Future Cities and Environment

Call For Papers: Empowering Future Generation of Smart Cities using Green Computing

Future Cities and Environment invites you to submit to our special collection, *Empowering Future Generation of Smart Cities using Green Computing***.**

The future Smart Cities will save vast amounts of energy and offer the best possible living conditions in urban areas. This is the final goal of Green Computing, which is currently a key point of research. Green computing is an emerging area of research in the information and communication technology (ICT) industry, which aims to create sustainable computing models that reduce greenhouse gas emissions resulting from energy use and maximize renewable energy sources. Green computing is a cross-disciplinary sub-field that generally focuses on designing, implementing, and analyzing computer systems that minimize environmental impact.

Green computing uses fewer resources like electricity, processing power, and storage. Green computing can be achieved by using virtualization technology to use hardware resources efficiently. Green computing focuses on conserving resources and therefore helps in reducing the environmental impact. Cloud computing can be achieved by providing on-demand access to applications without buying costly hardware and software. These systems will have fewer failures and breakdowns, thus improving the reliability factor. With energy prices rising worldwide, energy conservation has become very important for individuals and organizations. Green computing offers a way to cut down on energy consumption by lowering the number of servers used for computation and reducing it. One of the challenges to deploying green computing is gaining acceptance from other fields and industries of information technology. The challenge with green computing is that it is not a single technology or platform but rather an area for developers to focus on their systems' environmental impact, design them accordingly, and integrate sustainability into their applications. The main obstacles that hinder the development of green computing are the lack of awareness and knowledge of the society; furthermore, there is a lack of economic incentive to implement green computing technologies. With the rise of smart cities, green computing is highly vital. IoT and big data are the pillars of green computing. Data analytics is the other pillar that leads to better decision-making in the smart city.

Smart city computing is in its nascent stage. Smart city solutions are now emerging to address the growing urbanization, increasing number of people living in cities, rising social inequalities, and environmental issues. However, there is a lack of a skilled workforce who can design and deploy these solutions effectively. The future of smart cities using Green Computing is about technology, and best use our resources to live sustainably. The role of ICTs is to optimize resources such as energy, mobility, and water use. Smart Cities are the future of sustainable living in metropolitan areas. However, data storage and processing are still a challenge for these cities. With the advance in green computing, we can develop strategies to overcome this challenge. This special collection invites solutions for the challenges with current power infrastructures and technologies for a sustainable future smart cities.

Topics of interest include, but are not limited to:

1. Big data and urban data analytics for smart decision-making
2. AI-driven approaches for smart buildings
3. Role of smart sensor networks and applications
4. Different renewable energy models in smart cities
5. Role of AI and robotics in smart city planning
6. Internet of things for a sustainable future
7. Mobile green cloud-enabled platform/services for smart city
8. Research and innovation in creative industries
9. Vehicle networks and intelligent transportation systems
10. Smart City planning and design challenges
11. Challenges faced in safety/security measures for Smart Cities
12. Smart city applications of sensor technologies
13. Role of cloud computing in smart cities

Submissions

All submissions should follow the author guidelines and will be liable for the journal APC of £500 as described on the journal website. Please state the name of the special collection in your cover letter when you submit your manuscript. If you wish to discuss a proposal, please contact Dr Hamed Hashemi-Dezaki at hhashemi@ieee.org.

Important Deadline:

Article Submission Deadline	:	01-August-2022
Authors Notification Date	:	01-October-2022
Revised Papers Due Date	:	01-November2022
Final notification Date	:	01-February-2023

Guest Editors:

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Dr. Hamed Hashemi-Dezaki was born in Borujen, Iran, in 1986. He received the B.S., M.S., and Ph.D. degrees in electrical engineering from the Amirkabir University of Technology, Tehran, Iran, in 2008, 2010, and 2015, respectively. Since 2016, he has been an Assistant Professor with the Department of Electrical and Computer Engineering, University of Kashan, Kashan, Iran. His research interests include the smart grid, power system protection, power system reliability, power system optimization, and high voltage.

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Dr. Hamed Nafisi received the B.Sc., M.Sc., and Ph.D. degrees in electrical engineering from the Iranian Centre of Excellence in Power Systems, Amirkabir University of Technology, Tehran, Iran, in 2006, 2008, and 2014, respectively. He is currently a Research Fellow with the School of Electrical and Electronic Engineering, Technological University Dublin (TU Dublin). His current research interests include smart grid, peer-to-peer energy trading, electric vehicles, power system protection, and power electronics application in power systems.

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Dr. Tamás Orosz, I have started my career at a transformer manufacturer (successor of Ganz Transformer) in Budapest, Hungary, where Tamás Orosz Ph.D. I have made calculations for transformer design. Then, I worked in a small advisor company (HV Solutions Kft.), where I developed small, customized applications (in C++/Python) for independent transformer experts and our partners. It was a great opportunity for me because I worked not only on software development but the development of new and special calculations for transformer design. I have started my Ph.D. studies this time, on the topic of transformer design optimization. The optimizer uses the result of my Ph.D. work, a novel, and very fast, metaheuristic search to solve the power transformer design optimization task.