SPECIAL ISSUE on Embracing Nano computing Technologies for Evolving Cyber-Physical System

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DESCRIPTION

This special issue in **Open Computer Science (IF 2022: 1.5)** focuses on Nano computing Technologies.

With the emergence of new technologies and advancements in computing, various optimizations are being made in the applications like the industrial sector, health care, and military operations. The advances mentioned above are due to the development in sensor operations, communication networks, and intelligence technologies. Cyber-physical systems find their application in areas that require complex modeling and functionalities and the above technologies. Cyber-physical systems integrate devices with controlling, data analysis, sensing, and networking capabilities with the physical objects and infrastructure. Moreover, the whole system is coordinated by the internet and hence provides data sharing and storage capabilities advancements. Accordingly, the deployment of cyber-physical systems, complex technologies like innovative grid operations, the evolution of quantum functions, automated vehicular processes, and industrial control could be simplified. On the other hand, some of the vulnerabilities faced by the cyber-physical systems include the threats of security posted on data, heterogeneous connectivity of the system, wireless exposure of data over the network, fake identity attacks, and social engineering.

Since the risks associated with data mitigation and error caused in the cyber-physical data are high, these systems must be protected with more secure algorithms or integrated with effective technologies. Nowadays, nanotechnology is seen in various applications that include quantum computing to intelligent grid operations. Since the functions performed by the nanosystems are highly secure and faster when compared to other computing technologies, they could be integrated with the cyber-physical applications in overcoming various threats. With the quantum simulation models and the microcomputing models, Nano computing could aid the cyber-physical systems with high performance in extreme conditions of data processing.

Furthermore, nanotechnology includes the processes associated with robotics, medical scale applications, and bioengineering. Hence, the cyber-physical system could be extended to the above applications, nanobot deployments, and cost reduction functionalities. Since both the cyber-physical system and the nanotechnology involve improving real-world computing and data processing efficiency, a more significant number of environmental data could be processed effectively and cost reduction and high-performance computing.

This special issue aims to integrate nanotechnology with cyber-physical systems so that the functionalities of both technologies can be improved. Hence, the researchers and academicians could bring forward the ideas associated with integrating

nanotechnology and cyber-physical systems supported by Edge/Cloud computing models and AI methods.

Research topics could be related but not restricted to:

- Human-centric activities based on cyber-physical systems integrated with quantum computing technologies
- Deployment of effective context management in Cyber-physical systems in association with nanotechnologies
- Effective sensor management concerning ubiquitous and personal healthcare monitoring with cyber-physical systems
- Distributed sensing and coordination in the environment with practical cyber-physical applications powered by nanotechnology
- Optimized network resilience and reliability in cyber-physical systems with nanotechnology applications
- Testbed generation and prototype enhancement for the cyber-physical systems concerning nano models
- A novel approach to resource management and network optimization with nanotechnology-enabled cyber-physical applications
- Enhanced data aggregation and computation modeling with nanotechnology models
- Improvement in security and privacy in sensitive data collected with cyber security models with effective quantum computing models
- Deployment of cyber-physical systems in industry 4.0 in automation and monitoring of sensitive operations

Authors are requested to submit their full revised papers complying the general scope of the journal. The submitted papers will undergo the standard peer-review process before they can be accepted. Notification of acceptance will be communicated as we progress with the review process.

HOW TO SUBMIT

Before submission authors should carefully read the Instruction for Authors, available online.

Manuscripts can be written in TeX, LaTeX (strongly recommended) - the journal's LATEX template. Please note that we do not accept papers in Plain TEX format. Text files can be also submitted as standard DOCUMENT (.DOC) which is acceptable if the submission in LATEX is not possible. **For an initial submission, the authors are strongly advised to upload their entire manuscript, including tables and figures, as a single PDF file.**

All submissions to the Special Issue must be made electronically via online submission system Editorial Manager: http://www.editorialmanager.com/opencs/

All manuscripts will undergo the standard peer-review process (single blind, at least two independent reviewers). **When entering your submission via online submission system please choose the option "SI: Embracing Nano computing Technologies for Evolving Cyber-Physical Syst.".**

Submission of a manuscript implies that the work described has not been published before and it is not under consideration for publication anywhere else.

The deadline for submissions is December 15, 2023 but individual papers will be reviewed and published online on an ongoing basis.

Contributors to the Special Issue will benefit from:

- Critical peer-review
- no space constraints
- quick online publication upon completing the publishing process (continuous publication model)
- better visibility due to Open Access – free, unrestricted and permanent access to all the content
- liberal policies on copyrights (authors retain copyrights) and on self-archiving (no embargo periods)
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We are looking forward to your submission!

In case of any questions please contact Editorial Office (opencomputerscience@degruyter.com)