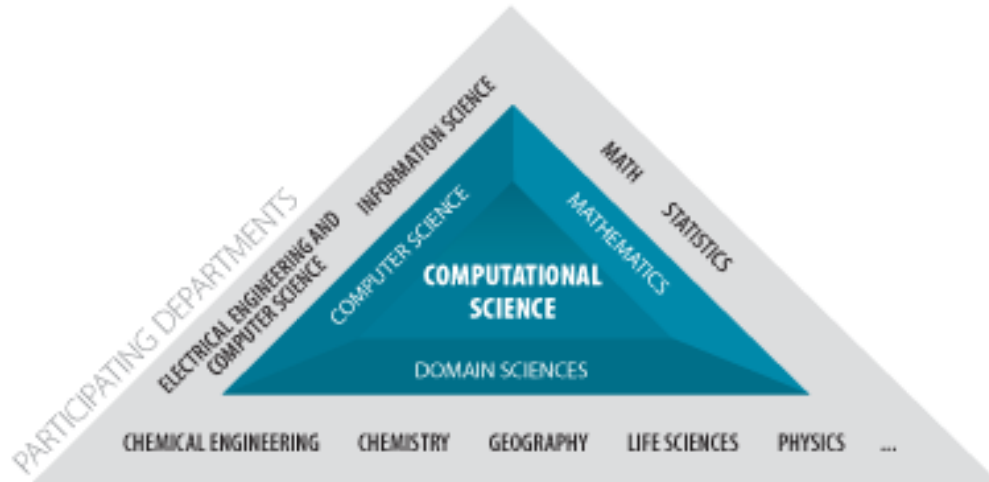


School of Enterprise Information and Communications

Three –day workshop on
Advances in computational science
(21st –23rd Jan 2019)

COMPUTATIONAL SCIENCE: INHERENTLY INTERDISCIPLINARY



Programme Director:

Rishi Arvind

School of Enterprise Information and Communications (SEIC)



ISO 9001:2008

National Institute for Micro, Small and Medium Enterprises (ni-msme)

(An Organisation of Ministry of Micro, Small and Medium Enterprises, Govt. of India)

Yousufguda, Hyderabad - 500 045

**Three –day workshop on
Advances in computational science
(21st – 23rd Jan 2019)**

Computational science (also **scientific computing** or **scientific computation (SC)**) is a rapidly growing multidisciplinary field that uses advanced computing capabilities to understand and solve complex problems. It is an area of science which spans many disciplines, but at its core it involves the development of models and simulations to understand natural systems.

In practical use, it is typically the application of computer simulation and other forms of computation from numerical analysis and theoretical computer science to solve problems in various scientific disciplines. The field is different from theory and laboratory experiment which are the traditional forms of science and engineering. The scientific computing approach is to gain understanding, mainly through the analysis of mathematical models implemented on computers. Scientists and engineers develop computer programs, application software, that model systems being studied and run these programs with various sets of input parameters. The essence of computational science is the application of numerical algorithm and/or computational mathematics. In some cases, these models require massive amounts of calculations (usually floating-point) and are often executed on supercomputers or distributed computing platforms.

Computational science is now commonly considered a third mode of science, complementing and adding to experimentation/observation and theory (see image on the right). Here, we define a system as a potential source of data, an experiment as a process of extracting data from a system by exerting it through its inputs and a model (M) for a system (S) and an experiment (E) as anything to which E can be applied in order to answer questions about S

Objectives

The programme is designed to enable participants:

- To understand the various subdisciplines in computational science
- Understand how to program in python for solving problems of computational science.
- To get an overview of different types of algorithms used for problemsolving.

Contents

- Overview
- Fundamentals of computational science
- Subdisciplines of Computational science

- Computational genomics
- Computational proteomics
- Computational chemistry
- Computational epidemiology
- Cancer computational biology
- High performance computational biology
- Biodatabases
- Computational Agriculture

For whom: This programme is for computer science students, professionals, targeted towards both a novice as well as experienced programmers

Duration & Venue: 3 days at ni-msme, Hyderabad.

Fee: Rs.7500(residential)/ Rs.6000(non-residential) per participant. The fee covers cost of tuition, reading material, Lunch and refreshments. It does not cover travel costs of participants. Fee should be paid in advance by way of demand draft or cash drawn in favour of the **CAO, ni-msme, Yousufguda, Hyderabad – 500 045**. Fee once paid shall not be refunded. However, a substitute may be allowed.

Joining Instructions

Accepted nominees are requested to reach **ni-msme** an Hour in advance of the commencement of the programme time e.g. 9.00am for the registration purpose. During the programme participants are advised to keep themselves free from all official and personal commitments. **Participants are also advised to keep their cell phone in silent mode during class room sessions.**

Please address your enquiries and nominations, so as to reach before 18th Jan, 2019 to:

The Registrar
ni-msme
Yousufguda, Hyderabad - 5000045
Telephones: 91-40-23608544-5-6-7,
23608316-7-8-9
Fax: 091-040-23608547/23608956
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Website: www.nimsme.org

ni-msme - the premier Institute

ni-msme, the pioneer institute in the field of MSME is playing a major role in providing pro-business environment to foster the progress of MSME towards success and prosperity. The raison d'être of this Institute is to assist the Government in formulating policies for micro, small and medium enterprises and to help the practising and potential entrepreneurs through a host of services like training, research, consultancy, information, education and extension. The Institute is a training ground for senior technocrats, bureaucrats and bankers who come here to gain expertise and knowledge in order to equip themselves with latest practices and streamline their operations.

Set up in 1960, **ni-msme** has made valuable contributions by creating an impressive record of achievements beyond the Indian shores, enabling other developing countries to get the benefit of the Institute's facilities and expertise. **ni-msme**'s activities are changing from time to time to meet the needs of enterprises in the context of globalisation.

Located in a sprawling and enthralling campus amidst a rich natural setting, **ni-msme** is well equipped with both physical and academic infrastructure. In keeping with the changing times and technological changes, the Institute has updated its style of functioning by focusing on the use of IT in every aspect of its activities, but at the same time retaining the wisdom and advantages of deeply ingrained traditional practices.

The Institute stores and supplies information that helps make a successful entrepreneur who is well versed in the intricacies of business and can participate in business activities intelligently and diligently through its SENDOC.

ni-msme has made many significant contributions towards enterprise promotion both nationally and internationally. **ni-msme**'s outstanding contributions for the last five years include Faculty Development Programmes for DST (2009), EDPs in Food Processing (2010), Programmes for the officials of the Department of Employment and Self Employment, Govt. of Maharashtra (2010), Programmes on MSME Promotion for the DC-MSME Officials (2010), EDPs / ESDPs / ToTs, Sponsored by the Ministry of MSME, Govt. of India, under the "Scheme of Assistance to Training Institutions" (2010), Programme on Business Plan Preparation, Sponsored by Uttarakhand Livelihoods Improvement Project for the Himalayas (ULIPH), Govt. of Uttarakhand (2010), Entrepreneurship Development Programmes (EDPs), Sponsored by State Bank of India, Mumbai (2010), EDP for First Generation Entrepreneurs, APSFC, Govt. of Andhra Pradesh (2011), Revitalisation of District Industries Centres (DICs) (2012), Training Programme on Stores Management, Sponsored by Andhra Pradesh Beverages Corporation Ltd (APBCL), Govt. of AP (2012), Workshop on Implementation of the Schemes of M/o FPI for the Officials of the Dept. of Industries and KVIB, Govt. of AP (2012), Training Programmes for Officers of KVIC (2012), Project Identification, Preparation of Project Profiles and Project Appraisal, Sponsored by the Directorate of Micro & Small Scale Enterprises, Govt. of West Bengal (2013), Training Programmes on Business Development Plan for Micro and Small Enterprises, Sponsored by Directorate of Industries and Commerce, Govt. of Kerala (2013), Contemporary Human Resources Management Practices, Sponsored by Dept. of Public Enterprises, Govt. of Karnataka (2013), Specialised Skill Up-gradation Training Programmes for A.P. Building and other Construction Workers' Welfare Board, Govt. of Andhra Pradesh (2013), Skill Development Programmes in Food Processing, sponsored by *National Institute of Food Technology Entrepreneurship and Management (NIFTEM)*, Ministry of Food Processing Industries, Govt. of India (2013), Customised Training Programme for Canara Bank Executives Heading SME Sulabhs (2013), "IGNITE" Industrial Motivation Programme, sponsored by the Dalit Indian Chamber of Commerce & Industry (DICCI), CII, APIIC and Govt. of Andhra Pradesh (2013), Balanced Scorecard and Related Tools for Productivity Improvements in Mining Industry, sponsored by Singareni Collieries Company Ltd, Andhra Pradesh (2013), Induction Training for Industrial Promotion Officers on MSME Development, sponsored by Commissionerate of Industries, Govt. of Andhra Pradesh (2013), Orientation Workshop on Skills and Livelihood Development, sponsored by the Ministry of Housing and Urban Poverty Alleviation, Govt. of India (2013), National Workshop on *Prime Minister's Employment Generation Programme (PMEGP)*, sponsored by the Department of Commerce, Industry & Employment, Govt. Madhya Pradesh (2013), Orientation workshop for Industry Members of IMCs, under the scheme "Upgradation of 1396 Government ITIs through PPP", sponsored by the DGE&T, Ministry of Labour & Employment, Govt. of India (2014), Mid Career Programme on MSME Promotion, sponsored by Directorate of Industries & Commerce, Govt. of Kerala (2014), Product Identification and Preparation of Low Investment Project Profiles, sponsored by the Directorate of Micro & Small Scale Enterprises, Govt. of West Bengal (2014), Entrepreneurship Development Programmes in Food Processing, sponsored by AP Food Processing Society (APFPS), Govt. of Andhra Pradesh (2014), Executive Development Programme, sponsored by *National Thermal Power Corporation (NTPC) Ltd*, Govt. of India (2014), Induction Training Programme for Environmental Engineers of APIIC Ltd, Govt. of Andhra Pradesh (2014), Marketing and Branding of Clusters for KVIC Officers, Sponsored by KVIC, Govt. of India (2014), Workshops, Sponsored by DSIR, Ministry of Science & Technology, Govt. of India (2014), IPR Challenges & Prospects, Sponsored by DC (MSME), Ministry of MSME, Govt. of India (2015), Basic Orientation Programme on Management, Monitoring & Implementation of MSE-CDP, Sponsored by the Directorate of Micro, Small and Medium Enterprises, Govt. of West Bengal (2015), Customised programmes for the Directorate General Resettlement, Department of Ex-Servicemen, Ministry of Defence, Govt. of India (2015), Project Appraisal and Financial Analysis, Sponsored by the Singareni Collieries Company Ltd (2015), Executive Development Programme for Managers of Coir Board, Sponsored by the Coir Board, Ministry of MSME, Govt. of India (2015), Entrepreneurship/Career Oriented Programme in Solar Technology, In Collaboration with Construction Management and Consultancy Consortium (CMNCC), New Delhi, (2015), Entrepreneurship Development Programme on Solar Energy, In Collaboration with I Create Skills, New Delhi, (2016) and Programme on Corporate Governance and RTI Act-2005, Sponsored by the Singareni Collieries Company Ltd (2016). The Institute has contributed several research and consultancy services in MSME area, apart from training.

The management of the Institute rests with the Governing Council appointed by the Government of India. The governing body acts through the resident Director. The present Director is Dr. Sanjeev Chaturvedhi

For further details, please contact



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