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CSIR-4PI ACADEMIC PROGRAMME

CSIR-4PI maintains an active academic programme, keeping its objective of developing skill and expertise in mathematical modelling & computer simulation, data intensive research in the country. The activities span the entire spectrum from PhD guidance to undergraduate/postgraduate student projects to specialized courses. Recently introduced Student Programme for Advancement of Research Knowledge (SPARK) is intended to provide a unique opportunity to bright and motivated students of reputed Universities to carry out their major project/thesis work and advance their research knowledge in mathematical modelling and simulation of complex systems. Students and professionals from a wide spectrum of organizations including industries across the country have been benefiting from our various academic programmes over the years. CSIR-4PI is very actively engaged with the AcSIR (Academy of Scientific & Innovative Research) PhD program in Mathematical and Information Science, Physical Science and Engineering Science.

Inside

- ➢ *Ph D Programme*
- ➢ *Thesis/Project by M. Tech/BE/MCA students*
- ➢ *Research Fellowship Programme*
- ➢ *Faculty Participation*
- ➢ *Industrial Visit to HPC*

Ph D Programme

Anil Earnest
    Sunilkumar T C, (AcSIR), Geodynamics of Plate-Boundary Zones
    Silpa K, (AcSIR), Crustal Deformation and Earthquake Cycles

Goswami P
    Kantha Rao, (Mangalore University), Multi-scale Modelling and Analysis of Surface and Soil processes over the Indian Region
    Sumana Sarkar, (Mangalore University), Multisector Application of Seasonal Forecast: Crop yield, Vector-Borne Diseases and High Impact Weather Events over India

Goswami P **(Guide), Gouda K C (Co-guide)**
    Shaktidhar Nayak, (AcSIR), Development and Evaluation of a Model Configuration for Local Climate Projection over India

Gouda K C
    Nagaraj Bhat**,** (VTU), Weather Informatics using Remote Sensing & GIS
    Radhika T V, (VTU), Efficient and Large-Scale Climate Simulation Analysis in Cloud Computing Cluster
    Payoshni Samantray, (VTU), Study of Extreme Rainfall Events due to Cloud Burst using Observation and Model Simulation

Himesh S (Guide), Rakesh V (Co-guide)
    Ajilesh P, (VTU), Charecterstics of Urban Extreme Rainfall Events over the Indian Cities: An Observational And Modelling Study

Himesh S (Guide), Gouda KC (Co-guide)
    Sanjeeb Kumar Sahoo, (VTU), Impact of Urbanization on High Impact Weather Events & Local Climate

Parvez I A
    Ramiz Raja Mir, (AcSIR), Evolution of Crustal and Mantle Structure in Kashmir Himalayas
    Vishal Gupta, (ISM Dhanbad), Site Specific Seismic Hazard Study in Kashmir Valley, NW Himalayas

Patra G K
    Ashapurna Marndi, (AcSIR), Development of Deep Learning Techniques for Multi-Dimensional Time Series Data Analysis

Sangeeta K and **Patra G K (Co-guide)**
    Santhana Lakshmi S**, (**Amrita School of Engineering), Design of Cryptographic Protocols using Computational Intelligence Techniques
    Supriya M, **(**Amrita School of Engineering), Trust Building in Distributed Storage using Cryptography

Rajendran K
    Ipsita Putatunda, (AcSIR), Satellite Data Analysis in the context of Short Range Numerical Weather Prediction
    Jayasankar CB, (AcSIR), Climate Change Modeling Studies

Rakesh V
　　Praveen S, (VTU), Role of Background Error Statistics in Mesoscale Data Assimilation
　　Ajay Bankar, (AcSIR) Impact of Data Assimilation in Mesoscale Models

Ramesh K V
　　Alfred Johny, Simulation of Indian Summer Monsoon using CMIP5 Climate Simulations
　　Safeer K B, Evaluation of Upper Ocean Variability Simulated by IPCC Climate Simulations
　　Edwin Raj E, (UPASI TRF TRI) Climate Impact Assessment on Tea Production over South India

Sajani Surendran
　　Arya V B, (AcSIR), Analysis of meteorological and aerosol observations

Sajani Surendran (Guide), Rajendran K　(Co-guide)
　　Stella Jes Varghese, (AcSIR), Computational modeling of coupled climate system

Sajani Surendran (Co-guide)
　　Nithin Patil**,** (IIT Bombay), Aerosol Radiative Forcing and Impact on Climate

Sridevi Jade
　　Shrungeshwara T S, (Kuvempu University), Active deformation and water vapor studies in Indian subcontinent
　　Chiranjeevi Vivek G, (AcSIR), GNSS studies in Indian subcontinent

Tejpal Singh (Co-guide) and Ravi Babu, (VIT)
　　Nisha, (VIT), Remote sensing / GIS applications in mineral spectra identification

Vidyadhar Mudkavi
　　Kanaka Muthu, CSIR-NAL, (NIT), Experimental and computational investigation of diffuser augmented small wind turbine.

　　Rinku A, CSIR-NAL, (IISc, Bangalore), Modular Design of Ribs in Aircraft wings using Topology and Size Optimization and Non-Dimensional Analysis

Vijayan M S M
　　Shimna K, (AcSIR), Seismo-ionospheric coupling and upper atmospheric perturbations induced by acoustic gravity waves

M. Tech / BE / MCA students' Thesis / Project

Ashapurna Marndi

Kavyashree K R, (VTU), Electricity load forecasting using Deep Learning Technique based on time series data, May 2016

Gouda K C

Rahisha T, (M.Tech), Karnataka Remote Sensing Application Centre (VTU), Bengaluru, June 2016, Change detection study in Karnataka coast using remote sensing and Geographic Information System.

Nischitha Nadig, (M.Tech), Karnataka Remote Sensing Application Centre (VTU), Bengaluru, June 2016, Air pollution monitoring over Bengaluru urban using remote sensing and GIS,

Shobha N, (M.Tech), Karnataka Remote Sensing Application Centre (VTU), Bengaluru, June 2016, Application of remote sensing and GIS in ground water studies over Bangalore Rural,

Harshitha P, (M.Tech), VK Institute of Technology (VTU), Bengaluru, June 2016, Hydro-meteorological disaster modelling and simulation study in HPC platform,

Nandhini, (M.Tech), ATME College of Engineering (VTU), Mysuru, June 2016, Rainfall studies using high resolution remote sensing data

Vibha S, (M.Tech), ATME College of Engineering (VTU), Mysuru, June 2016, Development of an integrated platform for weather monitoring using remote sensing data and ground observation

Megha G, (M.Tech), VK Institute of Technology (VTU), Bengaluru, June 2016, Climate-crop interaction modelling,

Divya, (M.Tech), VK Institute of Technology (VTU), Bengaluru, June 2016, Multi-source observation and Modelling for climate studies

Gururaj, (M.Tech), VK Institute of Technology (VTU), Bengaluru, June 2016, Software system for studying climate parameters over Karnataka,

Sangeetha M, (M.Tech), VK Institute of Technology (VTU), Bengaluru, June 2016, Analysis of climate data in HPC environment,

Niveditha N, V K Institute of Technology (VTU), Bengaluru, June 2016, Regional Climate study using numerical weather modelling and remote sensing data

Rajesh M, (M.Tech), APS College of Engineering (VTU), Bangalore, June 2016, Weather and climate studies using numerical modelling and spatio temporal data mining

G S Hiremath, (M.Tech), APS College of Engineering (VTU), Kanakpura, Bangalore, June 2016, Vector borne disease modelling using climate parameters

Prashant Kivati, (M.Tech), SJB Institute of Technology, Bangalore, June 2016, Climate data analysis in hadoop environment

Parvez I A

Rithika Nanaiya, (M.Tech), Manipal Institute of Technology, Manipal, A study on progressive collapse behaviours of steel and RCC moment frames

Abhilash M B, (M.Tech), Manipal Institute of Technology, Manipal, Study on special truss moment frames and special moment resisting frames with fluid viscous dampers as a seismic retrofit

Rakesh E N, (M.Tech), Manipal Institute of Technology, Manipal, Study on P-delta effects of a building with soft storey

Ashwini J N, (M.Tech), Manipal Institute of Technology, Manipal, Dynamic analysis to compare buckling restrained braces and conventional braces in RC frames

Patra G K

Medini H K, (M.Tech), JNN College of Engineering, June 2016, Designing of hash function using chaotic synchronization.

Priyanka B R, (M.Tech), JNN College of Engineering, June 2016, Design, security analysis and improvement of a new cryptographic stream cipher mechanism based on tree parity machine

Arpitha P, (M.Tech), JNN College of Engineering, June 2016, A novel approach based on neural cryptography to achieve enhanced data security and integrity simultaneously

Vidya M H,(M.Tech.), JNN College of Engineering, June 2016, Design of security analysis and improvement to permutation parity machine

Saurabh Dhumwad, (M.Tech), Manipal Institute of Technology, Jan 2017, Study on block chain technology and its implementation

Chandini A G, JNN College of Engineering, Jan 2017, A study of homomorphic encryption and its application to genomics

Nirantha H S, JNN College of Engineering, Jan 2017, A Study of homomorphic encryption and its application to neural networks

Mahapatra G N

Preethi Subramaniam, Manipal Institute of Technology, Manipal, Urban flooding and its impact on drainage system over Bangalore city

Rakesh V

(M.Tech), Cochin University of Science and Technology, Customized weather informatics for specific agricultural applications

Senthilkumar V

S Thamaraikannan, (B.Tech Internship), IIT Kharagpur, Nanoscale effects on vibration analysis of carbon nanostructures using differential quadrature method

Research Fellowship Programme

Parvez I A

Abhay Pandey, M.Sc. Earth Sciences, University of Hyderabad, Hyderabad

Shikha Srivastava, Department of Geophysics, Banaras Hindu University, Varanasi

Avanie Jain, M.Sc. Tech, Applied Geophysics, Indian School of Mines, Dhanbad

Gouda K C

Sarthak Langde, (B.Tech Internship), Artificial intelligence for climate studies, APJ Abdul Kalam Summer Training Program 2016 of AcSIR.

Patra G K

Pradhan Partha Sarathi, The Morph Cipher: A chaotic cryptosystem, APJ Abdul Kalam Summer Training Program 2016 of AcSIR.

Faculty Participation

Academy of Scientific and Innovative Research (AcSIR)

Sridevi Jade, Global Navigation Satellite System (GNSS) theory and its applications to Geoscience, January 2017 session

Rakesh V, Numerical Weather Prediction

Patra G K, Adjunct faculty, Department of Computer Science, Amrita School of Engineering, Bengaluru

Swathi P S, Ten lectures on parallel programming with MPI, numerical solutions of shallow water and heat equations at the SERB Summer School on Fundamentals on Oceanic Processes and Modelling, 19 May – 11 June 2015, IIT Delhi

Rakesh V, International Course on Weather Forecasting Numerical Weather using Prediction Models at IIRS, organized by Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP), (Affiliated to United Nations) to participants from Asia Pacific region, 24-27 April 2016, ISRO, Dehradun

Ramesh K V, Mentor and resource person, Weather and Climate informatics for industrial and societal applications, INSPIRE SC. CAMP, DST, Kumadvathi First Grade College, Shikaripura, 24-28 October 2016

Industrial Visit to HPC at CSIR-4PI from various Organisation

Coordination and Presentation, N Prabhu

JSS Academy of Technical Education, Bangalore, 17 August 2016, 60 students and 3 faculties.

Nagarjun College of Engineering & Technology, Devanhalli, 20 October 2016, 38 students and 2 faculties.

BMS College of Engineering, Bangalore, 28 October 2016, 25 students and 2 faculties.

Vivekananda Institute of Technology, Bangalore, 14 February 2017, 86 students and 4 faculties.

Lal Bahadur Shastri National Academy of Administration, Mussoorie, 20 February 2017, 27 Trainee IAS Officers and one faculty.

GSSS Institute of Information Science and Engineering Mysore, 20 March 2017, 73 students and 2 faculties.