J Inf Process Syst, Vol.13, No.6, pp.1431~1435, December 2017
https://doi.org/10.3745/JIPS.00.0008

ISSN 1976-913X (Print)
ISSN 2092-805X (Electronic)

EDITORIAL

JOURNAL OF INFORMATION PROCESSING SYSTEMS JIPS

Efficient Approaches to Computer Vision and Pattern Recognition

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1. Introduction

The *Journal of Information Processing Systems* (*JIPS*) is one of the journals published by the Korean Information Processing Society (KIPS), which publishes papers related to a wide variety of advanced research fields including systems, applications, networks, architecture, algorithms, security, and so forth. The organization and has the indices such as ESCI, SCOPUS, EI COMPENDEX, DOI, DBLP, EBSCO, Google Scholar, and CrossRef. There are four divisions: Computer System and Theory, Multimedia Systems and Graphics, Communication Systems and Security, and Information Systems and Application.

This issue particularly includes 16 papers: one for an invited paper of Prof. Mehdi Imani and 15 papers for peer-reviewed papers. It contains the approaches of a distributed system, a task system a clustering method, four test methods, medical decision support system, patch integrity-guaranteed method, microRNA pattern discovery approach, an enhanced network coding-aware routing mechanism, random sequence generation approach, transaction processing method, watermarking methods, a distributed mitigation scheme, a security framework, and combines DTCWT-SVD and multi-scale LBPs-based method with a beacon location calculation method.

2. Related Works

In the following section, the recently released papers that contain novel approaches and are published in this issue of JIPS are introduced.

First, Imani et al. [1] introduce the most popular quorum systems and explain the properties and performance criteria of the quorum systems. Then, a comparative and comprehensive survey of non-adaptive and adaptive quorum-based protocols and the inter-comparison among the quorum systems in terms of expected quorum overlap size (EQOS) and active ratio are presented. The pros and cons of the current adaptive and non-adaptive quorum-based protocols are summarized.

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Kerang et al. [2] propose a task system that classifies seasons and devices performing tasks of remote control devices based on environmental data at home to help the user progress to control the device. The task system reduces the interferences and collisions between the tasks. Therefore, the user's convenience is increased.

Liu et al. [3] explain the possibility of a fuzzy co-clustering method based on information bottleneck (ibPFCC), which integrates a possible clustering, fuzzy clustering, and co-clustering, which provides information bottleneck based similarity measurement. The possibilistic fuzzy co-clustering method reduces the subjective error caused by arbitrary choices on similarity measures and improves clustering quality.

Kim et al. [4] propose methods of four type tests: state of charge test, conversion efficiency test, response time test, and ramp rate test, which assess the dynamics of ESS system. The proposed methods are utilized to understand the operational processes of systems; thus, helping to design real-time communication models.

Abdelhak and Baghdad [5] introduce an approach that cooperates between case-based reasoning (CBR) and multi-criteria analysis (MCA) for strategies of retrieval tasks, which permit choosing the best solution through MCA among a set of solutions found by CBR. Therefore, the decision model is improved by an MCA, which may contribute to solve medical situations within given contexts by decision supports.

Kim and Won [6] propose a method that guarantees the integrity of patches received by clients after analyzing the related studies about patch management systems and security incidents that occur in patch management systems.

Sun and Zhang [7] conduct an approach to discover microRNA (miRNA) patterns from sequence alignment and suggest three parameters to select potential miRNA patterns. First, the common letters of multiple mature miRNA sequences are extracted as a primary miRNA pattern [7-10]. The primary miRNA patterns are then cut into short segments. Three parameters are selected for selecting miRNA patterns for balancing computation burden and classification performance.

Jeong and Ahn [11] extend their previous research [12], a network coding-aware routing mechanism based on DCAR, to find an expedite route with a single encoding possible node for a new flow of a given pair of source and destination. A data packet is encoded once on a given route and, once it is encoded, it is forwarded onto the path with less traffic without being decoded at intermediate nodes for the expedite data delivery to the destination.

Fisher et al. [13] introduce a new method for generating and examining random sequences, which is based upon Hamiltonian cycles in directed graphs. Given that the length of a Hamiltonian cycle depends upon the number of vertices within a graph, a cycle that contains desired length period is constructed. In addition, given that the number of Hamiltonian cycles in a large graph can be astounding, potential sequences are generated.

Kim [14] suggests a transaction processing method based on HBase, which efficiently performs multi-row transactions by adding columns to manage transaction information for every user tables. In addition, it controls the execution, collision, and recovery of multiple row transactions by transaction manager and communicates with HBase through the communication manager so that it can exchange information necessary for multiple row transactions.

Wang et al. [15] propose watermarking methods based on SVD for copyright protection, tamper detection, location, and recovery. Given that SVD has diverse kinds of advantages, comparative

watermarking approaches based on SVD are utilized. In addition, the SVD theory and watermarking evaluation indexes are introduced with further challengeable research.

Kim [16] proposes a distributed coexistence mitigation scheme for IoT-based smart medical systems, which contains two phases. The channel planning phase selects communication channel to help coexisting WBANs provide a balance in the use of available channels. The medium access adjustment phase determines channel access scheme depending on the number of WBAN using the channel selected in the channel planning phase. Therefore, coexisting WBANs can dynamically avoid interference in coexistence situation and can guarantee reliable communication in distributed manner.

Suryani et al. [17] suggest a novel security framework including the diverse kinds of processes and a new approach for selecting a coordinator within IoT network. It is expected that the security framework contributes to an improvement in security and provides flexibility to an object to opt for trusted objects before communication process in terms of providing and consuming services.

Jiang and Kim [18] propose a method that combines DTCWT-SVD and multi-scale LBPs for texture feature extraction. Then Brodatz DB and Vistex DB are utilized for verifying the efficiency of the combined method, and then the traditional global texture feature extraction methods are compared and analyzed with the combined method.

Kwak and Sung [19] propose a method for calculating the locations the beacons in cases that are inappropriate for common chord-based trilateration [20]. First, the cases when common chord-based trilateration can be applied are conducted. Then, the locations of an UAV where common chord-based trilateration cannot calculate are obtained by mounting one beacon on the UAV.

3. Conclusion

This issue contained 15 novel and original papers from around the world including one invited paper. We introduce efficient novel approaches to subjects, which include the diverse kinds of research fields such as a distributed system, a task system a clustering method, four test methods, medical decision support system, patch integrity-guaranteed method, microRNA pattern discovery approach, an enhanced network coding-aware routing mechanism, random sequence generation approach, transaction processing method, watermarking methods, a distributed mitigation scheme, a security framework, and combines DTCWT-SVD and multi-scale LBPs-based method with a beacon location calculation method. We would like to thank all authors who submitted their paper in this issue and all reviewers who accepted our review invitations.

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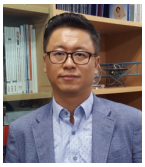

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