Editorial

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It is a matter of great privilege for me to unveil before you the 29 issue i.e. volume 12 number 01 of the “International Journal of Information Technology” [An official Journal of Bharati Vidyapeeth's Institute of Computer Applications and Management (BVICAM), New Delhi] with acronym BJIT. The issue is live on the Springer content platform SpringerLink and available to the prospective readers through Springer CS package globally.

Throughout the world, nations have started recognizing that Information Technology (IT) is now acting as a catalyst in speeding up the economic activities in efficient governance, citizens' empowerment, sustainable development and in improving the quality of human life. Recent advancements in IT have touched almost every conceivable area of human life. Its degree of pervasiveness, in day to day life, is rapidly increasing, every new day. On the backdrop of this, BJIT has accepted the challenge to consistently showcase, disseminate and institutionalize the rapidly changing huge knowledgebase globally, with authenticity and accuracy, having special focus on the new researches pertaining to IT applications for improving the quality of day to day life.

Volume 12 Number 01 presents a compilation of 37 papers, chosen out of over 300 manuscripts, that span a broad variety of topics from various emerging areas of Information Technology and Computer Science, especially addressing current research problems related to Intelligent Decision Making, Sentiment Analysis, Smart Grid Security, Thai Character Recognition, Underwater Haze

Enhancement, Decision Support Diagnostic Engines and Query based Image Management to name a few.

To find the best tournament structures. The first manuscript in this issue “Simulating Competitiveness and Precision in a Tournament Structure: A Reaper Tournament System”, An Vinh Nguyen Dinh et. al. evaluates a simulation of football matches and validated with real-world data of previous football tournaments. The amalgamation of the physical and digital world is no longer a dream. The second manuscript “Wireless hand Gesture Controlled Multiple Musical Instruments”, Pranshu Jhamb et. al. proposes micro controller enabled hand gloves that allow playing multiple sounds without any physical musical instruments. Effectiveness and efficiency of manufacturing depends on the manufacturing instrument. The next manuscript “Development of an Intelligent Decision Making Tool for Maintenance Planning using Fuzzy Logic and Dynamic Scheduling”, Andrew Augustine et. al. suggests Fuzzy Logic based decision making technique for maintenance planning of equipments. Sentiment Analysis helps in decoding human emotions, views and thoughts. The manuscript “Sentiment Analysis of Indian PM's “Mann Ki Baat””, Kanika Garg evaluates the success of different episodes of the ‘Mann Ki Baat’ programme launched in 2014 by the Prime Minister of India. The manuscript “Smart Grid Security with AES Hardware Chip”, Niraj Kumar et. al. appraises the use of AES algorithm enabled FPGA hardware in smart grids. The manuscript “Effect of Supervised Learning Methodologies in Offline Handwritten Thai Character Recognition”, Ferdin Joe John Joseph et. al. designs a local feature-based approach to enhance the accuracy of offline character recognition for Thai alphabets. CO₂ emissions in our cities have been on the rise due to a number of factors. The manuscript “High CO₂ Zone Localization in City Areas

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using Hardware Implementation of Urban Vehicular Ad Hoc Network (UVANET) Platform”, Sourav Kumar Bhoi et. al. proposes to localize high CO₂ zones in the city areas using UVANETs. Cognitive Networks are the base infrastructure of many recent applications. The next manuscript “Security Enhancement Technique in Cognitive Networks”, Natasha Saini et.al. compares different networks on various attributes of Information Security. The manuscript “A Novel WSN Protocol for Increasing Network Life using Combination of Node’s Position and Communication Range”, Meenakshi Yadav et. al. provides a mechanism to achieve energy efficient wireless sensor networks. The manuscript “A Novel Imaging System for Underwater Haze Enhancement”, Chrispin Jiji et. al. presents a scheme for improving deblurred image visibility. Optical Network on Chip (ONoC) has gained attention as a promising technology for low power, high bandwidth on chip communication. The manuscript “Optimized Designs of Low Loss Non-Blocking Optical Router for ONoC Applications”, Bharat S Chaudhari et.al. presents two innovative designs of five port non-blocking ONoC routers for low power losses. The manuscript “Swasth: An Intelligent Decision Support Diagnostic Engine for Congenital Heart Diseases”, Sonal Gahlot et. al. introduces a novel intelligent decision support diagnostic engine to cover the complex processes of early diagnosis for proper collection and management of health records in real time. Several CBIR systems are available for efficient storage and retrieval of images. The manuscript “An Efficient Image Retrieval Tool: Query based Image Management System”, Khaleel Ahmad et. al. propagates a tool for QBIMS tool for incrementing computing power as well as decrementing system cost. Heavy Traffic is becoming a concerning problem in urban cities. The manuscript “Novel Algorithm for Leader Election Process in Virtual Traffic Light Protocol”, Parul Arora et. al. recommends a novel mechanism for selecting a leader in virtual traffic light based on current traffic load. The manuscript “Influence of Barrier and Spacer Layer on Structural and Electrical Properties of AlGa_N/Ga_N HEMT”, Madhulika Madhulika et. al. offers a numerical simulation of AlGa_N/Ga_N-based HEMT to improve electrical properties of the transistor structure. The manuscript “A t-SNE based Non Linear Dimension Reduction for Network Intrusion Detection”, Yasir Hamid et. al. details an intrusion detection model based on Support Vector Machines. Online Shopping has grown rapidly in the modern virtual market. The manuscript “Framework of Dynamic Recommendation System for e-Shopping”, Shihab Uddin Tareq et. al. suggests a novel framework of a dynamic recommendation system for online market. The manuscript “An efficient Method for Brain Tumour Detection and Correction using MRI Images by K-Means Clustering & DWT”, Atish Chaudhary et. al. illustrates a

robust image processing based mechanism for brain cancer detection. Microstrip patch antennas have found widespread application in the recent times. The manuscript “A review on Microstrip Patch Antenna and Feeding Techniques”, Aakash Bansal et. al. presents a review of varied microstrip patch antennas with different feeding techniques. Magnetic disk drives have seen many challenges since their inception. The next manuscript, “Capacity Barriers in Hard Disks: Problems, Solutions and Lessons”, Wasim Ahmad Bhat investigates the same. The next manuscript, “Classification of Single and Double-Gate Nanoscale MOSFET with Different Dielectrics from Electrical Characteristics using Soft Computing Techniques”, Arpan Deyasi et. al. creates novel predictor technique MOSFET classification. To overcome the quality problems of software products, the manuscript, “Object Oriented Software Security: Goal Questions Metrics Approach”, Mahtab Alam identifies the important security concerns of software projects. The manuscript, “A Method for Using Temporal Reasoners to Answer the History of Science Questions”, Bahareh Bahadorani et. al. evaluates the ontology of medical history to extract recurrent patterns of queries. Optical WDM transport networks suffer significant challenges. The manuscript, “A Novel QoS oriented RoF system employing Bessel Filter and External Modulation to Overcome Non-Linear Transmission Impairments”, Namita Kathpal et. al. unveils a new RoF simulation model for wireless applications. The manuscript, “Wide-Sense Nonblocking Multicast in WRMD WDM Optical Linear Array and Ring”, Sabrigiriraj M. et. al. reports an explicit wavelength allotment technique for unidirectional ring and bidirectional ring networks. To tackle the increasing number of mobile users, the manuscript, “Performance Comparison on Fixed Channel Allocation for with and without Borrowing Scheme in Wireless Network”, Suyash Kumar et. al. introduces a fixed channel scheme for modeling an occupied, high movement wireless network system similar to a urban scenario. The manuscript, “Genetic Algorithms for the Travelling Salesman Problem: A Crossover Comparison”, Tariq Alzyadat et. al. reports an application of Genetic Algorithm for solving the Travelling Salesman Problem. Advanced prediction of number clusters is quite a challenge for prediction models. The manuscript, “Threshold based Partial Partitioning Fuzzy Means Clustering Algorithm (TPPFMCA) for Pattern Discovery”, Dharmendra Trikamal Patel suggests a new clustering algorithm for Pattern Discovery. Personalised Question Answering allows the users to control their answers as per their area of interest. The manuscript, “Personalized Approach for Automated Question Answering in restricted Domain”, Vaishali Singh et. al. unleashes a personalized approach to question answering based on end user modelling. The manuscript, “The

Minimum Ratio of preserving the Dataset Similarity in ReSampling: $(1 - 1/e)$ ", Faruk Bulut et. al. suggests a theoretical approach for preserving the overall integrity and originality of a dataset. In the recent times, a variety of medium Access Control protocols have been proposed for wireless sensor networks. The manuscript, "Comparative Analysis of Contention Based and TDMA Based MAC Protocols for Wireless Sensor Networks", Richa Jain compares two MAC protocols on varied performance parameters. The next manuscript, "Efficient Evict Policy for PROPHET", Salem Omar Sati et. al. reports an efficient eviction policy to improve the performance of the PROPHET routing protocol. Security of wireless sensor networks is an important concern. The next manuscript, "Security Architectures in Wireless Sensor Network", Vandana Bhasin et. al. evaluates the various security requirements for designing an efficient wireless sensor network. The manuscript, "Tampering Detection and Localization in Digital Video using Temporal Difference between Adjacent Frames and reconstructed Video Clip", Vaishali Joshi et. al. details a novel algorithm for tampering detection in digital video. In the current economic scenario, security is important for all types of communication systems. The manuscript, "Polynomial based Non-Interactive Session Key Computation Protocol for Secure Communication in Dynamic Groups", Vinod Kumar et. al. proposes a polynomial based non-interactive session key computation protocol for secure communication in dynamic groups. The next manuscript, "Comparative Analysis of Automotive Radar Sensors for Collision Detection and Warning System", Rekha Yadav et. al. discusses varied automotive radar sensors used in ITS. The last manuscript, "Re-joining of Authorized Nodes in MANETs using EGSR scheme and Detection of Internal Attacks using 2ACK Scheme", Tejpreet Singh et. al. proposes mechanism of path re-routing for managing the authorized nodes and the keys for group in the ad hoc environment.

I am sure the contributions in this issue, which is an amalgamation of novel trends and technologies in domains like MANETs, Wireless Sensor Networks, Ontology, Digital Video Tampering Detection, Dataset Resampling, Pattern Discovery, etc. will not only enrich our reader's knowledgebase but will also motivate many of the potential

researchers to take up these challenging application areas and contribute effectively for the overall prosperity of the mankind.

As a matter of policy, all the manuscripts received and considered for the Journal, are double blind peer reviewed by at-least two independent referees. Our panel of expert referees posses a sound academic background and have a rich publication record in various prestigious journals representing Universities, Research Laboratories and other Institutions of repute, globally. Finalizing the constitution of the panel of referees, for double blind peer review(s) of the considered manuscripts, was a painstaking process, but it helped us to ensure that only the best, interesting and novel of the considered manuscripts are showcased and that too after undergoing multiple cycles of review, as required.

I wish to express my sincere gratitude to the entire editorial board, members of the resident editorial team and our panel of experts in steering the considered manuscripts through multiple cycles of review and bringing out the best from the contributing authors. I thank my esteemed authors for having shown confidence in BJIT and considering it a platform to showcase and share their original research work. I would also wish to thank the authors whose papers could not have been published in this issue of the journal, probably because of the minor shortcomings. However, I would like to encourage them to actively contribute for the forthcoming issues.

I will fail in my duty, if I do not thank the members of the team from the Springer, particularly Ms. Suvira Srivastav, Mr. Madan Ellappan, Mr. Abilash Nair and Ms. Nidhi Chandoke from Springer for their constant support in realizing the issue and presenting it before you.

The undertaken Quality Assurance Process involved a series of well defined activities that, I hope, went a long way in ensuring the quality of the publication. Still, there is always a scope for improvement, and so, I request the contributors and readers to kindly mail me their criticism, suggestions and feedback at bjit@bvicam.ac.in and help in further enhancing the quality of forthcoming issues.

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