

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. 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.

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- 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), A study on characterization of seismogenesis along the plate boundary zones of Himalayan and Indo-Burmese arcs

Silpa K, (AcSIR), A study of Indian plate seismogenesis using kinematic slip distribution models of selected earthquakes.

Goswami P and **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

Payoshni Samantray (VTU), Study of Extreme Rainfall Events due to Cloud Burst using Observation and Model Simulation

Radhika TV (VTU), Efficient and Large-Scale Climate Simulation Analysis in Cloud Computing Cluster

Himesh S (Guide) and Rakesh V (Co-guide)

Ajilesh P (VTU), Characteristics of Urban Extreme Rainfall Events over the Indian Cities: An Observational and Modelling Study

Himesh S (Guide) and Gouda K C (Co-guide)

Sanjeeb Kumar Sahoo (VTU), Impact of Urbanization on High Impact Weather Events & Local Climate

Kantha Rao Bhimala (Guide) and G K Patra (Co-guide)

Prasad Babu Kanike (AcSIR), Data Analytics to Identify the Relationship between the Land Surface Meteorological Parameters and Indian Summer Monsoon Rainfall

Mohapatra G N (Guide) and Rakesh V (Co-guide)

Smrati Purwar (AcSIR), Modelling of spatio-temporal variation in urban extreme rainfall events with special focus on localised versus large-scale impacts

Parvez I A

Ramiz Raja Mir (AcSIR), The study of crustal evolution and earthquake hazard in Kashmir Himalayas

Vishal Gupta (ISM Dhanbad), Site specific seismic hazard study in Kashmir Valley, NW Himalayas

Patra G K

Ashapura Marndi (AcSIR), Development of Deep Learning Techniques for multi-dimensional time series data analysis

Iraganeni Rajasekhar Reddy (AcSIR), Block chain for sensitive data storage.

Sangeeta K and Patra G K (Co-guide)

Santhanalakshmi S (Amrita School of Engineering), Design of cryptographic protocols using computational intelligence techniques

Rajendran K

Ipsita Putatunda (AcSIR), Satellite data analysis in the context of short range numerical weather prediction

Jayasankar C B (AcSIR), Reliable climate change projections over India through dynamical downscaling using very high resolution regional climate model.

Rakesh V

Ajay Bankar (AcSIR) Impact of data assimilation in mesoscale models

Praveen S (VTU), Role of background error statistics in mesoscale data assimilation

Ramesh KV

Alfred Johny (AcSIR), Simulation of Indian Summer Monsoon using CMIP5 Climate Simulations

Edwin Raj E, (UPASI TRF TRI), Climate Impact Assessment on Tea Production over South India

Neethu C V (VTU), Modelling the role of land-atmosphere interaction during heatwaves

Safeer K B (AcSIR), Evaluation of Upper Ocean Variability Simulated by IPCC Climate Simulations

Sajani Surendran

Arya V B, (AcSIR), The impact of regional and remote aerosols on Indian summer monsoon variability

Sajani Surendran (Guide), Rajendran K (Co-guide)

Stella Jes Varghese, (AcSIR), Impact of resolution and deep convection parameterization on simulation and projection of Indian summer monsoon and variability

Sridevi Jade

Chiranjeevi Vivek G, (AcSIR), GNSS signal processing and analysis to study impact on position estimates.

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

Anil Kumar V

Gowtham R, (M.Tech), Amrita School of Engineering, Coimbatore, Proof of Concept on Dark net Sensor Implementation in Linux Kernel.

Meenakshi Suresh, (M.Tech), Amrita School of Engineering, Coimbatore, Exploitation of HTTP/2 Proxies for Cryptojacking.

Niranjana R, (Integrated MSc) , PSG College of Technology, Coimbatore, Anna University, Darknet Traffic Analysis using Clustering Techniques.

Srikanth Reddy D, (M.Tech), Amrita School of Engineering, Coimbatore, ACK spoofing at Kernel Level and TCP sender Behaviour Analysis.

Gouda K C

Amar C, (M.Tech), Karnataka Remote Sensing Application Centre (VTU), Bengaluru, Surface Temperature Analysis using Remote Sensing and GIS techniques.

Manjunath T N , (M.Tech), Karnataka Remote Sensing Application Centre (VTU), Bengaluru, Impact of cyclones on Chlorophyll-a concentration in north Indian Ocean using OCM data.

Kantha Rao B

Mrinal (M.Tech), Manipal Institute of Technology, Evaluation of WRF skill in simulation of urban rainfall events with high density rain-gauge network over Bangalore region.

Marndi Ashapura

Rachna Sunilkumar Deshpande, (BE Internship), RNS Institute of Technology, Occupancy Detection using Machine Learning Approach, July- August 2018.

Mohapatra G N

Apoorva DL, M Tech Environmental Science, Strategic Framework For Integrated Flood Disaster Management And Modelling Over Bengaluru, Manipal Institute of Technology, 06 August 2018

Parvez I A

Nazia Hassan, (M Tech), Indian Institute of Science Education and Research (IISER), Kolkata, A probabilistic approach to assess the seismic hazards in North-East India by estimating the parameters for recurrence models of earthquakes

Patra G K

Kasalanati Pavan, Kasalanati Sricharan, VIT, Deep Reinforcement Learning and Block Chain technology.

Dhikshitha S and Ria George, REVA University, Artificial Intelligence with Connected Vehicles.

Shreyas Titnus, Dr Ambedkar Institute of Technology, Vehicle localization based on particle filter.

Ashank D'souza, REVA University, Traffic Optimization for load differing traffic.

Apurva S, BNMIT, Deep Reinforcement learning algorithm for control in SUMO.

Madhuri K, Sushmitha K, Meghavarshini, Veda R Babu, Global Academy of Technology, Number Plate detection system.

Keshav S and Kaliki Poojasri, New Horizon College of Engineering, Traffic Signal Automation for Ambulances.

Nikhil Udgata, NMIMS, Securing Vehicular Communication with Block Chain

Devu B, Amrita School of Engineering, Solving Computational Physics Problems using Python

Rakesh V

Arun V S, (M.Sc), Cochin University of Science and Technology, Urban extreme rainfall simulation using wrf model: sensitivity of model results to microphysical schemes.

Adithya Samanth, (M.Tech), Manipal institute of Technology Crop viability over Karnataka: integration of crop-weather model outputs using arc-GIS.

Dhishana P R (M.Sc), Cochin University of Science and Technology, Simulation of thermodynamic features associated with urban extreme rainfall using weather research and forecasting model and validation against observations

Ramesh K V

S Ayisha (M.Sc), Pondicherry University, System dynamic macroeconomic model.

Senthilkumar V

Aditya Sreekumar, (BE Internship), Peridynamics and its Numerical Implementation on a finite bar, M.Visvesvaraya Institute of Technology, Bangalore.

Jai Kumar, (BS-MS Internship), Modelling of Graphene and Pentagraphene Structures, Indian Institute of Science Education and Research, Bhopal.

Roshan Kumar Singh, (M.Tech), Mechanical properties analysis of Pentagraphene nanowire through Molecular Dynamics Simulation, Rajiv Gandhi Proudlyogiki Vishwavidyalaya, Bhopal.

Research Internship Programme

Gouda KC

Libujashree, Priyanak Kumari, Manisha Sharma, Rainfall prediction using machine learning, M V J Engineering College (VTU), Bangalore, March 2019

Nandan Nayak, Nithin H A, Gautham P, Nithesh S, SMV Institute of Technology and Management (VTU), Udupi, Machine Learning for climate data analysis, March 2019

Faculty Participation

Gouda K C

Data mining techniques and Big data analytics for MOSPI-Indian Statistical Service (ISS) Probationers at C R Rao AIMSCS, University of Hyderabad, 27-28, December 2018.

G K Patra

Advance Mathematical Tools in Engineering Applications Interdisciplinary modelling approach for designing cryptographic primitives, Department of Mathematics, Malnad College of Engineering, Hassan. 2 July 2018

Academy of Scientific and Innovative Research (AcSIR)

Gouda K C

Analysis of Meteorology and Climate Data, January 2019 session

Industrial Visit to HPC at CSIR-4PI

Presentation and Contribution: Prabhu N

Valliammai Engineering college, Dept. of Civil Engineering, SRM Nagar, Kattankulathur, Chennai, on 10 August, 2018, around 30 students and 2 faculties.

MVJ college of Engineering, Dept. Computer Science, near ITPB, Bangalore, on 30 August 2018, around 60 students and 2 faculties.

CMRIT Institute of Technology, Bangalore, on 11 October 2018 around 40 students and 2 faculties

MVJ college of Engineering, Dept. of Information Science and Engineering, near ITPB, Bangalore, on 15th March 2019, around 50 students and 2 faculties

MVJ college of Engineering, Dept. Computer Science and Engineering, near ITPB, Bangalore, on 26th March 2019, around 50 students and 2 faculties