Int. j. inf. tecnol. (February 2021) 13(1):1–4
https://doi.org/10.1007/s41870-021-00612-2

EDITORIAL

Editorial

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Published online: 27 January 2021

Warm New Year greetings to all our readers!!! We hope this year brings relief and progress to humanity. BJIT remains committed to delivering on its challenge of consistently showcasing and disseminating novel researches pertaining to computing applications and capable of altering the quality of human life. It is a matter of great privilege for me to unveil before you the thirty third issue i.e. Volume 13 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. From this issue onwards we have increased our frequency to six issues an year. 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.

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Volume 13 Number 01 presents a compilation of forty five papers, chosen out of over 400 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 Network Security, Web Filtering, Convolutional Neural Networks, IoT, Robotics, Augmented Reality and Privacy Preserving Data Mining; to name a few.

Network vigilantism has gained importance in the current times when everybody has a virtual identity. The first manuscript in this issue "Real-time monitoring as a supplementary security component of vigilantism in modern network environments", Victor R. Kebande et al. traces the application of Real-Time Monitoring (RTM) as a complementary security element of vigilantism in contemporary network environments, to enable accurate arrangement and awareness, in case of a cyber security attack. The pandemic has increased the usage and penetration of the Internet in every human's life. The second manuscript "Web page filtering for kids", Neetu Narwal propositions a formal framework to filter the unethical, harmful contents from web pages. Accurate fruit classification and recognition is still a challenging issue. The next manuscript "CNN based approach for identifying banana species from fruits", M. Vijayalakshmi et al. outlines a banana identification model using a five-layer convolution neural network (CNN). Autonomous mobile robot path planning is a complex, challenging task. The manuscript "A fuzzy based local minima avoidance path planning in autonomous robots", Tawseef Ahmed Teli et al. implements a novel fuzzy based approach to path planning. Future trend prediction of COVID-19 has played an important role in effective management of the pandemic. The manuscript "A novel framework for COVID-19 case prediction through piecewise regression in India", Apurbalal Senapati et al.

proposes a machine learning -guided linear regression model to address the different COVID-19 related issues. The next manuscript "Enhancing anomaly detection through restricted Boltzmann machine features projection", Gustavo H. de Rosa et al. advises a restricted Boltzmann machine based approach to deal with anomaly detection. The manuscript "Question reformulation based question answering environment model", Irphan Ali et al. intends a web-based semantic answering model, for effective question answering system implementation. Cognitive radio sensor networks suffer from the challenge of availability of vacant channels for data transfer. The manuscript "Energy preservation and network critic based channel scheduling (EPNCS) in cognitive radio sensor networks", Veeranna Gatate et al. designs a novel algorithm for energy preservation and network critics based channel scheduling (EPNCS) to regulate the time slot for sensor nodes. In building wireless personal area network (PAN) data is modulated to generate the final wave. The manuscript "Generation and transmission of 60-GHz mmWave emitted by VCSEL, DFB–EAM over RoF", Chandan Kumar Singh et al. proposes radio-over-fiber (RoF) architecture for transmission of 60-GHz multi-gigabit millimeter wave. Position-based routing schemes are an incredible preference for routing in FANETs. The manuscript "Minimize the routing overhead through 3D cone shaped location-aided routing protocol for FANETs", Sudesh Kumar et al. presents a novel approach for the modification of location-aided routing protocol. The manuscript "Low-cost ultrasonic based object detection and collision avoidance method for autonomous robots", Jawad N. Yasin et al. offers an efficient collision avoidance algorithm that detects and avoids obstacles autonomously in the vicinity of a potential collision. The manuscript "Self-tuning fuzzy PID controller for servo control of hard disk drive with time delay", Anil Kumar Yadav et al. suggests an innovative system for servo control of hard disk drive (HDD). COVID-19 pandemic has transformed the entire world. The next manuscript, "Identifying propaganda from online social networks during COVID-19 using machine learning techniques", Akib Khanday et al. proposes a novel framework for identifying propaganda from online social networks. The manuscript "Deployment of Li-Fi in indoor positioning systems", Harshvardhan Beria et al. delineates an algorithm for finding the exact coordinates of the object in an indoor area. In today's scenario, we share lot of data while using internet and mobile applications. This data if effectively used can help generate innovative solutions and generate novel opportunities. The manuscript "Remodeling: improved privacy preserving data mining (PPDM)", Meghana D. Shastri et al. propagates an original technique termed Remodeling, to work in conjunction with the k-anonymity and K-means algorithm to ensure minimum data loss and privacy preservation of data. The manuscript "An improved hybrid scheme for e-payment security using elliptic curve cryptography", O. Lawal et al. details a novel scheme for secure e-payments. Distributed Generators play a critical role in modern distribution networks. The manuscript "Optimal location and capacity of DG systems in distribution network using genetic algorithm", M. Madhusudhan et al. captures the Genetic Algorithm approach to determine the optimal site as well as the size of distributed generator units in the distribution network. The manuscript "Dynamically swarm shared mutation based bacterial foraging", Renu Nagpal et al. details a novel algorithm to optimize multidimensional, unimodal and multimodal functions. The manuscript "Mechanism for securing cloud based data warehouse schema", Amar Arora et al. introduces an enhanced encryption model for data warehouses to provide a complete solution for securing the same. The manuscript "Outdoor object detection for surveillance based on modified GMM and Adaptive Thresholding", Navneet S. Ghedia et al. details a modified Gaussian Mixture Model (GMM) and Adaptive Thresholding scheme, designed to progress object detection accuracy for outdoor surveillance. Securing data in data warehouses in hostile cloud networks is important. Fluctuating crude oil prices have raised government concern in the recent times. The manuscript, "Economic effects of low oil prices in Saudi Arabia", Awad Alharbi et al. investigates the economic effects of low oil prices in Saudi Arabia. The manuscript "IPFS enabled blockchain for smart cities", Anupam Tiwari et al. suggests a blockchain enabled smart city architecture based on Inter Planetary File System. Intravascular ultrasound is a ultrasound imaging technique used in the diagnosis and treatment of cardiovascular diseases. The manuscript "Circular diaphragm-based MOEMS pressure sensor using ring resonator", P. R. Yashaswini et al. presents a photonic crystal based MOEMS pressure sensor. The manuscript, "QRED: an enhancement approach for congestion control in network communications", Dharamdas Kumhar et al. details a novel quadratic random early network congestion detection scheme to overcome network congestion. The manuscript, "Performance evaluation of filters for de-noising the intravascular ultrasound (IVUS) images", Mahadevi Chinnaswamy et al. evaluates the performance of different filtering techniques used on ultrasound images to remove noise. With the increasing amount of data available with all enterprises, distributed resource management is now a common feature. The manuscript,"VCSP: Virtual CPU scheduling for post copy live migration of virtual machines", Faramarz Safi Esfahani et. al. details a novel algorithm for live migration of virtual machines. Melody is important in Indian Classical music for raga identification.

The manuscript," Melodic pattern recognition in Indian classical music for raga identification", Makarand Velankar et al. evaluates different algorithms proposed for raga recognition. The next manuscript, "PAD-A: performance antipattern detector for AADL", Abrar Ul Haq Syed et al. proposes an antipatterns based approach in tackling performance problems in early development phases of software. The manuscript, "Energy efficient CLB approach to find optimum modulation scheme in wireless rechargeable sensor networks", Mohit Angurala et al. proposes an efficient scheme for energy conservation in wireless rechargeable sensor networks. Efficient database scheme design is vital to effective software design. The manuscript," Schema design advisor model for RDBMS to NoSQL database migration", Basant Namdeo et al. details a schema design advisor model for RDBMS to NoSQL migration. The manuscript, "PowerShell-based novel framework for Big health data analysis", Wei Ren et al. details a novel mechanism to segment big data into a practical dataset. The manuscript, "Partial discharge localisation in transformers using UHF technique: non-iterative method", Deepthi Antony et al. offers a non-iterative method to determine the partial discharge location. The manuscript, "Output power control of wind energy system by tip speed ratio control using fractional $PI^{\beta}D^{\alpha}$ -controller", Diwaker Pathak et al. applies fractional proportional-integral-derivative controller to variable speed wind turbine application. The next manuscript, "Multifunctional holographic gratings for simultaneous coupling and beam splitting applications in photonic integrated circuits", Asesh Kumar Tripathy et al. puts forward a holographic grating for simultaneous coupling of power and optical beam splitting application. The manuscript, "An advanced approach to the employee recruitment process through genetic algorithm", Anju Khandelwal et al. proposes a mechanism based on fuzzy triangular number for the recruitment process of individuals. Agile paradigm is a preferred paradigm of software development in this dynamically altering software world. The manuscript, "Task allocation and coordination in distributed agile software development: a systematic review", Soulakshmee Nagowah et al. evaluates the varied task allocation and coordination strategies in distributed agile software development. The manuscript, "Effort based software reliability model with fault reduction factor, change point and imperfect debugging", Shozab Khurshid et al. identifies a novel generalized framework to develop effort based software reliability model. Accurate protein class prediction is significant in bioinformatics. The manuscript," Protein class prediction based on Count Vectorizer and long short term memory", S.R. Mani Sekhar et al. details a new Machine learning based prediction algorithm for protein class prediction. The manuscript, "A novel approach for ISL alphabet recognition using Extreme Learning Machine", Anand Kumar et al. emulates an automatic and efficient computer vision based system to recognize the Indian sign language alphabet. The manuscript, "Algorithm for vertical handover in cellular networks using fuzzy logic", Siddharth Gautam et al. empirically details an algorithm for vertical handover in cellular networks. Upcoming technologies are also playing a big role in how education is being disseminated. The next manuscript, "Role of Big Data in education in KSA", Mishaal Almutairi et. al. traces the role played by Big Data in the same. Sanskrit is one of the oldest languages of human civilization but much work on its translation has not been done. The manuscript, "A proposed model for neural machine translation of Sanskrit into English", Nimrita Koul et al. proposes a novel framework for translation of Sanskrit into English. Sign language interpretation is a challenging task for normal people and trained professionals are costly to hire. The manuscript, "Development of novel framework for patient health monitoring system using VANET: an Indian perspective", Pawan Singh et al. proposes a VANET based healthcare monitoring framework to provide emergency treatment to people during travel. The manuscript, "Facial marks for enhancing facial recognition after plastic surgery", Tanupreet Sabharwal et al. details how facial marks can aid in recognising people after plastic surgery. The last manuscript, "Design and analysis of MOEMS based displacement sensor for detection of muscle activity in human body", Preeta Sharan et al. proposes a novel MOEMS based displacement sensor for automatic detection of muscle activity in the human body.

I am sure the contributions in this issue, which is an amalgamation of novel trends and technologies to improve our life and sustainability in the present environment, 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, Ms. Jeyapradha Saravanan and Ms. Nidhi Chandok 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 trust, 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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International Journal of Information Technology (BJIT)