consent management in health data sharing", authors develop CrowdMed-II, a health data management framework based on blockchain, which could address consent management problems in sharing health data. The major smart contracts are designed in the framework and two new smart contract structures are proposed.

We hope that the readers enjoy this special issue. We would like to acknowledge the work done by all authors and their willingness to contribute their papers for this special issue. We thank all the reviewers for their expert comments and assistance in timely reviews.

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References

1. Wang, X., Zhang, R., Lee, Y.-K., Sun, L., Moon, Y.-S.: 4th International Joint Conference, APWeb-WAIM 2020, Tianjin, China, September 18–20, 2020, Proceedings, Part I. LNCS volume 12317 Springer. ISBN: 978–3–030–60259–8
2. Wang, X., Zhang, R., Lee, Y.-K., Sun, L., Moon, Y.-S.:. 4th International Joint Conference, APWeb-WAIM 2020, Tianjin, China, September 18–20, 2020, Proceedings, Part II. LNCS volume 12318 Springer. ISBN: 978–3–030–60289–5