

## Guest Editorial Preface

# Special Issue on Innovation of Information Technologies in E-Commerce: Opportunities and Challenges

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### INTRODUCTION

The economy of a country is dependent on its business organizations. These business organizations work on the perfect business strategy to get a prime position using the concepts of information technology. In this context, e-commerce is the driving position to contribute online shopping, online food services, e-healthcare, e-care, e-solutions, etc. E-commerce covers all aspects of the system design and research in systems framework, computing techniques, quality of design, software and system testing assurance, security and its emerging applications. However, in spite of all these, e-commerce is still in a growing phase which includes planning, analysis, design, implementation and maintenance or support with the help of the IT sector. In this special issue we aim to explore the complexity and challenges in adopting the e-commerce infrastructure via the involvement of informatics. The empirical studies and conceptual contributions will enhance the understanding of problems to design and implement e-commerce infrastructure and applications via using information technology as per the expectations and requirements of end users.

### OBJECTIVE OF THE SPECIAL ISSUE

The objective of this special issue is to concentrate on all aspects and future research directions related to this specific area of e-commerce toward online shopping, online food services, e-healthcare, e-care, e-solution, service-oriented modeling, reliable and secure systems design and analysis.

We have received total 33 submissions for this special issue from across the globe and after the rigorous review process, only 6 manuscripts have been accepted for publication in this special issue. The details of all accepted manuscripts are as follows.

The first paper is about the “Cellular Automata based Model for E-Healthcare Data Analysis” written by Hakam Singh & Yugal Kumar. In this work, an improved big bang-big crunch algorithm (BB-BC) based clustering algorithm is applied to analyze the healthcare data. Author has used two healthcare datasets, CMC and cancer, and has been noticed that the proposed algorithm obtains better results for CMC and cancer datasets as compared with MEBB-BC, BB-BC, GA, PSO and K-means algorithms.

The second paper is “An Innovative Technique to Encrypt Videos for Authenticity or Ownership Protection Using PCA applied in E-commerce” by Garv Modwel et al. The proposed work may be used by different e-commerce sites like Netflix and Amazon Prime, who can protect their media through the process of watermarking.

The third paper is “HTTP flooding attack detection to secure and safeguard online e-commerce applications in the Cloud” written by Dhanpal et al. The work done by the authors offered a solution for detecting a HTTP flooding attack in the Cloud using the novel TriZonal Linear Prediction (TLP) model. The proposed method is implemented using OpenStack and the FIFA worldcup’98 data set.

The fourth article is “A Novel Approach of Cloud Based Scheduling Using Deep-Learning Approach in E-Commerce Domain” contributed by Rangra et al. The authors describe the multi-tasking convolution neural network (M-CNN), which is used to provide learning of task-based deadline and cost. This work also provides a decision for the process of task scheduling. The experimental analysis uses two types of datasets. The simulated results achieved by authors have shown significant improvement in the use of both the data sets.

The fifth paper is “Image Segmentation using Electromagnetic Field Optimization (EFO) in E-commerce Applications” written by Upadhyay et al. The proposed method is based on the physics inspired population-based metaheuristic that exploits the behavior of electromagnets. The authors have measured the performance of the proposed method and compared with recent state-of-the-art metaheuristic algorithm for image segmentation. The proposed method is applied to the BSDS 500 image dataset and it uses well-known metrics for comparison purposes. The experimental results reflect superior performance in terms of accuracy and convergence speed over the compared algorithms.

The sixth paper is “Test Case Prioritization using Clustering Approach for Object Oriented Software” contributed by Yadav et al. The objective of the work is to prioritize the test after the cluster is formed, in which the test cases of similar property and common features are grouped into clusters. Additionally, efforts have been put to decrease the regression testing cost using a clustering approach for OO Software.

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