Guest Editorial Preface

Special Issue on Content Protection and Management in E-Commerce:
Approaches to Multimedia Security

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Whoever controls the media, controls the mind.
- Jim Morrison

Internet is widespread recently due to its availability and accessibility that lead to ease multimedia content transmission throughout the globe. A great demand for all users is the protection of valuable digital content, such as databases, logos, product designs, flowcharts, manuals, source codes, photographs, graphics, written material, photographs, music, animations, and videos. Such protection can be achieved to some extent by copyrights, trademarks, patents, and laws. Several technological innovations including encryption, access controls, digital time stamps, watermarks and fingerprints have been developed to protect IP rights.

E-commerce is a significant application for the internet which provides benefits for the consumers as well as businesses. It permits access to digital content, products and services and allows collecting, analyzing, products shopping through the internet. Thereby, E-commerce promotes the business in a fast and easy way from anywhere in the world. Hence, addressing the recent practices, insights, issues, challenges, and technological innovations related to the content disclosure, content exchange, IP rights, security, privacy, and management become essential. This special issue includes original research works from the area of multimedia content protection and secure management, with an emphasis on vulnerabilities, requirements, attacks, mechanisms, tools, policies, insights, reviews, and surveys, emerging technologies and technological innovations of content protection for E-commerce applications are essential.

The current special issue includes seven articles as follows. In the first article, Wang extracted useful information from massive production processing data after extensive analysis of the production process and business workflow of the textile processing. The stored data complex relationship and high dimensional features were studied. Afterward, a multi-agent technology was applied for production management structure model by using fuzz-C means clustering algorithm (FCM) and expert system. The multiple agents working principle, data computation process and message communication were elaborated to design finally a textile production process management system. The results verified that the proposed system is superior to the existing textile production management system.

Vyas and Gupta in the second article analyzed the challenges faced by an E-commerce industry in India, where the Indian economy is proliferating day by day and E- commerce industry is playing an imperative and laudable role in its progress. The authors revealed that there are enormous sectors that still have been untouched by an E-commerce industry in India, particularly in its rural areas. In India, several consumers still follow the traditional purchasing method. Unfortunately, altering customer perception of online shopping has been quite a tough task for the E-commerce industry.

In the third article Hamidi and Moradi were interested with the impact of cultural and security orientation on the customer perception of the seller's ethics regarding the customers' loyalty. A heuristic method was proposed to examine the dimensions of customer perception of seller ethics. The authors established that the electronic customers were of high tendency to better understand the electronic seller's ethics, and the customer's higher perception of electronic sellers increases the shopping. Correct and On-time electronic sellers' responses affect the customers' loyalty positively.

Since security issues have significant importance in the E-commerce and several applications in various domains, thus the following articles included a variety of security techniques that can be applied for further E-commerce applications. In the fourth article, Amar et al. proposed a robust watermarking algorithm of polygonal meshes for copyright protection purposes based on a blind detection scheme. Thus, the watermark can be extracted without referring to the original mesh. The experimental results proved the watermarked object's good quality as well as the robustness of inserted watermark against various types of attacks. A comparison with other reported approaches depicted the outstanding robustness of the proposed method.

Sekhar et al. integrated a popular image transform techniques with particle swarm optimization to design an efficient watermarking approach in the fifth article. A watermark was embedded and extracted, afterward the peak-signal-to-noise ratio (PSNR) was calculated to evaluate the proposed approach. A gray scale images were used as watermarking image (WM) and a color image was considered for hosting the WM image. The proposed technique utilized only one frame of the color image for hiding securely the WM image instead of conventional method of using all the three frames.

In the sixth article, a new robust and secure watermarking method using DC coefficient modification in pixel domain and chaotic encryption was carried out by Parah et al. The cover image has been divided into 8×8 sub-blocks and the DC coefficient of each block in spatial domain was computed. The embedded watermark security was considered by using chaotic encryption. The results proved the highly security of the proposed technique with robustness to both signal processing and geometric attacks.

Le et al. in the seventh article proposed a novel Max-Min Ant System algorithm to optimal feature selection based on discrete wavelet transform feature for video-based face recognition. The optimal feature subset was selected in terms of the shortest feature length and the best performance of classifier used k-nearest neighbor classifier. The proposed procedure combined both the image processing and identification with multimedia communications and networking streaming architecture used Meta-data structure to store video data plus machine learning models to deliver maximum efficiency to the system. Finally, in the eighth article, Sarella et al. carried out a novel Energy Efficiency and Event Clustering Adaptive Routing Protocol (EEECARP) for wireless sensor network (WSN). The Energy Efficiency, Dynamic Event Clustering and multi hop relay configuration with residual energy available on relay nodes in wireless sensor networks were used as design features. The simulation results demonstrated that routing protocol achieved convenient and effective better performance in formation of clusters with relay sensor nodes in wireless sensor networks.

As guest editors, we hope the research work covered under this special issue will be effective and valuable for multitude of readers/researchers. In addition, the technical standard and quality of published content is based on the strength and expertise of the submitted papers. We are grateful to the authors for their imperative research contribution to this issue and their patience during the revision stages done by experts in the editorial board. We take this opportunity to give our special thanks to Prof. Mehdi Khosrow-Pour, Editor-in-Chief of the International Journal of Global Information Management (JGIM), for all his support, and competence rendered to this special issue.

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