

## ***Editorial***

### **Emerging Eco and Agro Informatics Practice for Sophisticated Environmental and Agricultural Practice**

Informatics is one of the latest and emerging interdisciplinary fields of study and practice. Within this branch, Environmental Informatics is focused on ecology and environment, supported by allied technologies. Some of the alternative names of Environmental Informatics include Environmental Information Science, Environmental Information Systems, Environmental Computing, etc. As various technologies are growing in environmental systems, within this Data Science and Analytics are emerging. Environmental Data Science is a good alternative nomenclature which may be considered with a focus on Data Analytics, Big Data and Data Sciences. Environmental Informatics gave rise to many other fields and areas such as Forest Informatics, Irrigation Informatics, Ecological Informatics, Biodiversity Informatics, etc. Environmental Informatics is impactful in diverse areas viz., Oceanography, Geography, Geology, Marine Science, Biology, Forestry, Forest Management and so on. Among the latest sub-technologies, the important ones are:

- ❖ Cloud Computing and Virtualization
- ❖ Big Data and Analytics
- ❖ Geographical Information System
- ❖ Remote Based System and Sensing
- ❖ Web Management and Usability Designing
- ❖ Genetic Algorithm

Environmental Informatics is close to some of the alternative areas and subjects like Green Information Systems, Green Computing, etc. All these are helping and emerging in developing environmental systems for a proper and effective societal and economic development of a nation. The proper applications of Environmental Informatics are also fruitful

in developing intelligent social system. This branch is changing rapidly and it is dedicated now towards sustainable society integrated with the technologies. A proper support from the Government is important for better and effective technological applications and utilizations. Proper budget and finance is also required in order to achieve safe and healthy environment. Like Environmental Informatics another branch which is also supporting and developing society is Agricultural Informatics which is giving its support by improving agricultural systems.

Agricultural Informatics is merged with Agricultural Science and Informatics/Information Science. This is a combination of 'IT and Computing' in 'Agriculture and Allied Domains' and it leads to a proper agro development. Agricultural Informatics is modernizing agricultural systems and developing agricultural activities for various computation and information management system development.

Agriculture is an important sector in India and can be treated as an important tool and system in transforming the socio-economic conditions, and indirectly may result in agricultural economic development. Agriculture is the main source of livelihood and most of the rural people depend on agriculture. The continuous support of agro informatics enhances opportunities in rural community development for improving market information and lowering transaction costs for poor farmers and traders. The National Policy on Farmers emphasizes the use of Information and Communication Technology (ICT) for easy and effective availability of information to the farmers. Combining Environmental and Agro Informatics therefore guide the development of the environmental and agricultural systems, and as a whole result in reaching sustainable goal of UNDP.

This edited volume comprises various basic and emerging areas of Environmental Informatics and Allied Areas, focusing mainly on Agricultural Informatics related emerging topics and issues. It is an interdisciplinary field that combines *environmental science, computer science, and information technology*. It focuses on using computational methods, data analysis, and modeling techniques to study and address environmental challenges. Researchers in this field develop tools and systems to collect, process, analyze, and visualize environmental data. These efforts help us better understand natural systems, predict environmental changes, and make informed decisions for sustainable resource management.

*Environmental science* is an interdisciplinary academic field that integrates *physics, biology, and geography* (including *ecology, chemistry, plant science, zoology, mineralogy, oceanography, limnology, soil science, geology, physical geography, and atmospheric science*). It focuses on the study of the environment and the solution of environmental problems. Environmental science emerged from the fields of natural history and medicine during the Enlightenment. Today, it provides an integrated, quantitative, and interdisciplinary approach to understanding environmental systems. Environmental studies incorporate more of the social sciences for understanding human relationships, perceptions, and policies toward the environment. Environmental engineering, on the other hand, focuses on design and technology for improving environmental quality. Environmental scientists seek to understand earth's physical, chemical, biological, and geological processes and use that knowledge to address issues such as alternative energy systems, pollution control, natural resource management, and the effects of global warming and climate change on natural systems and processes. Further some allied environmental concerns of interdisciplinary areas which are connected with banking-business and commerce are also emphasized in current and future trend of Society 5.0.

– *Editors*

P.K. Paul

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## **About the Editors**



**Dr. P.K. Paul**, *D.Sc. (IST)- UA Mexico, PhD (IST), PDFC (EIS), FAU (Mexico), FBSS, FIARA*  
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**Dr. P.K. Paul** holds prestigious and unique D.Sc. in Information Science and Technology (IST) degree from Azteca University, Mexico under Dr. Agustin Yoh International Postdoctoral Fellowship (DAYIPF) Program. He also holds PhD in IST from IEST Shibpur, Post-Doctoral Fellow Certificate (PDFC) Program in Environmental Informatics. He has his credit unique and research based degrees viz. M.Tech. (by Research), MS (by Research) in addition to M.Sc. (Double). He is currently working as Asst. Professor (IST) & Executive Director (MCIS Program), and Head/Coordinator at Dept. of Computer & Information Sciences, and additionally Information Scientist (Offg.) Position at Raiganj University, West Bengal, India.

Dr Paul is actively engaged in the research and academic activities in the field of IST and Engineering Sciences related to Information Processing and Management. He is actively associated with Raiganj University, Raiganj, West Bengal in teaching and learning activities. He is also CEO and Vice President of IST Foundation. Virtually he is among the few Indian Information Science professionals who hold Post Graduate Qualification in all the dimensions of Information Sciences, ranging from Computer Science, Management Science, and Information Technology. He is specialized in emerging IT & Computing subjects that have social and business touch. He designed country's first MBA-Information Management Program for VMS University, Sikkim. He is also a mastermind for designing India's first interdisciplinary Masters (MSc) Program on Computing (MSc-Computer & Information Science) based on principles of interaction of information-technology with people. The first of its kind program has

already been started in the Government University, RGU, India. He is credited with research policy paper on Cloud Computing Applications in Information Science, Systems, Information Centre, Green Computing or Green IT in Information Field/I-Schools Aspects/ Usability Engineering in Information Science and Services/HCI in Information Uses/Information Science Educational Aspects/ [IST]/Information Scientist/Geo-Information Science, Quantum Information Science and so on.

Dr Paul holds 250+ Authored Indexed, Refereed Papers, Articles, and 100+ Book Chapters to his credit and about 30 National and International Authored and Edited Books. He is Chief Editor of IJASE and IJISC, New Delhi, IRAJMSS of IRA Academy Research, India. As the Chief Editor of IJAEML of Srinivas Publications, Mangalore, India, he is dedicated to research promotions. He is also involved as Editorial Board Member and Reviewer of more than 100 National and International Journals in diverse fields ranging from Computer Science, Informatics, Management, Engineering Science to Education, Social Science, Health Science, Pharmacy, Journal of Organizational and End User Computing, International Journal of E-Adoption, International Journal of Web Services Research, International Journal of E-Health and Medical Communications, International Journal of Healthcare Information Systems and Informatics, JECO, IJIRR, IJHCITP, IJOSSP, IJMDEM, IJTHI, IJDET, IJITPM, IJISSCM, IJISSS, IJBDCN, IJWP published from United States, Dubai, India, Nigeria, South Africa and so on. He has conducted about 250+ international conferences spread over 50+ countries and events as a committee member, chair, TPC, reviewer, etc. He holds the credit of organizing 12+ Conferences (with Indian and International Institutions) just in 2021 as a Director, Program Chair, Co-Chair, General Secretary, Convener etc. and among them the important ones are ICRICC-2021, ISFARAC-2021, ICONAIIS-2021, IMCISMRSS-21, ICARI-2021, ICONECBIT-2021, ICEAS-2021. He also served in various events as visiting, invited and guest speaker, a few important ones are ICRDSTHM-17, iCon-MESSSH'19, ICCISD-2023, AMRIT-2023, NSETRAR-17, ICIRHT-17, etc.

Dr Paul has delivered several invited talks in leading and reputed academic and industrial establishments like SRM University, Sikkim University, VIT University, Srinivas University, Mangalore University, Assam Central University, Chaitanya Deemed to be University, TCG Digital, and CloudNet India. He has received many Awards such as Best Researcher Award in Information Sciences (from IARA, Trichy), David

Clark Blair Young Scientist Award in Computer & Information Science (from BSS, India), International Young Scientist Award (from ISROSET) for the contribution in Health Informatics, Citation Award (from SSCET/ Sri Sai University), International Social Science and Digital Society Think Tank Award-2020, International Outstanding Research & Scientific Events Organizer-2021, Dr. Agustin Yoh International Postdoctoral Fellow Award and Fellow of Azteca University (FAU) in 2021, etc.



**Prof. G. Damodar, Ph.D.**

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In his 46 years of teaching and research experience, Prof G Damodar has to his credit 45 books written and 11 edited, 81 papers published, presented and contributed, and 60 general articles. He has successfully guided 32 M. Phil. and Ph.D. scholars, completed 3 UGC Projects, gave 26 seminars and conducted 29 workshops. He has attended and presented papers at 28 national and 15 international conferences, gave 45 invited talks and lectures. He visited 22 countries including Sweden, USA, UK, Denmark, Singapore and Italy on academic assignments. He is a member of 22 academic bodies, and was conferred with State Best Teacher Award in 2010 by AP Government, and the President Excellence Award of Lions Club International. He was the President of India's Nominee for Dr Harisingh Gour Central University, Sagar, Madhya Pradesh, during 2015-2018. Two scholarly Festschrifts were published in his honor by prestigious Delhi Publishers in 2018. His three latest textbooks titled *English for Communication 1, 2 & 3*, meant for the students of General English at UG Level of Satavahana and Chaitanya Universities, were published by Cambridge University Press. His latest translation of *My Journey*, Modi's 67 poems into Telugu as *Naa Prayanam Lo ....* was published by Srilekha Sahithi, Warangal, and it was acknowledged by the Prime Minister's Office. Currently, he is the first Vice-Chancellor of Chaitanya (Deemed to be University), Warangal. His detailed CV in 81 pages is available at [www.chaitanya.edu.in/vice-chancellor](http://www.chaitanya.edu.in/vice-chancellor).



### **Dr. G. Shankar Lingam**

*D.Litt., Ph.D.(CSE), UGC.Net, APSet, M.Tech.(CSE)*

*Professor in Computer Science & Engineering Dean, Faculty of Engineering & Technology, Hyderabad, India*

*Chaitanya Deemed to be University*

*IAO Evaluation Member-India Chapter*

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**Dr. Shankar Lingam** is a visionary leader committed to academic excellence, research, and the holistic development of educational institutions. A highly accomplished professional with extensive experience spanning over 25 years in academics, administration, and research. Possesses a diverse educational background, including a Ph.D. in Computer Science and Engineering, a D.Litt. honorary degree, and various certifications. Currently serving as the Dean, Faculty of Engineering & Technology at Chaitanya (Deemed to be University), with a tenure of 2 years. He formerly held the position of Principal & Professor at Chaitanya Institute of Technology & Science for 8 years. Demonstrated expertise in academic leadership, curriculum development, and strategic planning, contributing to the growth and success of educational institutions. Over 25 years of continuous service at Chaitanya, holding various roles such as Director, Head of Department, and more. Active involvement in academic and administrative bodies, including Executive Council, Academic Council, Financial Committee, and Board of Studies.

He Taught a range of subjects for UG & PG Professional Programs, including Programming Concepts, DataStructures, Computer Networks, and Mobile Application Development. He has Proficient in a wide array of programming languages, web technologies, databases, and development tools. And he has Established and maintained computer laboratories, configured LAN and Wi-Fi, and developed automation software for various college processes. Further he has Published numerous research papers in reputable journals, contributing to the fields of Processor Architecture, Optimization in Multiprocessor Systems, Mobile Applications, and more. He has completed a Ph.D. thesis on "Processor Architecture: A Study" and actively engaged in guiding research projects. He hold Three patents and two books have been published.



He has Received prestigious awards such as the ELSEVIER Best Academician Award and Dr. Sarvepalli Radhakrishnan Best Teacher Award. He also Recognized with the ELSEVIER Lifetime Achievement Award for outstanding contributions to research.



**Dr. N. Satheesh Kumar, Ph.D.**

*Professor*

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To be a challenging profession where I can utilize my skills and I can put forth my best for the professional and organization effective. As part of Academics, awarded Ph.D. 2013, Master's degree in Computer Science and Engineering in the year 2010, Master of Philosophy in 2006, and Master of Science in Computer Science from Kakatiya University in 2000.

I have 22 years of teaching experience in which 6 years of research experience. During my tenure I was responsible for various academic and administrative activities.

**Research Summary:**

No. of papers Published in national and international journals / Conferences	: 65
No. of Books Published	: 02
No. of National / International Conferences organized	: 03
No. of Workshops / FDP's Organized	: 35
No. of Workshops / FDP's Attended	: 51
Completed Research Projects (Funded)	: 02
Ongoing Research Projects	: 01

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