**EDITORIAL**    **OPEN ACCESS**

# FRONTIERS IN INTELLIGENT SYSTEMS DEVELOPMENT

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## ABSTRACT

*Science and technology has been growing rapidly and there is great need for developed on intelligent applications which would be useful to society. This special issue is intends to bring out intelligent systems in the area of science and technology. Key objective is to provide a guide to the rapidly developing resources in science and technology and their impact on human lives. Papers of this special issue include intelligent systems developed in the area of Statistical Analysis, Machine Learning, Soft Computing, Next Generation Computing, and Medical Image Processing. In the following section, we start by providing the readers of this special issue a brief overview of these research papers.*

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It's my great pleasure to publish the special issue entitled FRONTIERS IN INTELLIGENT SYSTEMS DEVELOPMENT (FISD) and I thank all the contributors, editors, and reviewers for their all contributions and cooperation.

In the he first paper in this special issue, ''Implementation of area efficient multiplier and adder architecture in digital fir filter'', Srividya presents two architectures for multiplier design, they are modified booth algorithm and Vedic algorithm. Vedic algorithm is used for implementation as it consumes less area than modified booth algorithm.

The second paper by Prakash kumar et al. intend in analyzing the effect of network failure on QoS and reliability of the system in the presence of high request rate and network traffic. Performance of existing load balancing algorithm is investigated and compared in faulty environment.

The next paper by Prasenjit Mukherjee Sasi and Baisakhi Chakraborty propose a novel Hybrid Knowledge Provider System (HKPS) where permutation-combination (PC) based parsing technique and Grammatical Rules (GR) based parsing technique have been applied on a single system.   HKPS is an automated system that shall be able to extract text and image based knowledge data from database.

Two-fold techniques for optimizing system performance using Trigger based VM Migration technique is presented by Prakash kumar et al. This gets activated when CPU temperature increases beyond an upper threshold value, called Hotspot. A Network File System (NFS) based dynamic load balancing strategy is proposed for better system resource utilization.

The analytical approach towards Classification of text documents using integer representation and regression: an integrated approach is the focus of the next paper. Ajit Danti and SN Bharath Bhushan describe integer representation using ASCII values of the each integer and linear regression for classification of text documents. Extensive experimentation is carried out on four publically available databases show the effectiveness of the proposed mode.

The subsequent paper deals with a student evaluation model using Bayesian network in an intelligent e-learning system. Baisakhi Chakraborty and Meghamala Sinha focuses on an evaluation model to correctly detect the

knowledge level of each student based on their response to questions. The uncertainty factor has been defined by terms guess and slips parameters.

An in-depth review is performed in the next paper on Inter of Things (IoT) enabled in smart store by Ramesh S Nayak et al. The ideology of the smart store is to notify the store owner about the stock and various other requirements through an application in their phone. This enables the Store owner to notify his supplier to refill the stock.

A novel approach for human activity recognition is presented in the next by Kishor H Walse et.al. Benchmark dataset is considered from the WISDM laboratory, which is available in public domain. Author has performed experiment using AdaBoost.M1 algorithm with Decision Stump, Hoeffding Tree, and Random.

Final two papers are related to Computer Aided Diagnosis (CAD) of early cancer detection. Medical studies show that cancer can be easily cured if it is detected at an early stage. The authors of the last two papers are Steven Lawrence Fernandes et.al who presented two novel techniques for early cancer detection. The developed techniques are analyzed using the images obtained from cancer hospitals and validated with after seeking the advice of a cancer medical practitioner.

## ABOUT THE GUEST EDITOR

*Prof .Steven Lawrence Fernandes* is a member of Core Research Group, Karnataka Government Research Centre of Sahyadri College of Engineering and Management, Mangalore, Karnataka. He has received Young Scientist Award by Vision Group on Science and Technology, Government of Karnataka. He also received grant from The Institution of Engineers (India), Kolkata for his Research work. He completed his B.E (Electronics and Communication Engineering) with Distinction from Visvesvaraya Technological University, Belagavi, Karnataka and M.Tech (Microelectronics) with Distinction from Manipal University, Manipal, Karnataka. Currently he is perusing his Ph.D. in the area of Pattern Recognition. His Ph.D work "Match Composite Sketch with Drone Images" has received patent notification (Patent Application Number: 2983/CHE/2015) from Government of India, Controller General of Patents, Designs & Trade Marks. He has 5 years of industry experience working at STMicroelectronics Pvt. Ltd and Perform Group Pvt. Ltd. He has published several papers in peer-reviewed International Journals having Thomson Reuters Web of Science Impact Factor and IEEE, Springer, Elsevier International Conferences. He is also serving has reviewer and guest editor for several Science Citation Indexed and Scopus Indexed International Journals.

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