Editorial

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Warm 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 fourth issue i.e. Volume 13 Number 02 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 02 presents a compilation of forty six 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 Vehicular Ad Hoc Networks, Hindi Speech Recognition, E-Trading, Teledental Encryption, Text Steganography, Cloud Services and Test Case Priortization; to name a few.

After almost an year, our world is still battling the COVID pandemic. The first manuscript in this issue "A framework for pandemic compliant higher education national system", Saleh Bajaba et al. proposes a framework for a national education system, which could ensure continuity of education to all, especially the poor sections of the society in times of any global crisis. Low-cost and improved performance amplifiers are always desirable. The second manuscript "QFGMOS and FGMOS based low-voltage high performance MI-OTA", Bhawna Aggarwal et al. propositions two multiple-input operational transconductance amplifiers. Epilepsy is a brain disease difficult to track and treat manually. The next manuscript "A novel peak signal feature segmentation process for epileptic seizure detection", T. Perumal Rani et al. outlines a a new Peak Signal Features (PSF) method for automatic epilepsy detection from EEG signals. High Maternal mortality ratio (MMR) has always been a concern in India. The manuscript "A nested stacking ensemble model for predicting districts with high and low maternal mortality ratio (MMR) in India", Sourabh Shastri et al. implements a nested ensemble model based on Stacking and Voting schemes for prediction and analysis of Maternal Mortality Ratio (MMR) in India. To accommodate growing population and ensure smart usage of available resources context aware occupancy recognition for smart buildings has gained considerable interest. The manuscript "Fuzzy

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Bayesian context-aware system to reduce electricity consumption", Kavita Pankaj Shirsat et al. proposes the design of a context-aware occupancy detection system for electricity management. The manuscript "Time domain based seizure onset analysis of brain signatures in pediatric EEG", Ayesha Tooba Khan et al. intends an automatic detection of epileptic seizures through statistical measures. Cloud computing is a computing model that enables shared access to resources and data based on service delivery model. The manuscript "Framework for web service composition based on QoS in the multi cloud environment", Abdelbasset Barkat et al. designs a novel framework for service composition in the multi cloud environment based on two factors. The next manuscript "Efficient Vehicular Ad Hoc Network routing protocol using weighted clustering technique", Sridevi Hosmani et al. advises a lightweight cluster head selection and cluster formation approach by considering mobility and number of neighbors based on geographical distances of the vehicle to achieve the stability in the network. The manuscript "Multimodal trust based recommender system with machine learning approaches for movie recommendation", Sasmita Subhadarsinee Choudhury et al. proposes a trust matrix measure for movie recommendation to the user. Automatic speech recognition is researched for isolated and continuous-words speech detection. The manuscript "Hindi speech recognition in noisy environment using hybrid technique", Ashok Kumar et al. presents a novel a hybrid feature extraction technique for voice activity and detection. The manuscript "GSCNN: a composition of CNN and Gibb Sampling computational strategy for predicting promoter in bacterial genomes", S. Sasikala et al. suggests a hybrid computational strategy to predict the promoter in bacterial genomes. The manuscript "Framework for agricultural e-trading platform adoption using neural networks", Sanjay Chaudhary et al. delineates digital e-trading platform, an ambitious priority intervention scheme in the agricultural sector. Novel technological models like big data and IoT have altered the way organizations operate. The manuscript "Fog and edge computing: concepts, tools and focus areas", V. Hurbungs et al. propagates the latest fog and edge based works as well as simulators. Mobile and adhoc networks have gained enough popularity in common context. The manuscript "Cross layer packet drop attack detection in MANET using swarm intelligence", Premala Bhande et al. captures a malicious node through cross-layer packet drop attack detection using swarm intelligence. The manuscript "Color image encryption using DNA based cryptography", Nabarun Nandy et al. offers an efficient algorithm for transfer of color images as encrypted text files over an unsecure network. The manuscript "LeDA: leadership delegation based activation scheme for target tracking in

wireless sensor networks", Tauseef Ahmad et al. details a scheme for target tracking that mitigates the power consumption in wireless sensor networks. The manuscript "Enhancing the security in RSA and elliptic curve cryptography based on addition chain using simplified Swarm Optimization and Particle Swarm Optimization for mobile devices", A. Mullai et al. presents a secure RSA and elliptic curve cryptography mechanism. The manuscript "Attack and intrusion detection in cloud computing using an ensemble learning approach", Parul Singh et al. details a an effective network-based intrusion detection model. Security of data on the internet has always been a concern. The manuscript "A review of effectiveness of Saudi E-government data security management", Awad Saleh Alharbi et al. reviews the effectiveness of Saudi government security policies when dealing with such threats and vulnerabilities. The manuscript "Multidimensional spatial clustering and visualization of 3D topographic relief data", Rajesh K. Maurya et al. suggests a framework for analyzing topographical reliefs and terrain regions to extract surface features. Teledental services have become an easy alternative to provide uninterrupted services to dental patients in the post-COVID era. The manuscript, "Newer post-COVID perspective: Teledental encryption by demultiplexed perceptrons", Joydeep Dey et al. evaluates an efficient mechanism for secured encryption of intraoral information in the Teledental field. Wireless sensor networks have been implemented widely. The manuscript, "Improved localization with RSSI and DTN algorithms in wireless sensor networks", Venkata Reddy Adama et al. investigates the Triangulation algorithm that applies a WSN along with GP algorithm to enhance the accuracy of different localization algorithms. The manuscript, "3-D plane based extended Shamir's secret sharing", Ayushi Agarwal et al. details a novel extended Shamir's secret sharing scheme to increase security and decrease the attacks possible. The manuscript," Design and computational analysis of photonic crystal sensor to detect acoustic signals for underwater applications using finite difference time domain algorithm", Hareesh Kumar et al. evaluates a novel photonic crystal sensor for the detection of underwater pressure using finite difference time domain method. In the present era, even government data is not secure from hacker and spy attacks. The next manuscript, "Text Steganography in Webometrics", Shabnam Rahber Yaghobi et al. proposes a text steganography mechanism to increase the security of Persian messages transmitting on the networks. The manuscript, "Designing conceptual model and statistical validation for Government-citizen participation model in Indian context", Jyoti Yadav et al. collates the pivotal role citizen plays in sustainability of eGovernment projects. Different intelligence models have been applied by researchers for an effortless and successful

diagnosis of neurodegenerative diseases like Parkinson's disease. The manuscript," CMBA-SVM: a clinical approach for Parkinson disease diagnosis", Bibhuprasad Sahu et al. introduces an innovative intelligence model with a combination of a chaos-mapped bat algorithm (CMBA) and a support vector machine (SVM). The manuscript, "Enhanced textural analysis for endometrial tuberculosis identification from ultrasound images", Varsha Garg et al. offers an effective computational method to identify and classify endometrial tuberculosis from TVUS images. The manuscript, "Defect prediction model of static code features for cross-company and cross-project software", Satwinder Singh et al. details a binary defect prediction model. The manuscript, "An improved trust-based security framework for internet of things", P. N. Renjith et al. applies a trust-based security method with Direct and Indirect trust evaluation technique to provide highly secure data transmission in the network. The next manuscript, "A hybrid technique for evaluating the trust of cloud services", Doaa Trabay et al. builds a mathematical model to evaluate trust from various opinions based on various criteria using a hybrid fuzzy logic method and multi-criteria decision-making techniques. The manuscript, "Detecting online recruitment of terrorists: towards smarter solutions to counter terrorism", Jaspal Kaur Saini et al. proposes a smart solution through computational techniques to quantify terrorist behavior and detect online recruitment of violent extremists over online social media and dark web forums. The manuscript, "An application layer technique to overcome TCP incast in data center network using delayed server response", Mahendra Suryavanshi et al. identifies a novel an application layer technique called Delayed Server Response at Application Layer (DSRAL) is proposed to mitigate TCP Incast problem. DC motors are best suited for motion control in mobile wheeled robots. The manuscript," Comparison of various controller design for the speed control of DC motors used in two wheeled mobile robots", Huma Khan et al. details the study of modeling and controller on wheeled mobile robots. The manuscript, "Energy optimized hybrid PSO and wolf search based LEACH", G. Devika et al. empirically details Particle Swarm Optimization (PSO) and Wolf Search optimization methods to improve the performance of LEACH algorithm. VLC has been established as a prospective technology for deployment in indoor wireless networks in 5G. The manuscript, "Hard link-switching scheme using pre-scanning for indoor VLC networks", Sumita Mishra et al. emulates and proposes a User Device (UD) based intermittent link switching based on hard link switching. The next manuscript, "Drug resistant tuberculosis classification using logistic regression", Odu Nkiruka Bridget et al. examines the classification of drug resistant tuberculosis, based on existing symptoms, using logistic

regression. The hill roads in India serves as major connecting link between two places and are affected by landslides every year during monsoons and intense summer showers. The manuscript, "A hazard preparedness plan for a selected stretch of hill road between Kodaikkanal and Palani", Evangelin Ramani attempts to identify zones susceptibility to landslides along the selected stretch using a bivariate statistical model frequency ratio, map the spatial variability of susceptibility to landslides using Geographic Information System (GIS) and formulate a preparedness plan to minimize the social and economic impacts of landslides on the community. The next manuscript, "Enhancing cloud performance using task scheduling strategy based on resource ranking and resource partitioning", Ismail Zahraddeen Yakubu et al. proposes a method for achieving an efficient resource allocation in terms of response time and expected QoS delivery through resource ranking, resource partitioning and task classification. The major challenge to PV systems nowadays is to adapt to the changing environmental conditions. The manuscript, "The Survey of MPPT under non-uniform atmospheric conditions for the Photovoltaic Generation Systems", Manisha et al. elaborates a comprehensive and relative analysis of different MPPT techniques. The manuscript. "A novel protocol for stable period and lifetime enhancement in WSN", Ashutosh Rastogi et al. proposes a novel region based routing protocol for the rise in stability duration and lifetime improvement. Detecting impurities in water is important to make it fit for human consumption. The manuscript, "A novel automated framework for water impurity detection", Afzal Shaikh et al. details the development of an algorithm and computer simulation of a Hexagonal Ring Structure-based photonic sensor for the detection of harmful water impurities. The next manuscript, "Unmanned aerial vehicle-collaborative 5G: a cooperative technology for enhancement of 5g nr", Mobasshir Mahbub outlays certain wireless communication scenarios where unmanned aerial vehicles can be utilized to ensure better coverage, enhancement of efficiency and capacity. Agriculture is the main feeder of any nation. The manuscript, "Blossom End Rot Disease Tracking and Prevention: A Smart Approach", Subramanian Saravanan et al. presents an investigation of a framework to forestall the event of blossom end rot disease. The manuscript, "Load aware multipath data forwarding for enhanced lifetime of WSN", Yogesh Tripathi et al. lays an efficient multipath routing algorithm to enhance the lifetime of the network. The last manuscript, "Discrete and combinatorial gravitational search algorithms for test case prioritization and minimization", Anu Bajaj et al. proposes a discrete and combinatorial gravitational search algorithm to solve the test case prioritization and minimization problems.

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, Ms. Deepika Sureshkumar 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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