



CoE Team

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- Dr Jaiprakash Verma
- Dr Sapan Mankad
- Prof Dvijesh Bhatt



Server Room

Infrastructure and Equipment

Nvidia GV100 Workstation with 32 GB GPU Memory

Processor : INTEL XEON PLATINUM 8180 CPU (28 CORE / 2.5 GHZ)
 Mother Board : INTEL C621 CHIPSET
 RAM : 256 GB DDR4
 HDD : 512SSD + 8 TB

Param Shavak Super Computer with GP100 GPU Card

Processor : 2 x Intel Xeon Scalable processor 2.2Ghz with 14 cores each
 Mother Board : Intel Xeon
 RAM : 96 GB DDR4
 HDD : 4 * 4TB SATA

Nvidia GP100 Workstation with 16 GB GPU Memory

Processor : INTEL XEON GOLD 6136 CPU (12 CORE / 3.0 GHZ)
 Mother Board : INTEL C621 CHIPSET
 RAM : 256 GB DDR4
 HDD : 512SSD + 12 TB

Nvidia GP100 Workstation with 16 GB GPU Memory

Processor : 2 x Intel Xeon Silver 4110 2.1Ghz
 Mother Board : INTEL
 RAM : 128 GB DDR4
 HDD : 4 x 600GB

20 High-end machine with 32 GB Ram computers for Project Lab

Processor : AMD Ryzen7 2700
 Mother Board : AMD B350PCH Chipset
 RAM : 32 GB DDR4
 HDD : 1 TB

Nirma University
 Institute of Technology
 Computer Science and Engineering
 Department
 Centre of Excellence in Data Science



NIRMA
 UNIVERSITY

INSTITUTE OF TECHNOLOGY

NAAC ACCREDITED 'A' GRADE

BINGHAMTON
 UNIVERSITY
 STATE UNIVERSITY OF NEW YORK

About the Centre

Computer Science & Engineering (CSE) Department, Institute of Technology, Nirma University has established a Centre of Excellence in Data Science in collaboration with SUNY, Binghamton University, New York, USA in January 2020. The centre is located at the 5th floor (N-510) of the new building of Institute of Technology in Nirma University campus. More than 10 PhD faculty members work in the broad area of data science and are involved in various data science related consultancy assignments and funded research projects. The centre hosts contemporary computing facility to support these initiative. The CSE department and the Institute also has strong tie-ups with the industry that are utilized for internships and students placement and offering consultancy and training programs across the entire spectrum of data science resulting in mutual benefits.

CoE in Data Science

Need of the Centre

- Data Science is an interdisciplinary field consisting of methods and systems to extract knowledge and insights from data.
- Data Science encompasses statistics, machine learning, visualization, business analytics, data analytics, and scientific computing. India has shown rapid and sustained economic growth over the last decade and recent developments suggest that the need for the hour is to focus on data science.
- Centre of Excellence in Data Science is established at Nirma University as an effort in this direction.

Objectives of the Centre

- Offering a research hub for undergraduate, postgraduate and doctoral students, attracting international expertise and practitioners
- Stimulating collaboration between academics, partners and stakeholders
- Demonstrating the relevance of the centre for innovation, job creation and economic prosperity
- Securing resources to stimulate multidisciplinary collaborative research projects

Recent Activities of the Centre

- Nirma University-Binghamton University Webinar Series in June to December 2020 and August to December 2021
- A national seminar on “Artificial Intelligence for Digital Transformation: A steps towards Digital India” sponsored by DST and GUJCOST on 30-31 December 2020.
- A co-create MoU between Institute of Technology, Nirma University and JK Lakshmi Cement Ltd. was signed on 23rd Feb. 2021
- A national level Hackathon MINEd 2021 sponsored by Binghamton University, IndiaNIC, Hops Healthcare and JK Lakshmi Cement Ltd. on 26-28 February 2021
- Dr Won and Dr Yoon from Binghamton University taught advanced content in Data Mining (BTech) and Data Mining and Visualization (MTech) as a part of collaborative teaching activity organized by CoE and CSE Department between 6th March and 3rd April 2021 and 21st March and 28th March 2022 respectively.
- A collaborative project between Azure Knowledge Corporation Pvt Ltd and CoE-Data Science in the broad-domain of computer vision
- A national level Hackathon MINEd 2022 on 3-5 March 2022. The event was sponsored by Binghamton University, D360 Inc, Hops Healthcare, JK Lakshmi Cement Ltd and Cactus Global.
- A MoU between Institute of Technology, Nirma University and V360 is signed on 10th March 2022.
- Possibility of a consultancy project between Zydus and Institute of Technology, Nirma University is being explored.

Research Project (ongoing/ completed)

- Design and Development of Scalable Data Mining Algorithms for Big Earth Data, Funding scheme: RESPOND, ISRO
- Development of a comprehensive technique for soil moisture estimation using L & S band airborne polarimetric SAR data, Funding scheme: NISAR, ISRO
- Development of advanced algorithms for land use land cover classification using deep learning techniques, Funding scheme: MAHTRAM, ISRO
- Mining crop cover, crop type and crop stages from L & S band SAR data, Funding scheme: NISAR, SAC-ISRO
- SAR Polarimetry for Detecting Ocean Surface Targets, Funding scheme: NISAR, ISRO
- Spectral Discrimination and Separability Analysis of Crops and Weeds using Deep Learning Techniques, Funding scheme: AVIRIS, SAC-ISRO
- Development of Blind Hyper Spectral Unmixing (BSU) algorithm for water pollutant Identification due to sewage and industry disposals for south Karnataka Coast, Mangalore region, Funding scheme: AVIRIS, SAC-ISRO
- Oceanic Pollution and other ocean phenomenon monitoring using feature extraction from multi-polarized SAR data
- Study and Development of Domain Adaptive Classification Algorithm for Advanced Earth Observation and Annotation System, Funding scheme: NISAR, ISRO
- Design and Development of a Scalable Framework for Geospatial/Geoscience Data Ingestion, Ad-hoc Queries and Analysis on Big Data Environment, Funding agency: ISRO