CALL FOR PAPERS

The aim of the NSC 2013 is to bring together academicians and industry practitioners onto a single platform to share their expertise, experience and diverse perspectives on Systems Thinking. We believe that this approach is the need of the hour and can help us make a significant difference to the society in which we live.

Robotics and Automation for Society

Robotics and Automation are widely used in various industrial applications such as defense research, manufacturing, production of consumer goods, etc. The future development in robotics and automation systems faces severe engineering and scientific challenges. Engineering challenges involve how to successfully integrate complex and newly developed systems due to current technical boundaries. Scientific challenges require future breakthroughs in computing efficiencies, sensor technology, etc. Original research papers are sought to investigate systems thinking approach for developing models and methods in the field of Robotics and Automation.

Systems Approach to Computational Finance

The principles of finance combined with mathematical frameworks form useful financial instruments, strategies and models that are tested and implemented using advanced numerical and quantitative techniques. Application of computer technology has become a key throughout the process. These financial instruments, strategies and models form an integral part of overall financial activities. The systems approach which uses economics (for understanding the behavior of the agents), mathematical (for formulating structure) and statistical modeling (for estimation), computer technology (for large scale computation) and several other disciplines is therefore useful to manage these activities. Original research papers are sought on systems approach to solve challenges in computational finance.

Complex Network Modelling for Interconnected, Self-Organized and Self-Adaptive Systems

Literature proposes the models of self-adaptive (SA) and self-organized (SO) systems to understand and deal with fast growing and increasingly complex real systems/ real networks. Engineering design of such systems is a challenging task and the success story in this field is far from satisfactory. New theories are required to accommodate, in a systematic engineering manner, traditional top-down approaches and bottom-up approaches. The focus areas of this theme include robustness of SA/SO systems, control of emergent properties in SA/SO systems, mathematical modeling of SA/SO systems.

Systems Approach to Healthcare Systems

Healthcare at its core is widely recognized to be a public good. Healthcare covers not merely medical care but also all aspects of pro-and preventive care. How can we develop new healthcare systems that are ideally suited for our needs? And what is "ideal"? There are four criteria that could be suggested to measure whether a healthcare system is ideal.
❏First, universal access, access to an adequate level, and access without excessive burden.
❏Second, fair distribution of financial costs for access and fair distribution of burden in rationing care and capacity and a constant search for improvement to a more just system.
❏Third, training providers for competence, empathy and accountability, pursuit of quality care and cost effective use of the results of relevant research.
❏Last, special attention to vulnerable groups such as children, women, disabled and the aged.
Once we have taken care of the measures on which healthcare systems should be assessed, key questions arise in the design and deployment of healthcare systems that fit the measures described above:
❏How can the true system level complexity of healthcare processes be modeled and measured?
❏How does this system level process model and complexity measures work on a real world healthcare process design and implementation effort?
❏How does process complexity impact change and adoption in healthcare?

Research articles that either propose a healthcare system that is suitable on the measures, or a mathematical/system-level study of the healthcare delivery process, both at policy-level and at deployment level to minimize the delays and leaks are invited.

Social Computing

Social interactions have always been an important part of the human experience. Social interaction research has shown results ranging from influences on our behavior from social networks, to our understanding of social belonging on health, as well as how conflicts and coordination play out in socially developed systems and knowledge platforms like Wikipedia and Quora. Additionally, in social computing, information technology facilitates organized human endeavor, e.g., crowd sourcing in which the collective action is used to tackle problems that have been computationally intractable. This theme invites research articles, discussion sessions and tutorials that propose the use of social computing in different domains.

THEME

Systems Thinking in Social Innovation and Emerging Technologies
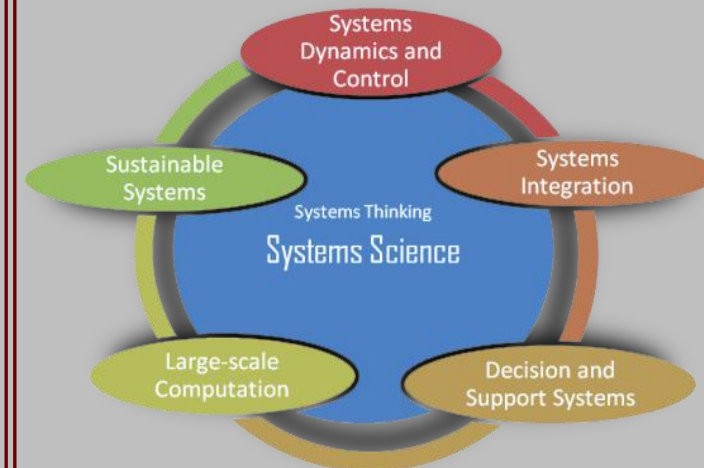
ABOUT NSC

The National Systems Conference (NSC) is an annual event of the Systems Society of India (SSI), primarily oriented to strengthen the systems movement and its applications for the welfare of humanity. The first NSC held in 1973 served to create an awareness of Systems Engineering Methodologies amongst planners, designers, builders and operation managers. The NSC is hosted to facilitate an enriching engagement between academicians and industrialists. By providing a creative platform for people from diverse backgrounds, the NSC seeks to address a spectrum of issues ranging from the scientific to the social needs of contemporary society.

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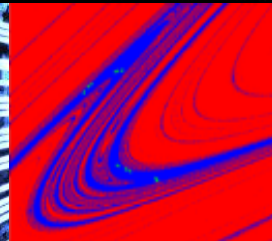Mobile: +91-7665432388
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CALL FOR PAPERS

Cybersecurity and Information

Cybersecurity is one of the prime challenges which include involvement of national, international, public, and private organization dimensions. Information systems and communication networks, an essential factor in economic and social development, require reliability, privacy and security in cyberspace. Such systems are always vulnerable to sophisticated cyber crimes and thefts and thus always pose a challenge to individuals, businesses, organizations and governments as well. As the cyber security threats are on increase, the possible loss could well be government, business and military secrets or individual privacy. Original contributions are sought in all aspects of cybersecurity.

Soft Computing

The objective of this theme is to provide a forum to discuss and disseminate recent and significant research efforts on the Soft Computing research area dealing with challenging applications, with the aim to facilitate cross-fertilization between methodological and applied research, and hence to give new highlights on novel applications and methods.

Systems Thinking in Social Policies, Socio-Economic Systems

System Thinking in Socio-Economic Processes is an upcoming area of research driven primarily by the fact that the economic and social decisions of an Individual are affected by the people with whom they are connected. The root of the social influences is so deep that it pervades the decision of the big companies regarding their choice of business and conduct, the political and the policy making decision of the parties, extent of clientelism and others. In recent decades the explosion and rapid growth of internet and mobile communication has facilitated the spread of news and information across the globe. While, this has magnified the extent of connectedness of people and enhanced economic transaction trade and commerce, on the other hand it has also magnified the risk for rapid spread in epidemics and economic crisis. All these are instances of networks, incentives, and aggregate behaviour of group of people based on links that connect individuals and the ways in which each of their decisions have consequences on the outcomes of everyone else. The need of the hour is therefore to understand the behaviour of individual in Systems approach that encompasses economics, sociology, anthropology, game theory , computer science and mathematics for a better understand of structure and issues related to individual and group behaviour and its consequences on the outcome on socio-economic system.

Systems Approach to Cleaning and Green Technologies

The projected population of the world in the year 2050 is above 9 billion and the demand for natural resources is growing enormously. The need for sustainable, clean and green technologies to meet the requirements of the world cannot be overemphasized. In several parts of the world, such an agenda is tried to be implemented but a lot more needs to be done. Original papers pertaining to a systems thinking approach to green solutions, cleaning and waste management technologies, recycling the resources, efficient and renewable energy sources, water conservation and rainwater harvesting, etc. are invited.

System Dynamics

In this theme, original contributions are sought on system dynamics, the idea founded by Prof. Jay Forrester, MIT. The methodology of system dynamics helps us solving systems problems having hard (physical) and soft components encompassing the integrated states space of both physical and non physical elements in total information space of the system, instead of the subsystems levels which fail to incorporate the internal structural dynamics of feedback loops of the whole system. Application of System Dynamics in the following areas are of concern.
- Telecommunication Systems
- Sustainable Whole Systems Design and Control
- Systems Solutions to Agriculture

The 37th National System Conference will feature contributed and invited papers, as well as tutorial sessions. Prospective authors are invited to electronically submit full papers of their work in English (6 pages, approximately 4500 words, in .pdf format, two columns).

ABOUT CENTRE OF EXCELLENCE IN SYSTEMS SCIENCE

IIT Jodhpur has set up the Centre of Excellence (CoE) in Systems Science in 2011 to promote a systems thinking approach for solving real world problems. The CoE SS is perhaps the first to be conceived in India and has created a novel platform by evolving an interdisciplinary approach to both research and learning. A strong emphasis is laid on a holistic approach to studying and understanding systems as a whole, as opposed to the sum of its parts. The CoE facilitates the development and use of mathematical techniques in various fields including systems dynamics, multidisciplinary and integrated systems design. The CoE SS offers unique academic programs at the UG/PG and the doctoral levels, thereby making it one of its kind in the world.

REGISTRATION DETAILS

The registration fee shall be paid through Demand or Net Banking. The registration details will be updated on the conference website.

Note: Life member of SSI are eligible for a concession of 20% on the applicable registration fee amount.

REGISTRATION FEE

Industry Participants	INR 5000
Academic Institute Participants	INR 1500
Student Participant	INR 500
Foreign National Participants	USD 350

IMPORTANT DATES 2013

Regular Papers :	July 15th
Tutorial Proposals :	August 15th
Notification of Acceptance:	September 20th
Final Submissions Due:	October 1st
Early Registration Closes :	October 10th

SPONSORSHIP FEE

Platinum Sponsors	INR 15 Lakhs
Gold Sponsors	INR 6 Lakhs
Silver Sponsors	INR 4 Lakhs
Bronze Sponsors	INR 2 lakhs

ABOUT IIT JODHPUR

The Indian Institute of Technology Jodhpur represents a distinctive culture of engineering and science education along with other areas of scholarship and generates research to best fulfil the current and emerging needs of society, enhancing its prosperity through environmentally sustainable means. Founded in 2008 in collaboration with France, IIT Jodhpur functions through centres of excellence with innovative curriculum design, interdisciplinary research and thought leadership, delivering to society leaders who are entrepreneurial and well-rounded.