Guest Editorial Preface

Special Issue on Innovations in System Design and Methodologies

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We are pleased to present the Special Issue of the "International Journal of Information System Modeling and Design" entitled "Innovations in System Design & Methodologies" published as volume 11, issue 1. This special issue contains total of six articles.

It opens with the research paper by Dang Nan entitled "The Design of a Power Security Defense System Based on Resource Pool Cloud Computing Technology." This paper puts forward the idea and method of constructing power dispatching automation system with cloud computing architecture, and realizes the unified management of distributed resources with server virtualization technology. Real-time online migration of each module of the scheduling system is realized by using the in-memory data transfer technology. The multi-node network heartbeat detection technology is used to realize the complete monitoring of the server cluster. In the form of independent disk array, the fault node is removed and the service is restored automatically. The whole disaster reserve of the system is realized by means of remote resource mapping. System analysis results show that compared with traditional architecture, the service interruption probability of the new scheduling automation system is effectively reduced. Fault redundancy capacity in the station is increased from key module 2 node to multi-node protection of all modules.

The next paper is by Minakshi Sharma, Rajneesh Kumar Gujral and Anurag Jain entitled "A Proficient Approach for Load Balancing in Cloud Computing: Join Minimum Loaded Queue." This paper aims at presenting a load balancing strategy that efficiently allocates tasks to virtualized resources to get maximum resource utilization in minimum response time. The proposed approach named join minimum loaded queue (JMLQ) is based on the existing join idle queue (JIQ) model that has been modified by replacing idle servers in the I-queues with servers having one task in execution list. The results of simulation in CloudSim verify that the proposed approach efficiently maximizes resource utilization by reducing the response time in comparison to its other variants.

The next paper is by Law Kumar Singh, Munish Khanna and Hitendra Garg entitled "Multimodal Biometric Based on Fusion of Ridge Features with Minutiae Features and Face Features." This paper presents a multimodal biometric system based on face detection and fingerprint physiological traits. The proposed Multimodal biometrics system increases the efficiency, accuracy and decreases execution time of the system as compared to the existing systems. The performance of proposed method is reported in terms of parameters such as False Rejection Rate (FRR), False Acceptance Rate (FAR) and Equal Error Rate (EER) and accuracy is reported to 95.389%.

Next comes the paper from Bhim Sain Singla and Himanshu S. Aggarwal entitled "A Set of Usability Heuristics and Design Recommendations for Higher Education Institution Websites." This

study aims to develop factors which significantly affect the usability of Indian university websites. The eight identified factors exhibiting strong psychometric properties were ease of navigation, design quality, information architecture, credibility, functionality quality, content quality, simplicity, and learnability. The findings of this study have theoretical as well as practical implications.

The next paper is "Volumetric Estimation of the Damaged Area in the Human Brain from a 2D MR Image" by P Naga Srinivasu, T Srinivasa Rao and Valentina Emilia Balas. The authors have presented a volumetric estimate of the mutilated part in the human brain from a typical 2D MR Image that is directly rendered from the scanner, which is first of its kind in the field of medical imaging. The proposed concept necessitates segmentation of the MR image that facilitates the identification of dimensions in the damaged region. Once the dimensions are identified from the resultant segmented image, the volume of the damaged region is evaluated through Gauss Derivation. The authors' experiments with the proposed algorithm over real-time images obtained the results with better accuracy as examined against the real-time scenarios.

The last title in the special issue "A Blur Classification Approach Using a Deep Convolution Neural Network" by Shamik Tiwari is concerned with computer vision, where he presents a Convolution Neural Network model for blur classification which categories a blur found in hand gesture images into one of the four blur categories namely motion, defocus, Gaussian, and box blur. The simulation results demonstrate the preciseness of offered method than other methods.

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