

## Guest Editorial Preface

# Special Issue on Innovations in Computing, Automation, and Intelligent Information Systems

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The advent of the computing and automation, innovative research are globally conducting to introduce new computing technologies like Cloud, Fog, Edge and autonomous decision-making systems. This paradigm facilitates users accessing different kinds of virtual resources, providing them with a wide choice of tools and services to use at any moment in their daily life. Innovative computing has been applied in very different contexts, such as education, entertainment, health care, military operations, security issues, business and finance, human resources, etc. Recent computing paradigms applied with more innovative automation technologies with a disruptive potential have been introduced, which brought immediate changes to common education practice, such as with distance and ubiquitous learning, massive online open courses, etc. The Intelligent Information Systems is to bring together researchers in related fields such as information systems, distributed AI, intelligent agents, and collaborative work, to explore and discuss various aspects of design and development of intelligent technologies. There is a growing interest in developing intelligent technologies that enable users to accomplish complex tasks in web-centric environments with relative ease, utilizing such technologies as intelligent agents, distributed computing in heterogeneous environments, and computer supported collaborative work.

This special issue on “Innovations in Computing, Automation and Intelligent Information Systems” of the *International Journal of e-Collaboration (IJeC)* contains 13 manuscripts which are an excellent work in cloud computing, social networks, e-learning, e-business, Artificial Intelligence, knowledge management, decision making and support, cyber security and Intelligence information system. The accepted manuscripts presented a different perspective of solving real-world problems and provide directions for various approaches, principles, applications and the implementation of Computing, Automation, and Intelligent Information Systems. Each published manuscript has undergone full double-blind peer review, prior to being selected for this special issue. All submitted articles are thoroughly evaluated for novelty and quality.

The first article, “Application of Blockchain Technology in Fresh Food Supply Chain Under COVID-19 Environment in China,” proposes blockchain technology to address the problem of food safety. Since the outbreak of the COVID-19, frozen fresh food has become the hardest hit area for the spread of the COVID-19. In response to the opaque information, lack of trust, and difficulty in traceability in the fresh food supply chain. This paper defines a blockchain technology use case and a quick reference guide to design a blockchain network for the food industry. It improves transparency

throughout the supply chain and helps reconcile the documentation and required data with legislation authorities to import cold chain products to certify the quality of the final product. The fresh food supply chain framework can ensure integrity, authenticity, and supply chain information. This design is of great significance to ensure the traceability of the fresh food supply chain.

Authors of the second article, “Purchase Intention of Products Placed in Hollywood Movies Among Chinese Youth in Beijing” applied research concept of how much China youth have been affected by the product placement strategy. The survey was based on well-structured adopted questionnaire. The target population was the youth of China and about 369 university students were participated in the research. Data was analysed using SPSS. The study revealed that students had awareness of the product placement in the Hollywood movies. The result predicts that product placement is an effective marketing strategy, which are attracting China’s youth and influencing their purchase intentions. The results also proclaim that youth are free in taking decisions.

In the third article, “An Analysis on E-Evaluation of Food Quality Traceability System,” it is tried to explore problems such as complex situations, one-sided information, repeated system construction, and lack of qualification of information testing agencies still exist in food quality traceability. Based on the development features of the industry, this paper puts forward countermeasures and suggestions for the construction of a food quality traceability system.

The fourth paper is titled “The Marketing Prospects of Consumer Trust in Banking Services to Reduce Perceived Financial Risk and Enhance Intentions in Using Internet Banking.” The purpose of this article is to present an online survey was conducted using 307 Malaysian online banking customers. Therefore, Structural equation modelling was used to analyse the collected data. There is a mediating role of perceived financial risk exists in the relationship between consumer’s trust in Internet retail banking and behavioural intentions to use Internet retail banking. The results confirm that banks must reflect on their consumer’s trust while reducing various perceived financial risks such as financial loss resulting from credit card number loss, service delivery loss, overcharged fee on an online transaction, etc.,

In the fifth article, “Enhancement of Students Attentiveness Using Deep Learning Techniques,” the authors present research on the cognitive state of mind which can aid us in inferring various insights. Emotion recognition has been a prominent field of study which helps us to get insights into the cognitive state of mind. There have been various prior works done in the field of emotion recognition which has their applications in the fields of education, marketing, analysis, etc. This paper proposed image processing techniques on the images which would enhance the quality of the images and make them run under a convolutional neural network (CNN) along with eye tracking system to track the gaze of a student in order to identify the attentivity of a student.

In the sixth paper, titled as “Predictive Assessment of Fetus Features Using Scanned Image Segmentation Techniques and Deep Learning Strategy,” the authors proposed variety of techniques to predict foetus weight. Computer vision is a capability that can estimate the weight of a baby based on ultra-sonograms taken at various stages of pregnancy. Using the scanned data, one may train an advanced convolutional neural network that helps in accurately forecasting the fetus size, weight, and overall health. Developing an integrated computer vision and a deep neural network decrease the cost of operations and manual processes.

The seventh article, “Application Research of IICA Algorithm in Limited-Buffer Scheduling Problem,” explores the idea of individual selection mechanism based on Hamming distance to improve the ability of initial solution. The prospect is to use the IICA to work out related problems in cloud computing environment. The scheduling problem in the cloud-computing environment needs to consider the optimization of the completion time and cost of using cloud resources.

The authors of the eighth article, “Automatic Face Segmentation Using Adaptively Regularized Kernel-Based Fuzzy Clustering Means With Level Set Algorithm,” propose a new level set based segmentation algorithm for human face segmentation. At first, the human facial images were collected from Face Semantic Segmentation (FASSEG) dataset. After collecting the images, pre-processing was accomplished by utilizing Contrast limited adaptive histogram equalization (CLAHE). The undertaken methodology effectively improves the quality of facial images by removing the unwanted

noise. Then, segmentation was done by using Adaptively Regularized Kernel Based Fuzzy Clustering Means (ARKFCM) clustering with level set, which was a high level machine learning algorithm for localizing the face parts in complex template.

The ninth article, “Classification of Vital Genetic Syndromes Associated With Diabetes Using ANN-Based CapsNet Approach,” explores the idea of Diabetes and related syndromes which are classified based on clinical and biochemical characteristics. Innovative classification strategies are developed for classifying diabetes-associated syndrome disorders efficiently and accurately. An Artificial Neural Network framework based on CapsNets to categorize vital genetic disorders related to diabetes.

The tenth paper is titled “Non-Linear Intelligence Flexibility Management of Talents in Private Higher Vocational Yunnan College, China.” This study recommends the universities and vocational colleges should change their teaching-learning styles to covert the learning and working mechanism to sort the real-world problems in a more real way. The results indicate that linear style of intelligence management is found in the teaching-learning processes in the vocational institutions.

The authors of the eleventh article, “Domestic Research Hot Spots and Frontier Analysis of Virtual Reality Technology in the Field of Education,” introduced the novel approach of virtual reality in the field of education. The research show that the hot spots in this field include the construction of virtual experiment platform, the experiment application of medical simulation, the experiment application of simulation to improve safety, the teaching reform propelled by the application of virtual technology, the application of virtual simulation in innovation and entrepreneurship education, and the theoretical research of virtual learning community.

The twelfth article, “Understanding Consumer Intention Towards Blockchain-Based Mobile Payment Adoption Services in Pakistan,” developed a survey-based methodology and disseminated the questionnaire to consumers of Pakistan through online. Structural equation modelling, confirmatory factor analysis and all supporting statistical tests have been applied on the data in order to evaluate the accuracy; the findings suggest that the usability and factors like the security of online services influence the consumers. The study contributed to the literature by validating and supporting the applicability, usage and development of mobile payment services and produces important implications for the managerial and policymakers of these industries.

The thirteenth article, “Teacher Intelligence Training Based on Big Data and Artificial Intelligence”, is to improve the theoretical system of teacher’s intelligent training, build a teacher’s intelligent training platform, build an intelligent training course resource and establish a teacher’s intelligent training mechanism. It uses the methods of investigation and interviews to analyse the status of teachers’ professional development, existing problems, and research needs. It is necessary to design an intelligent training platform to provide a good platform for teachers to learn.

We would like to extend our thanks to all the authors who have contributed their research results that will definitely a great help or a resource for other researchers working in this area. Special thanks to Dr. Jingyuan Zhao, the Chief Editor of the journal for providing all necessary support required from manuscript submission to its final acceptance. At last, but not the least, thanks to Ms. Alexis Miller, Assistant development editor, IGI Global, as the work would not have reached to its present form without her invaluable help.

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