



MACHINE INTELLIGENCE AND DATA ANALYSIS RESEARCH CENTRE



HINDUSTAN

INSTITUTE OF TECHNOLOGY & SCIENCE
(DEEMED TO BE UNIVERSITY)

www.hindustanuniv.ac.in

INTRODUCTION

Machine Intelligence and Data Analysis Research Centre (MIDARC) was established with two international partners Stevens Institute of Technology, USA as Academic partner and Machine Intelligence Research (MIR) Labs, USA a global non-profit academic consortium and IBM as industry partner. The objective of establishing this centre is to provide an ideal platform for researchers to work as a community in collaboration with industry and other research institutions to carry out research and evolve solutions for business challenges and real time social problems to benefit the human community. The incubation of this centre MIDARC happens to fall in line with time when the current digital world is governed by Computational Intelligence, Big Data Analytics and Cognitive Computing.

Vision

The vision of the centre is to pursue research in the areas of Machine Intelligence and Data Analytics and to foster product development with social and financial value.

Mission

- Establish infrastructure in line with current cutting edge technologies.
- Develop IoT and MANET protocols by infusing Machine Intelligence.
- Develop products based on Data Analytics technology and tools.
- Provide a platform for Graduate and Post Graduate students for pursuing research in
- Artificial Intelligence (AI) and Data Analytics (DA)
- Vouch for Industry collaboration in the centre.

Areas of Research

- Machine Intelligence
- Big data Analytics
- Cloud analytics
- Cyber Physical Systems
- Natural Language Processing
- Knowledge Management
- Pattern Recognition
- Cognitive Computing
- IoT Analytics
- Deep Learning

Training

- Oracle
- Python Programming
- IoT
- Cloud Computing
- Data Science
- Machine Intelligence
- Deep Learning

Facilities available for research

- IBM NVidia Deep Learning Lab
- i7 Systems with 8GB RAM
- MATLAB campus wide license with Simulink and all applicable toolboxes
- Intel Xeon Servers
- Internet & Campus Wi-Fi
- D-Link switches, routers
- Microsoft Academic Alliance
- Oracle Academic Alliance
- Adobe Creative Suite 5
- IBM Rational Rose Enterprise Suites
- IBM Rational Rose Software Architecture
- Kali Linux with Cyber Security Tools, Wireshark, Encase Tool for disk forensics

Research Partners (National and International - exchange programmes with abroad)

ACADEMIC PARTNERS

- Stevens Institute of Technology, USA
- Western Sydney University, Australia
- Dongguk University, Korea
- Yildiz Technological University
- University of Warwick, WMG, U.K
- Multimedia University, Malaysia
- The University of Alabama, Huntsville, USA
- Wayne State University, USA

INDUSTRY PARTNERS

- Machine Intelligence Research Labs (MIR Labs), Washington, USA
- ORACLE
- D-LINK
- IBM
- Code chef
- Infosys-Campus Connect



PROJECTS SANCTIONED

Established AI GPU DEEP LEARNING lab worth 14.9 lacs sanctioned by AICTE under MODROB scheme for the year 2020-2021

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Consultancy Project - Development of a Webapp for Agriculture from Sustainable Global Peace Trust – 2 Lacs

RESEARCH PROJECTS

FACULTY(APPLIED)

An AI Assisted Tool for weld defects detection and classification in Digital Z- Radiography – 26 Lacs

Migration of Aircraft Communication and Reporting System (ACARS) data to AWS cloud to reduce Round trip Time – 45 Lacs

A Human Computer Interaction system for speech communication for Aphasia disorder using Machine Learning Technique – 15 Lacs

A Device for leather detection system using Image acquisition and Machine learning algorithms – 25 Lacs (CLRI)

ACTIVITIES CONDUCTED IN THE PAST 3 YEARS

- Faculty Enrichment Program on “Digital Transformation”, July 4th to 6th 2018
- Summer Program on “Artificial Intelligence with Deep learning & Machine learning” 25th to 29th June 2018.
- Workshop on “Machine Learning Using R” 21-03-2018
- Seminar on “Data Science in 21st Century” 21-07-2017
- “Big Data Analytics Training Programme” 14th March 2016 to 24th March 2016 (10 days)
- Sponsored by DST (Bigdata Initiative Division) Govt of India
- International Conference on Cognitive IoT with Big Data & Cloud 25th - 26th October, 2018

NOTABLE ACHIEVEMENTS

Strong Industry-Institute Partnerships

- IBM-ICE Collaborative programs with industry aligned courses for UG/PG
- Awarded by Infosys as Advanced Partner Institute (Since 2006)
- D-Link to offers Certification Courses on Networking
- Dell EMC offers Certificate courses on Machine Learning

Achievement of Faculty members and students in International project design contests

- Top Ranking NASA Tech Brief projects & TNSCST Funded Projects
- Texas Instruments – Received One lakh worth components
- Mr. Vishal Katri of 2011-15 batch & Mr.G.Gokulavasan of 2012-16 batch have participated international competitions held in U.S.A (URC) & Singapore resp.
- DST Sponsored 6 Lakhs INR - Short Term Training Programme (STTP) in Big Data Analytics
- Mr.Sambath, AP, CSE have received IBM Mastermind award, patent contribution award, best mentor award and Infosys faculty excellence awards

FUTURE PLANS

- The center is in the process of initiating research plans for implementing two funded project Proposals of societal benefits.
- The center plans to conduct Annual National Conferences, workshops and Faculty Development Programs (FDP) to disseminate knowledge on center's thrust areas. The center has plans to collaborate with ACM to develop technologically sound and innovative Ventures.
- Plans are also on anvil to establish collaborations with International Universities for building the right platform for joint research and organizing International level Seminars with Renowned key note speakers.
- The centre plans to initiate joint research and consultancy services in developing indigenous solutions research problems.
- The centre vouches to establish the scholar's research prudence by exploring inter- disciplinary research in thrust areas like Cloud Computing, Big Data Analytics, Cognitive Computing and Machine Intelligence.
- The centre plans to conduct short term certificate and training programs in areas like Machine Intelligence, Cloud Computing, IoT, Deep Learning and Data Science

STUDENTS PROJECTS COMPLETED

- Development of a defect tracking system
- Accident Detection and Surveillance Through Smartphone
- Emotion Classification Using MLP
- Credit Card Fraud Detection Using Big Data
- An Ultimate Software Suite Creation and Implementation for High Speed Dynamic
- Fruit Sorter Machine
- Secure Payment Gateway Protocol
- A Passive Solution for CPU Utilization in Cloud Networks
- HITS Management System
- Voting System using Block Chain
- Toxic Sewage Gas Detector

