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Editorial

This first issue of *CIT*'s Volume 26 (March 2018) brings one opinion paper and five regular papers, these latter from the broad areas of computer networks, image processing, cluster analysis as well as information retrieval.

Mathias Glatz, Hermann Maurer and Afzal Tanvir open the issue with their opinion paper titled *Finding Reliable Information on the Web Should and Can Still Be Improved* targeting information search on the Web. They highlight major weaknesses in locating specific information, which include both difficulty in finding it and establishing reliability of information thus found. The authors discuss a novel approach for solving the former, and propose a set of measures to address the latter.

In the first paper from the regular section, titled *Modified Token Based Congestion Control Scheme for Opportunistic Networks*, Emmanuel Adewale Adedokun, Hamisu Abubakar Adamu and Idris Salawu Shaibu address congestion issues emerging in opportunistic networks (OppNets), a subclass of delay-tolerant networking characteristic of environments with very long delay paths and frequent network partitions. OppNets display intermittent communication such that end-to-end paths between source and destination may never exist, hence the need to study congestion issues. The authors analyze and compare the performance of the conventional token-based congestion control algorithm with a modification they developed, which is based on adaptive forwarding. Simulations using the Opportunistic Network Environment (ONE) simulator show improvements over the conventional protocol for both dropped messages and network transit time, due to congestion across all the scenarios considered, therefore indicating reduction in both network storage as well as time.

The next paper *Enabling Dns64perf++ for Benchmarking the Caching Performance of DNS64* Servers by Gábor Lencse considers IPv6 transition technologies enabling IPv6 only clients to communicate with IPv4 only servers. Specifically, the author focuses on DNS64, for which he co-developed dns64perf++, a benchmarking tool compliant with the respective RFC 8219 for benchmarking DNS64 servers. In the paper, design considerations and implementation decisions for the improved version of dns64perf++ benchmarking tool are described, which tackle caching performance of DNS64 servers, hence making it the world's first standard DNS64 benchmarking tool that provides all the features described in the RFC. The author reveals the goals set in developing dns64perf++, its design considerations as well as implementation decisions. The simple case study provided in the paper demonstrates the operability of the new feature, validating the goals' attainment.

The third regular paper in this issue is *Body Part Extraction and Pose Estimation Method in Rowing Videos* by Gábor Szűcs and Bence Tamás, which considers the problem of automatic sport analysis to help athletes in improving their performances. Specifically, the case of athletes exercising on indoor rowing machines in video sequences is addressed. Here the authors propose an image processing approach to estimate the pose of rowing athletes by using not only body part joints, but also the line of the back. They devised a novel algorithm that is based on a new background subtraction method as well as on a skeleton fitting method to find the joints of the athletes with special movement patterns. This solution works in a real time setting, providing more accurate results than those obtained by applying state-of-the-art general pose estimation methods, as validated by two commonly used metrics.

Saakshi Kapoor, Vishal Gupta, and Rohit Kumar examine techniques for more secure development and extensive application of collaborative recommender systems in the paper *An Obfuscated Attack Detection Approach for Collaborative Recommender Systems*. Namely, as in the recent years

these systems have gained popularity because of their ability to provide a user with the information according to his/her own needs, they have also been subject to various malicious attacks meant to influence the results hence obtained. The authors therefore propose a novel method to resist a particular kind of attacks – shilling/profile injection attacks – which occur in the form of Average over Popular (AoP) attack, User Shifting attack and Noise Injection attack. The method introduced consists of extracting high quality profile differentiating attributes and detection using random forest classifier. It was shown that the method is superior to other approaches when evaluated on a large, publicly available movie recommendation dataset.

The last regular paper, *Market Segmentation Analysis and Visualization using K-Mode Clustering Algorithm for E-Commerce Business*, by Deepali Kamthania, Ashish Pahwa and Srijit S. Madhavan, presents a Business Intelligence (BI) solution for market segmentation based on user behavior analysis and geographical information. To achieve segmentation, their approach uses Principal Component Analysis (PCA) followed by the application of the k-mode clustering algorithm. The BI solution also identifies the popularity of each product with time and on a particular day using interactive visualizations, hence allowing firms to target each of these segments by positioning themselves in a unique segment and connect with all their potential customers for business expansion. The proposed architecture provides a complete toolkit from data cleaning to visualization.

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