ICDAM-2021 International Conference on Data Analysis and Management

Organized Jointly by

JAN WYZYKOWSKI UNIVERSITY, POLAND,

PIET (Panipat), & IIS Deemed to be University (Jaipur), INDIA

On 26 June, 2021.

********** CALL FOR PAPERS **********

## Special Session

# DATA MANAGEMENT FOR EFFICIENT GREEN COMPUTING

**Motivation & Objective of the Special Session**

Green computing is the environmentally responsible and eco-friendly use of computers and their resources. In broader terms, it is also defined as the study of designing, manufacturing/engineering, using and disposing of computing devices in a way that reduces their environmental impact. Many IT manufacturers and vendors are continuously investing in designing energy efficient computing devices, reducing the use of dangerous materials and encouraging the recyclability of digital devices and paper. Green computing is also known as green information technology (green IT). Green computing, or green IT, aims to attain economic viability and improve the way computing devices are used. Green IT practices include the development of environmentally sustainable production practices, energy efficient computers and improved disposal and recycling procedures.

Green Computing is nowadays one of the major challenges for most IT organizations that involve medium and large-scale distributed infrastructures like Grids, Clouds and Clusters. The conference will focus on solutions for all aspects of green computing such as energy efficiency, carbon footprint reduction and cooling management. The tradeoffs between energy efficiency and performance have become key challenges that must be addressed in both, distributed and traditional performance-oriented infrastructures. Particularly relevant is the so-called Smart Grid technology, seeking to optimize distributed electricity generation, especially from renewable sources, and to promote the use of smart devices (including smart home and new vehicular energy approaches) that require further research on distributed communications, energy storage and integrations of various sources of energy.

Green networking is a broad term referring to processes used to optimize networking or make it more efficient. This term extends to and covers processes that reduce energy consumption, as well as processes for conserving bandwidth or any other process that will ultimately reduce energy use and, indirectly, cost. The issue of green networking has many important applications, especially as energy becomes more expensive and people become more conscious of the negative effects of energy consumption on the environment.

Traditional data management systems lack the capability to handle big data storage and analytics requirements and thus the process of greening is crucial for big data as analytics on tremendous size of data sets requires high computing power, scalable and efficient storage space, high availability of main memory, and fast communication media on always-on local physical or enterprise cloud. Green big data management will focus on maintaining efficiency in resource utilization, energy consumption, and infrastructure scalability.

**Session Outline**

**Session** aims to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results on all aspects of Green Networking and Communications, data management for efficient green computing. It also provides a premier interdisciplinary platform for researchers, practitioners, and educators to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered and solutions adopted in this field.

**Specific Topics of Interest**

Specifically, we encourage researchers and industry experts to submit original contributions in the following major areas (indicative list, other related topics will also be considered):

- Energy Aware Systems & Technologies
- Energy resource aware access strategies for massive machine-type communication
- Application-context specific ambient energy harvesting techniques
- Sustainability in software engineering
- Cooperative energy management strategies
- Collaborative wireless energy transfer and information communication solutions
- Distributed beamforming technologies
- Green big data analytics
- Transition to Green Data Storage
- Challenges While Making Transition to green computing
- Machine learning techniques for energy management
- Energy harvesting aided distributed energy resources and smart grid connectivity
- Database Management system
- Query optimization
- Data mining
- Web Mining
- Game theoretic and economic aspects of energy sustainability
- Mobile-aided (terrestrial and aerial) energy sustainable networking solutions
- Embedded systems and implementation platforms on energy sustainability
- Energy sustainability through edge-, fog-, and cloud computing
- Node-level and network-level energy management strategies
- Cross-layer solutions for energy-optimized smart communication devices
- Network architecture level solutions on energy sustainability
- Bio-inspired energy-sustainable communications
- Algorithms for Reduced Power, Energy and Heat
- Green Computing and Green Communication Networks
- Integration of Smart Appliances

- Internet of Things for Sustainability
- Energy-efficient Wireless Systems and Networks

**Submission Procedure**

Researchers and practitioners are invited to submit papers for this special theme session on DATA MANAGEMENT FOR EFFICIENT GREEN COMPUTING on or before 31 March 2021. All submissions must be original and may not be under review by another publication. Interested Authors should consult the conference's guidelines for manuscript submission at https://easychain.org/conference/?conf=icdam2021.

All submitted papers will be reviewed on a double-blind, peer review basis.

NOTE: while submitting paper in this special session, please specify [DATA MANAGEMENT FOR EFFICIENT GREEN COMPUTING] at the top (above paper title) of the first page of your paper.

SPECIAL SESSION CHAIR(S) and EXPERTS

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See you at ICDAM 2021 at Poland on 26th June, 2021

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