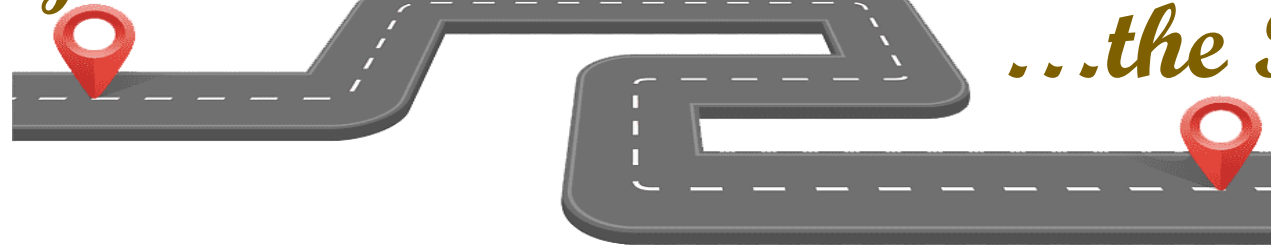# BIRLA INSTITUTE OF TECHNOLOGY
Mesra, Extn. Centre Lalpur (Ranchi City)
Ranchi, Jharkhand-834001
(A Deemed to be University, u/s 3 of UGC Act, 1956)

A Very Warm Welcome to all!

Dr. (Mrs.) Vandana Bhattacharjee
Director, Incharge

BITEC Lalpur, Ranchi
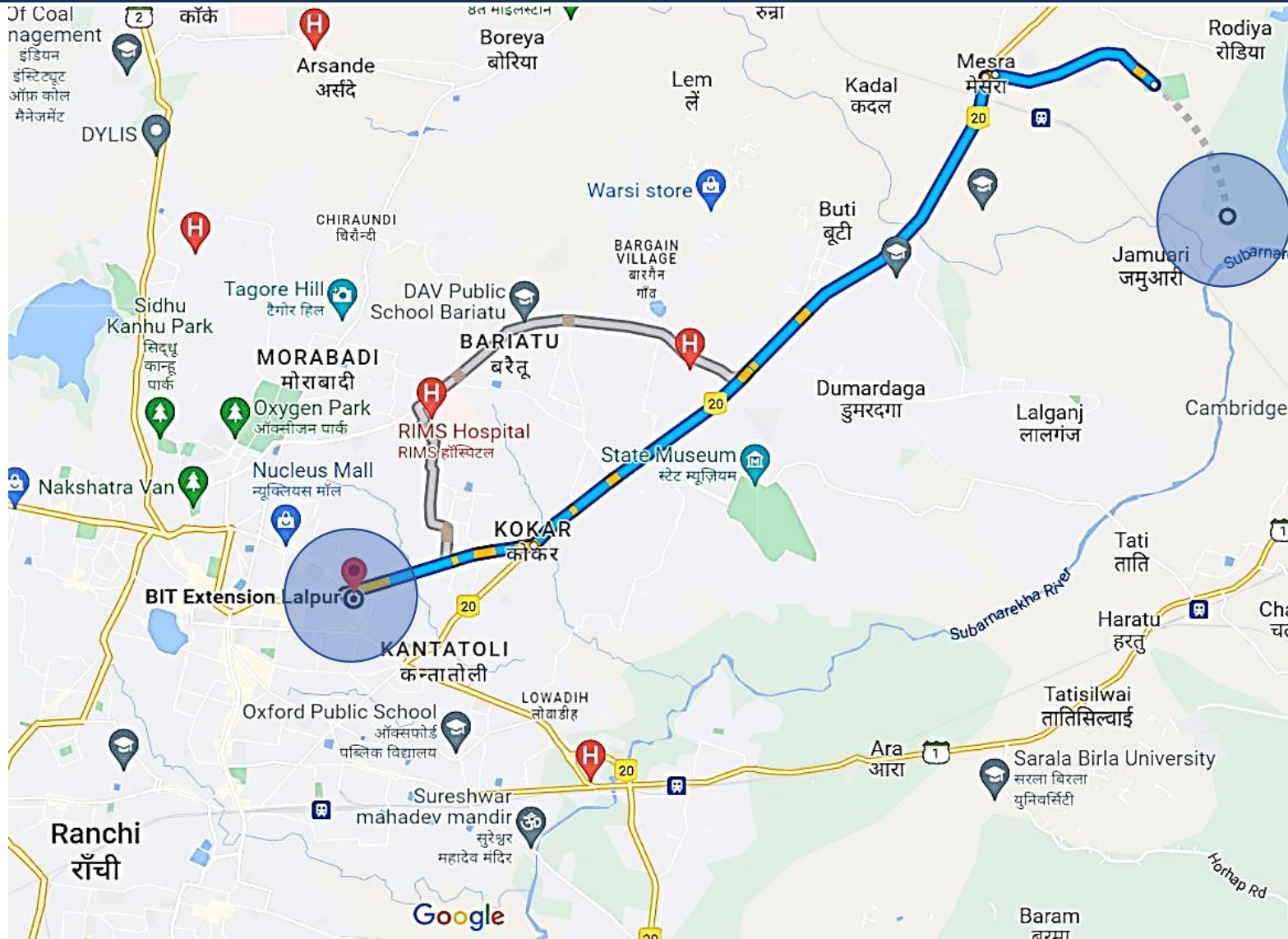
Our Legacy and ...

...the Road Ahead

Presented By:

Dr. (Mrs.) Vandana Bhattacharjee

Director, BIT Extension Centre Lalpur

Location of BITEC Lalpur, Ranchi

Heart of the city

12.5 km from BIT Mesra Main Centre

9.5 km from Birsa Munda Airport

6.5 km from Ranchi ITI Bus Stand

4 km from Ranchi Railway Junction

4 km from Ranchi Govt Bus Stand

2 km from Khadgarha Bus Stand

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand
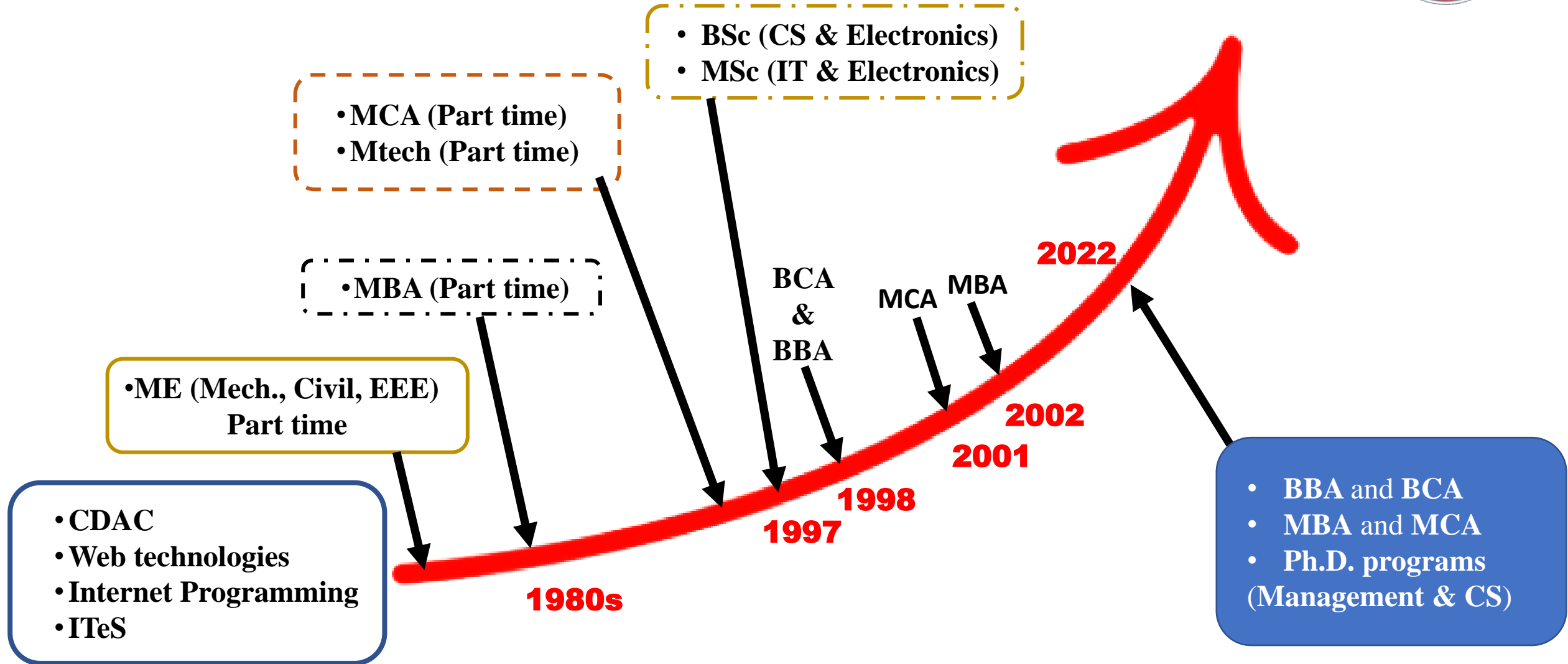
3

Mission & Vision of the Centre

Vision

Strive relentlessly to develop and maintain its recognition as a frontrunner in contemporary IT and management education in the country and contribute strongly towards nation-building through excellence in education, research and development activities.
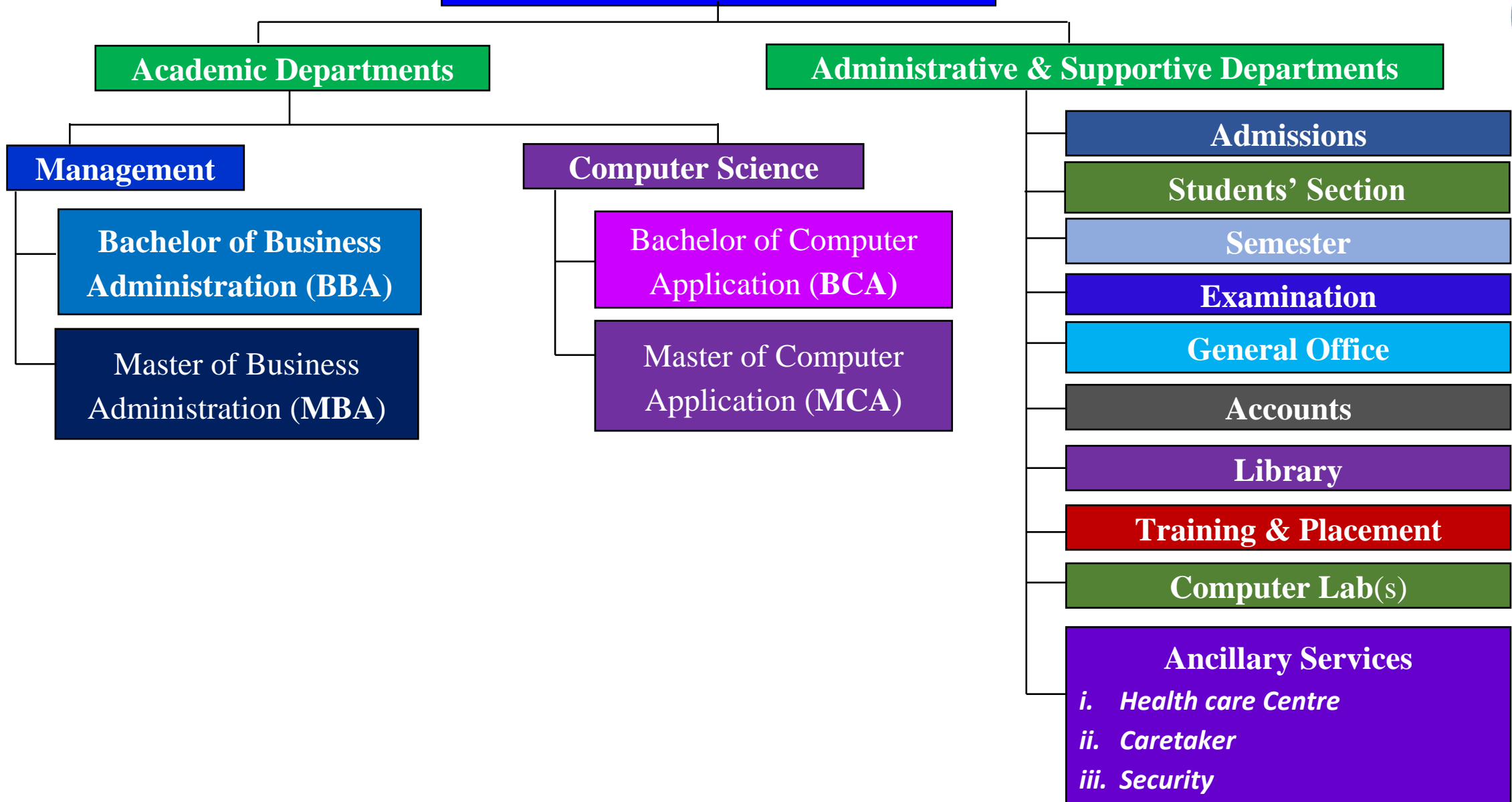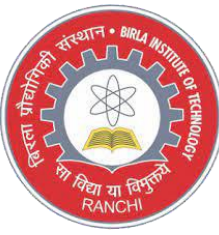
Mission

To impart quality education tuned to the present times and empowering students with a strong foundation ensuring their development as complete professionals who can handle challenges of the modern era with full confidence.

To provide excellent research and development facilities for faculty and students to undertake contemporary theoretical and applied research with mutually beneficial collaborations with leading universities, industries and research bodies across the globe to continually improve the quality of education and research.

4

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

Inception of BITEC Lalpur, Ranchi

- BSc (CS & Electronics)
- MSc (IT & Electronics)

- MCA (Part time)
- Mtech (Part time)

- MBA (Part time)

- ME (Mech., Civil, EEE) Part time

- CDAC
- Web technologies
- Internet Programming
- ITeS

BCA & BBA

MCA   MBA

2022

2002

2001

1998

1997

1980s

- BBA and BCA
- MBA and MCA
- Ph.D. programs (Management & CS)

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

5

B.I.T. LALPUR Centre

Academic Departments

Management

- **Bachelor of Business Administration (BBA)**
- Master of Business Administration (**MBA**)

Computer Science

- Bachelor of Computer Application (**BCA**)
- Master of Computer Application (**MCA**)

Administrative & Supportive Departments

- **Admissions**
- **Students' Section**
- **Semester**
- **Examination**
- **General Office**
- **Accounts**
- **Library**
- **Training & Placement**
- **Computer Lab**(s)
- **Ancillary Services**
  - i. Health care Centre
  - ii. Caretaker
  - iii. Security

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

Brief Overview

Faculty Strength

Department		No. of Faculty	Average teaching Load of each Faculty
Computer Science & Engg.	:	26	15 Lectures/week
Management	:	21	

Officers	Accountant	02
	Sr. System Analyst	
Other Staff		45

On roll Student Strength

1350 Approx

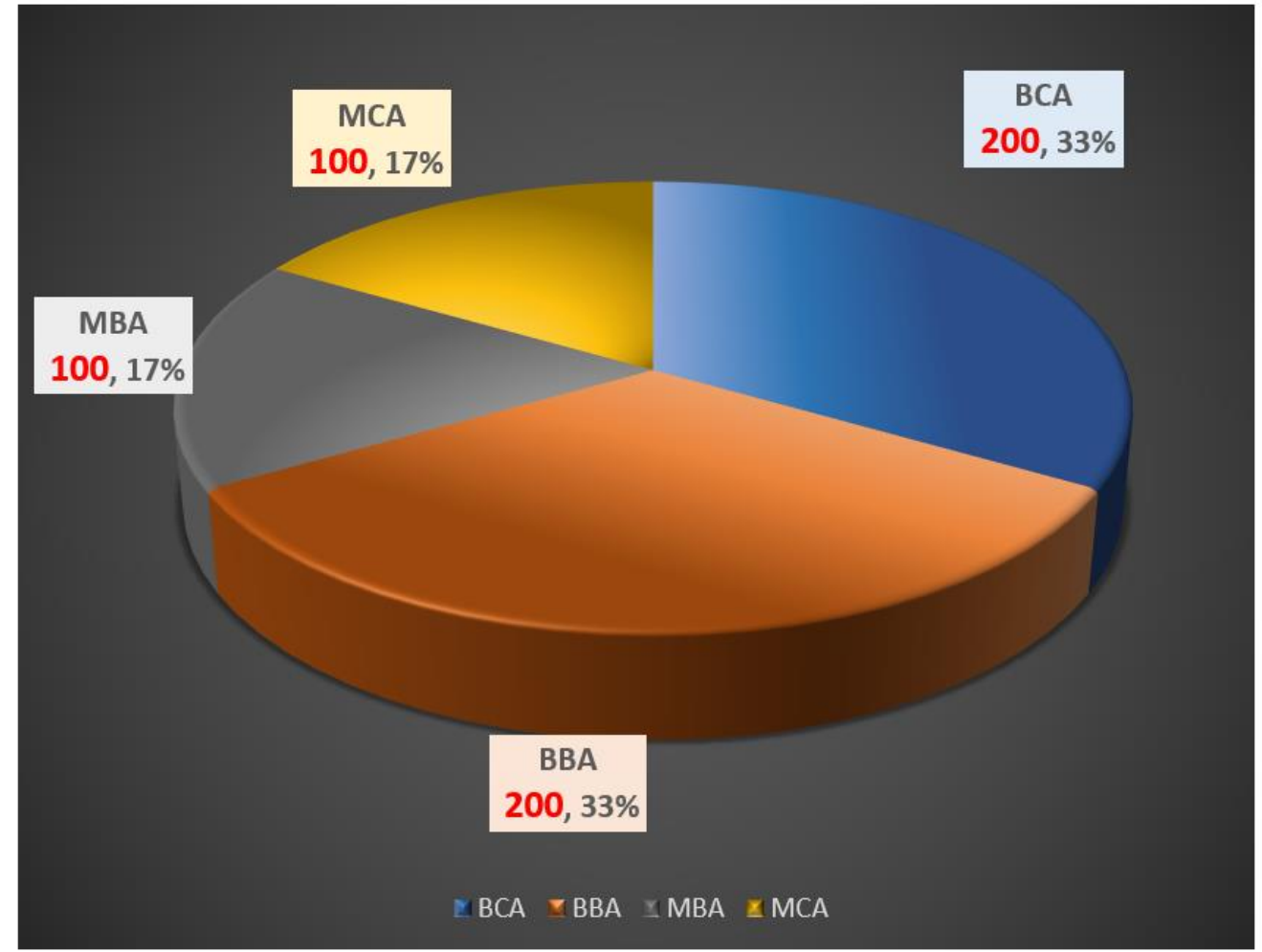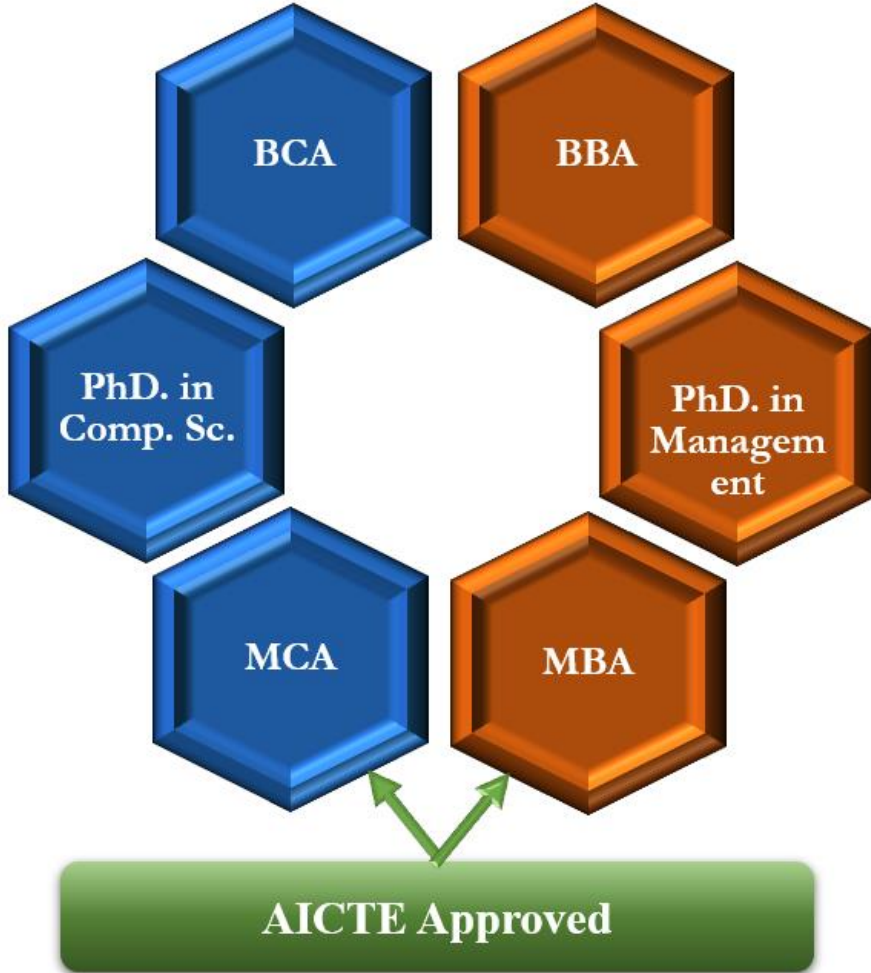| Publication in last 4 years	:	124
MOU	:	03
Patents	:	02
Projects Applied	:	11

Supportive Departments

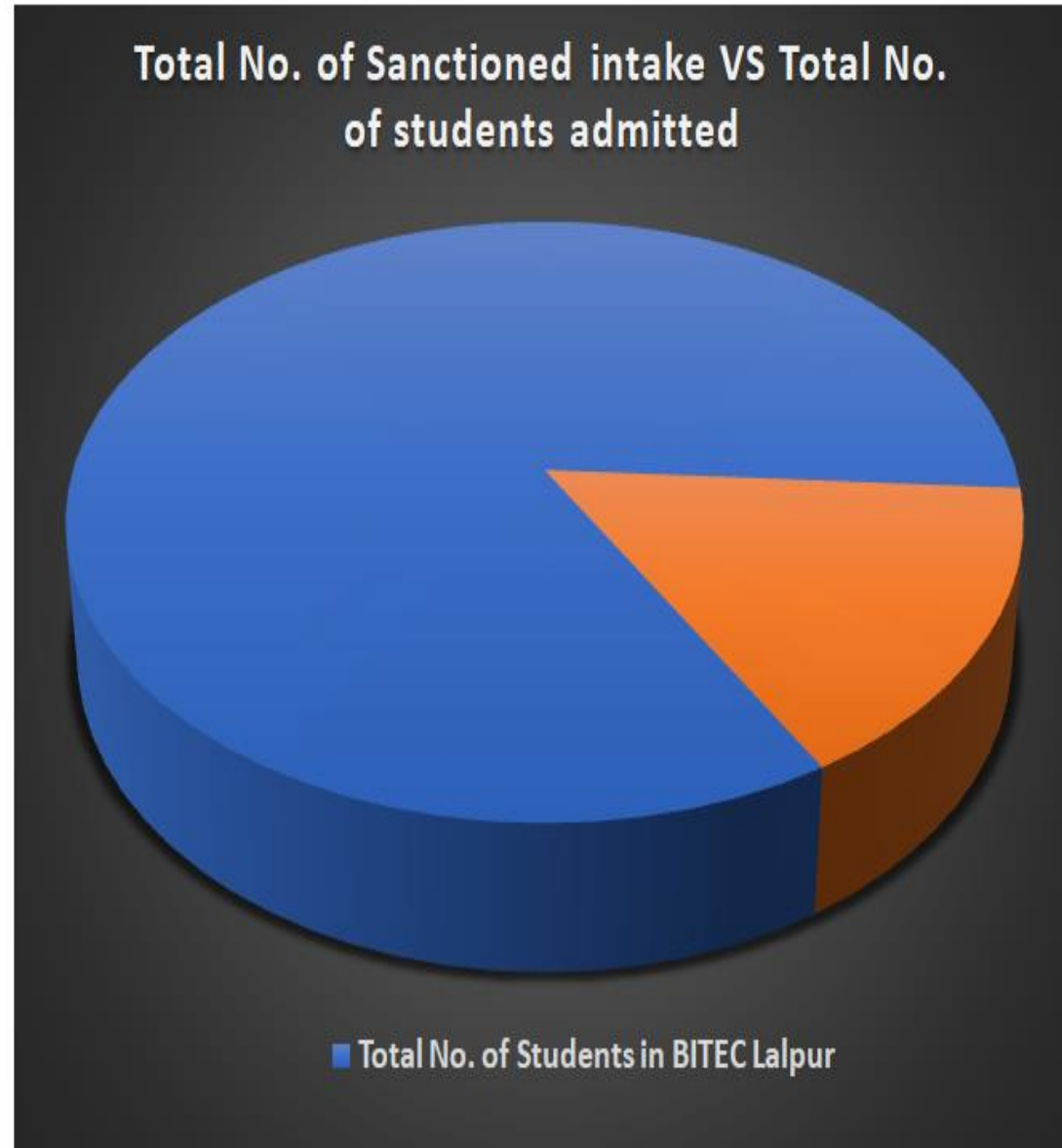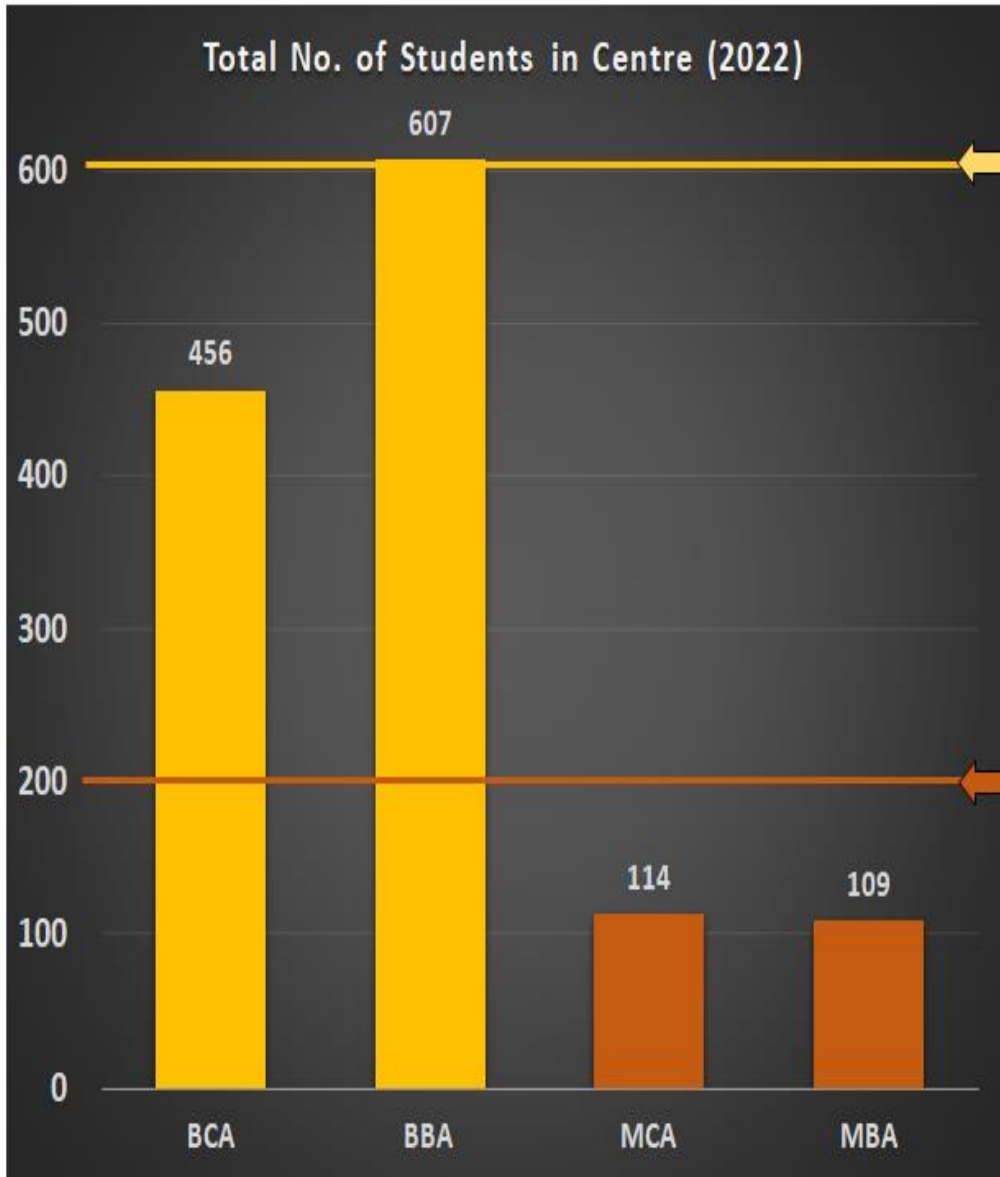| Particulars	Department(s)	No. of Staff
Supportive departments are looked after by Office Assistant(s) under the supervision of respective Faculty I/Cs	Students' Section	01
	Admissions	01
	General Office	
	Examination	01
	Semester	01
	Accounts	02
	Library	04
	Training & Placement	01
	Computer Lab(s)	05
	Ancillary Services i. Health care Centre ii. Caretaker iii. Security	01 02 05

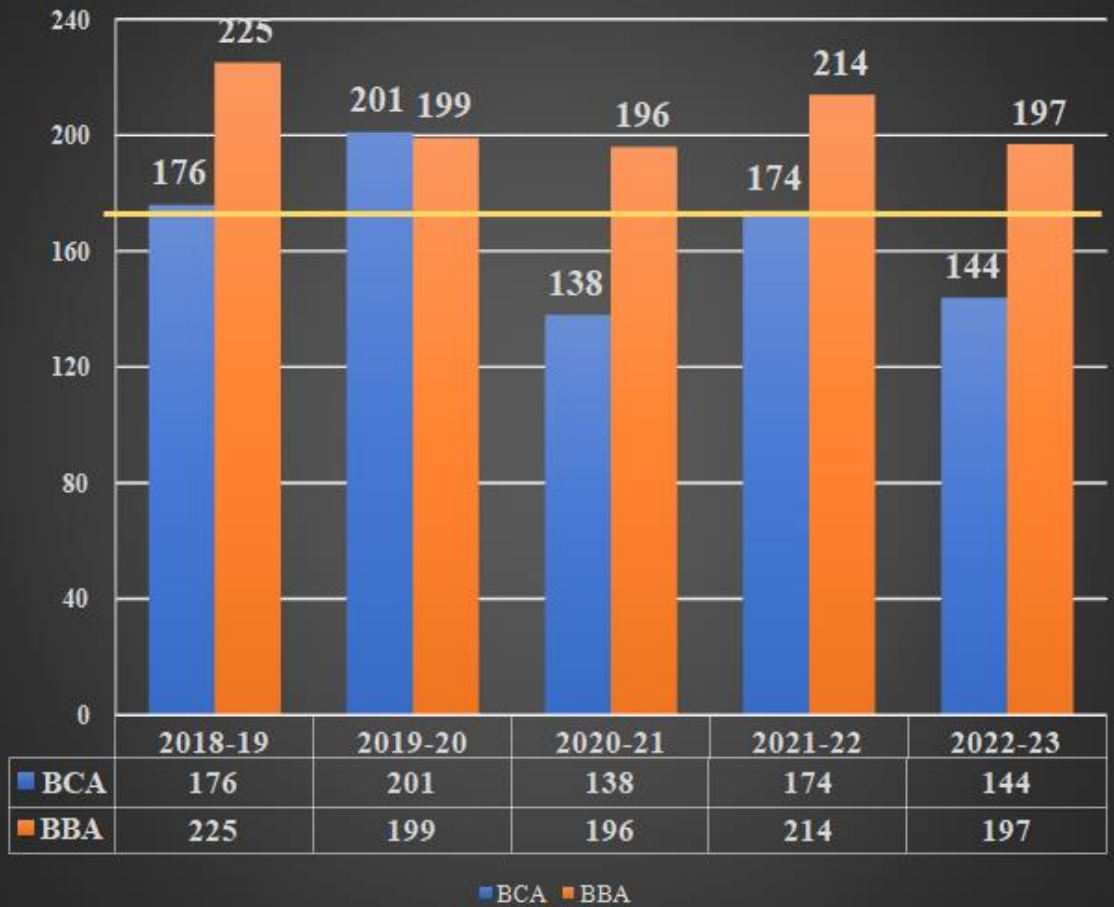# Strengths of our Centre – A snapshot
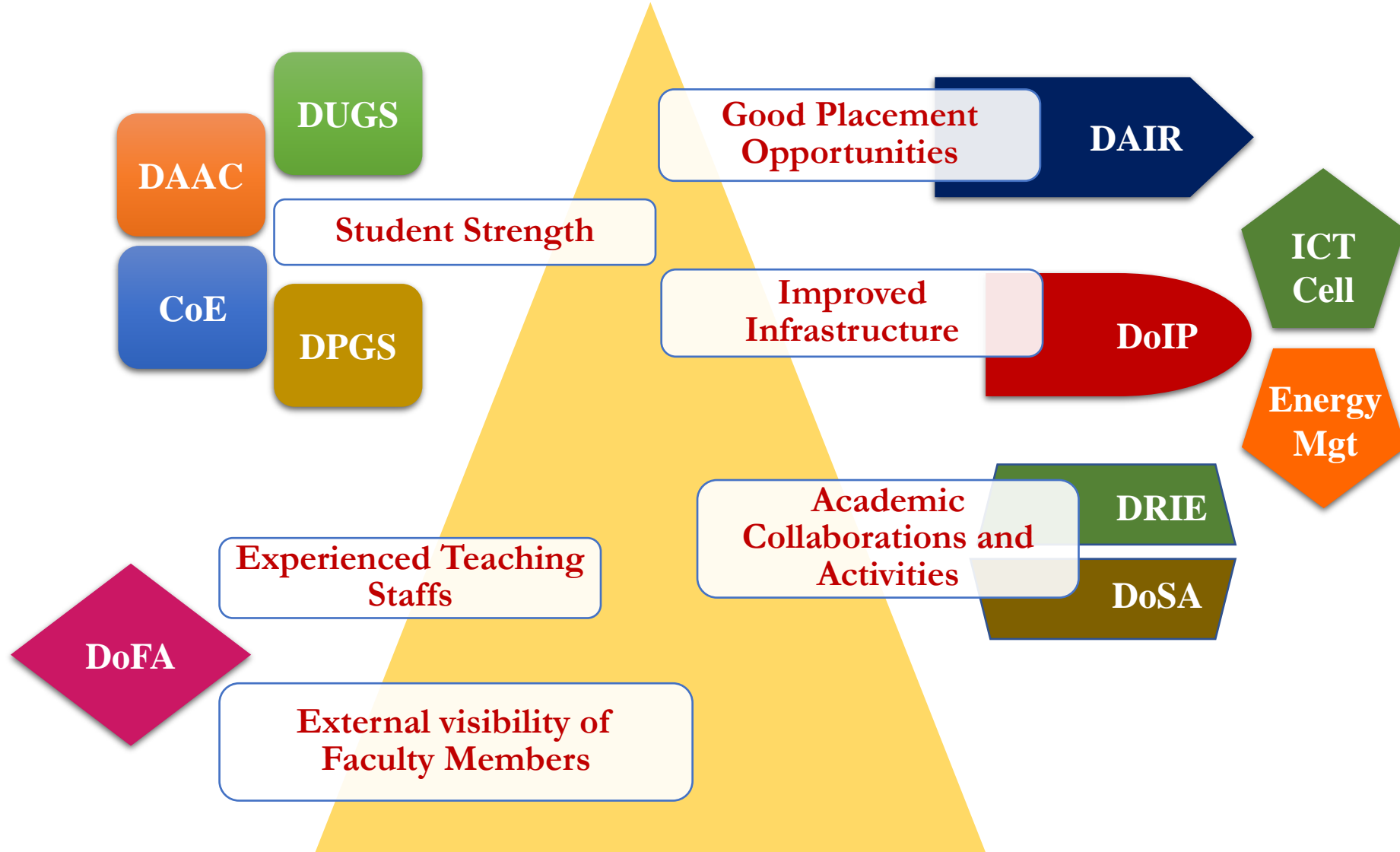
Programs Offered and Sanctioned Intake

Programs Offered and Sanctioned Intake

Total No. of Students in Centre (2022)
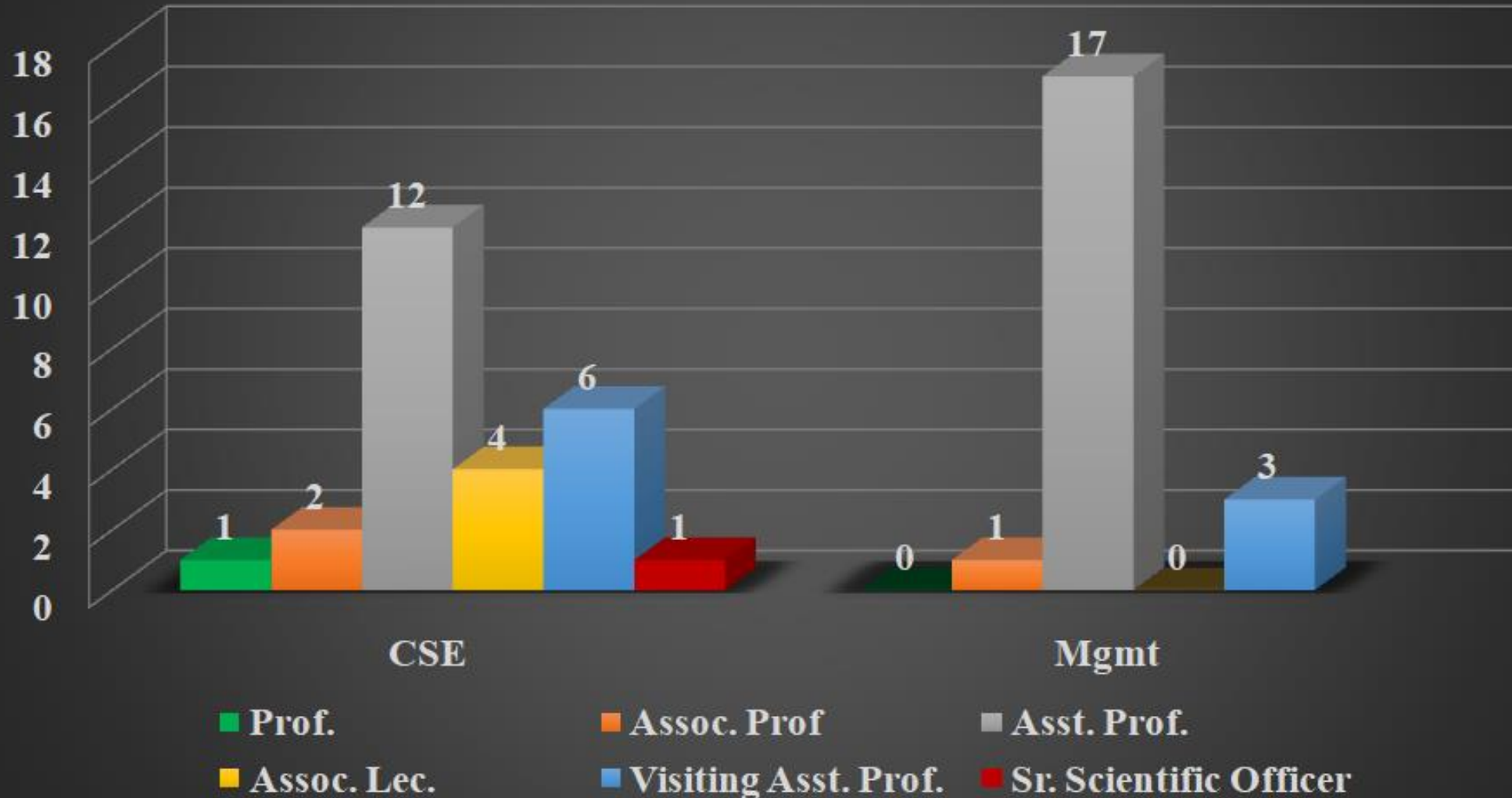
- BCA: 456
- BBA: 607
- MCA: 114
- MBA: 109

Total No. of Sanctioned intake VS Total No. of students admitted

■ Total No. of Students in BITEC Lalpur

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

10

Programs Vs # Student

Students Admitted in UG

	2018-19	2019-20	2020-21	2021-22	2022-23
■ BCA	176	201	138	174	144
■ BBA	225	199	196	214	197

Students Admitted in PG

	2018-19	2019-20	2020-21	2021-22	2022-23
■ MCA	41	31	63	55	59
■ MBA	91	76	79	53	56

Total students graduating in 2022: 583 (BCA+MCA+BBA+MBA+PhD)

Faculty Details

Faculty Cadre wise

CSE	MGMT
26	21

Legend:
- Prof.
- Assoc. Prof
- Asst. Prof.
- Assoc. Lec.
- Visiting Asst. Prof.
- Sr. Scientific Officer

CSE values: Prof. 1, Assoc. Prof 2, Asst. Prof. 12, Assoc. Lec. 4, Visiting Asst. Prof. 6, Sr. Scientific Officer 1

Mgmt values: Prof. 0, Assoc. Prof 1, Asst. Prof. 17, Assoc. Lec. 0, Visiting Asst. Prof. 3

Faculty Members of CSE

Dr. Vandana Bhattacharjee
Professor and Director

Dr. Srabani Mukhopadhyaya
Associate Professor

Dr. Amrita Priyam
Associate Professor

Dr. Partha Sarathi Bishnu
Assistant Professor

Dr. Binod Kr. Sharma
Assistant Professor

Dr. Sanjay Kumar
Assistant Professor

Dr. Siba Mitra
Assistant Professor

Dr. Kuntal Mukherjee
Assistant Professor

Dr . Siva Surya Narayana
Assistant Professor

Dr. Jaya Pal
Assistant Professor

Faculty Members of CSE (Contd..)

Dr. Umesh Prasad
Assistant Professor

Mr. Amar Kumar
Assistant Professor

Dr. N K Singh
Assistant Professor

Mrs. Onima Tigga
Assistant Professor

Dr. Nagendra Prasad Tiwary
Assistant Professor

Mr. Deepak Kr. Mishra
Associate Lecturer

Dr. Aparna Shukla
Associate Lecturer

Mr. Khalid Ashraf
Associate Lecturer

Mr. Hareshwar Prasad
Associate Lecturer

Mrs. Vijaya Lakshmi
Sr. Scientific Officer

Faculty Members of Management Department

Dr. Pranab Kumar
Associate Professor

Dr. Arun Kr. Singh
Assistant Professor

Dr. Abhaya Ranjan Srivastava
Assistant Professor

Dr. Somnath Mukherjee
Assistant Professor

Dr. Sandeep Nath Sahdeo
Assistant Professor

Dr. Tanmoy Kr. Banerjee
Assistant Professor

Dr. Mili Dutta
Assistant Professor

Ms. Anupma Sahai
Assistant Professor

Dr. Anish Haider
Assistant Professor

Dr. Pradeep Munda
Assistant Professor

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

15

Faculty Members of Management Department (Contd..)

Dr. J. Bhagat
Assistant Professor

Mr. Amitabh Chandan
Assistant Professor

Dr Soumitro Chakravarty
Assistant Professor

Dr. Avinash Kr. Sinha
Assistant Professor

Dr. Satrajeet Choudhury
Assistant Professor

Dr. Ashutosh Mishra
Assistant Professor

Dr. Balendra Nath Sayan
Assistant Professor

Dr. Prashant Kumar Singh
Assistant Professor

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

16

Visiting Assistant Professors

Ms. Mamata Pandey

Mr. Dhananjay Kumar

Mr. Shubhojeet Paul

Ms. Sushma Verma

Ms. Kimmi Kumari

Dr. Mahua Banerjee

Dr. Swati Minz

Dr. Niti Shekhar

Dr. Gaurav Abhishek Tigga

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

17

Technical Staff Members

Mr. Subhasis Roy
Sr. System Analyst
(Computer Lab)

Mr. Manoj Kumar
Network Assistant
(Computer Lab)

Mr. Somenath Chatterjee
Teaching Assistant
(Computer Lab)

Mr. Santanu Sinha
Lab Assistant
(Computer Lab)

Mr. Ravi Bhushan Pandey
Jr. Office Assistant
(Computer Lab)

Office Staff Members

General Office and Admissions

Mr. Basudeo Singh
Assistant

Energy

Mr. Sunil Oraon
Assistant

Accounts

Mr. Shantanu Kumar
Accountant

Mr. Ashutosh Kumar
Assistant

Maintenance & Construction

Mr. Dineshwar Mahto
Sr. Tech. Suprintendent

Mr. Birbal Mahto
Supervisor

Semester

Mrs. Mini Dubey
Jr. Suprintendent

Examination

Mrs. Alice Preety Toppo
Lab Assistant

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

19

Office Staff Members

Student Section

Mr. Rana Pratap Mishra
Lab Assistant

Training & Placement

Mrs. Anamika Kumari
Assistant

Library

Mr. Ajay Kr. Singh
Jr. Suprintendent

Mr. Binod Kumar
Assistant

Mrs. Soni Kumari
Jr. Suprintendent

Mrs. Sarita Tigga
Attendant

Health Care Section

Mrs. Gita Devi
Attendant

20

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

Office Staff Members

Office Staff Members

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand
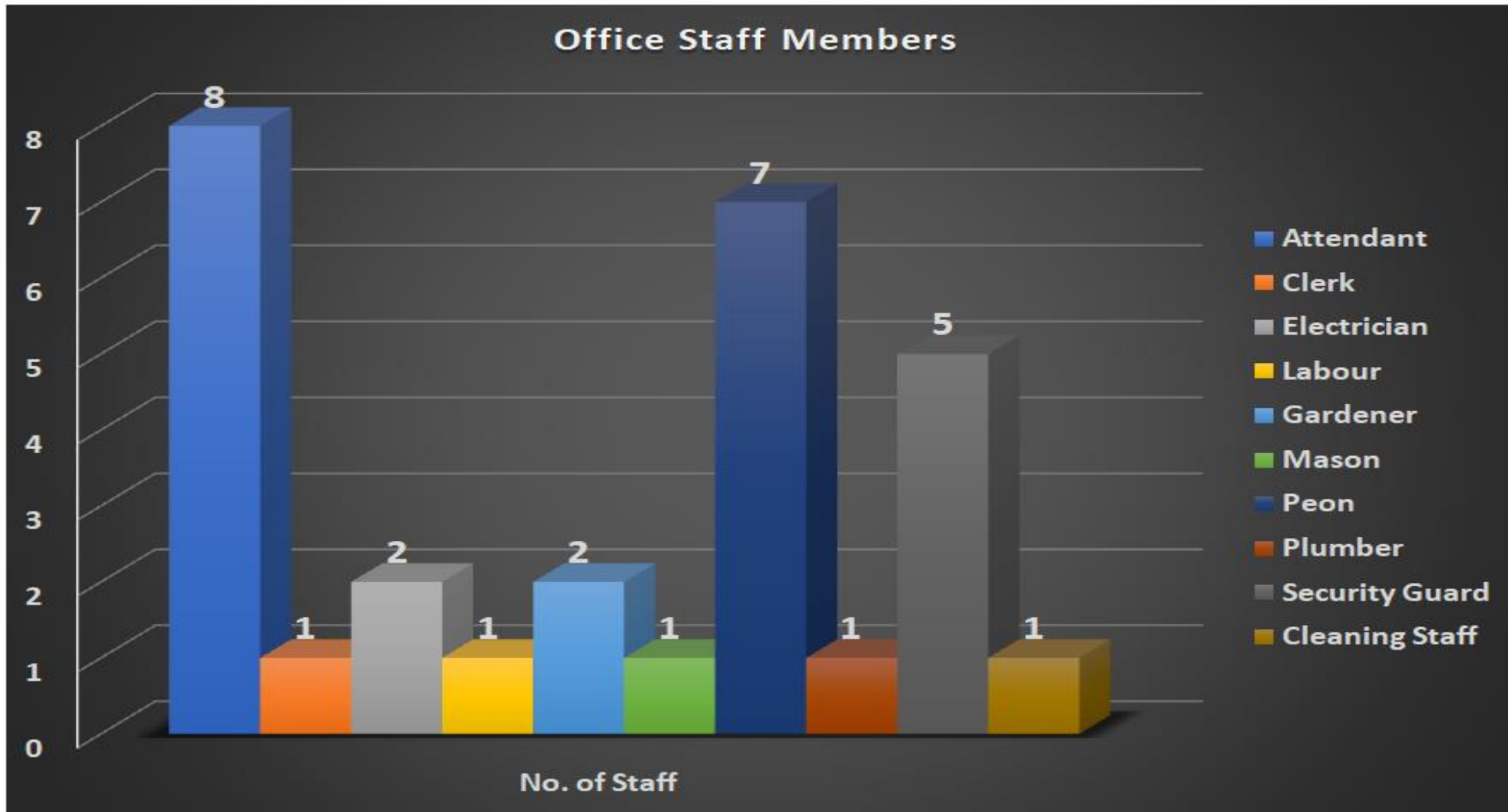
Physical Infrastructure (Area wise chart)
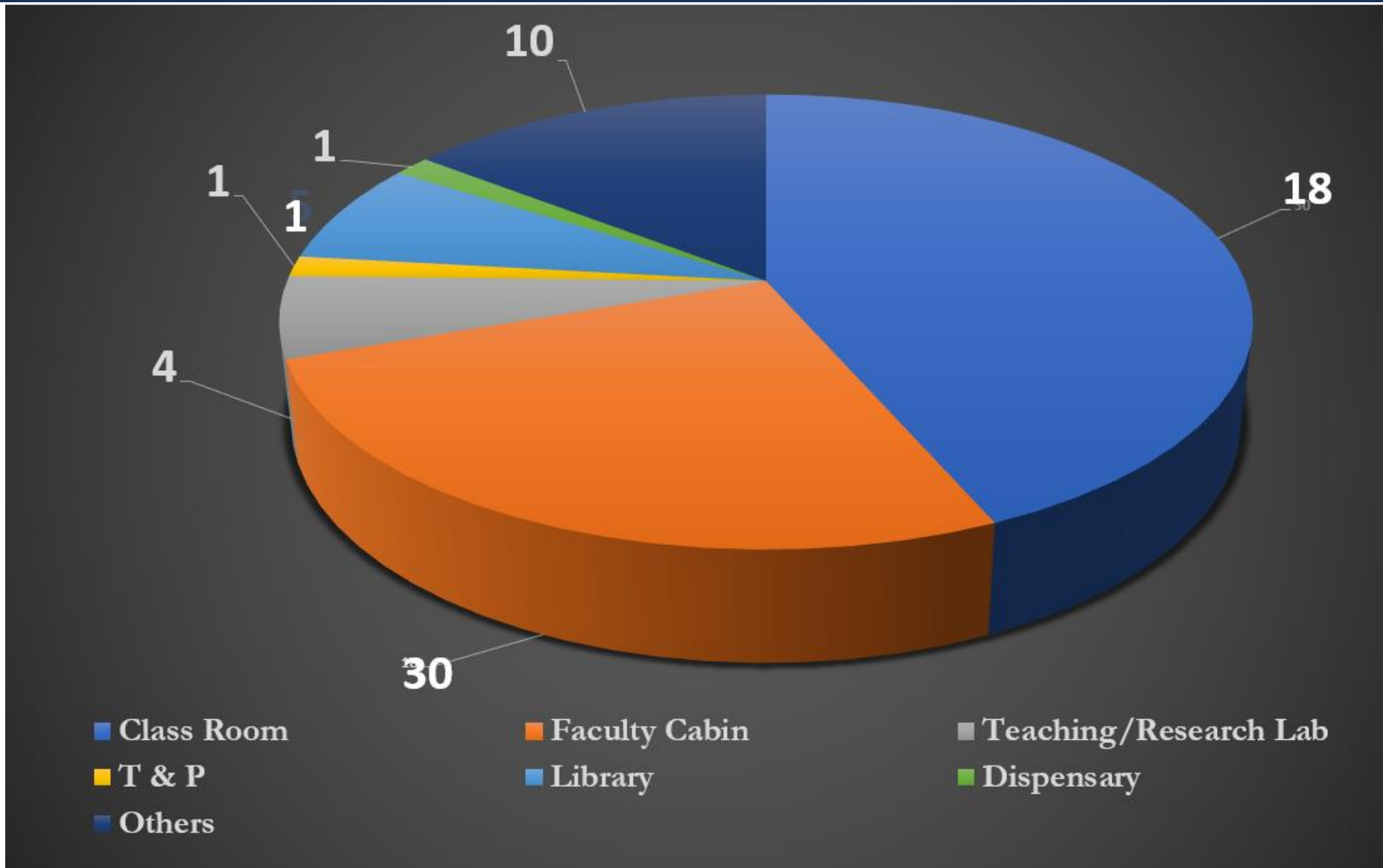
Laboratory Infrastructure at a glance…………..

Lab	No. of Computers	Area of Lab(Sq. m)	Configurations
I	55	92.5	Core i7 with inbuilt OS
II	50	89.0	
III	55	92.5	
IV	50	Under construction	
V	60		
VI	50		

Used for teaching, research and for conducting placement exams & National/ State level exams like CAT, GATE etc.

Some Snapshots of Infrastructure
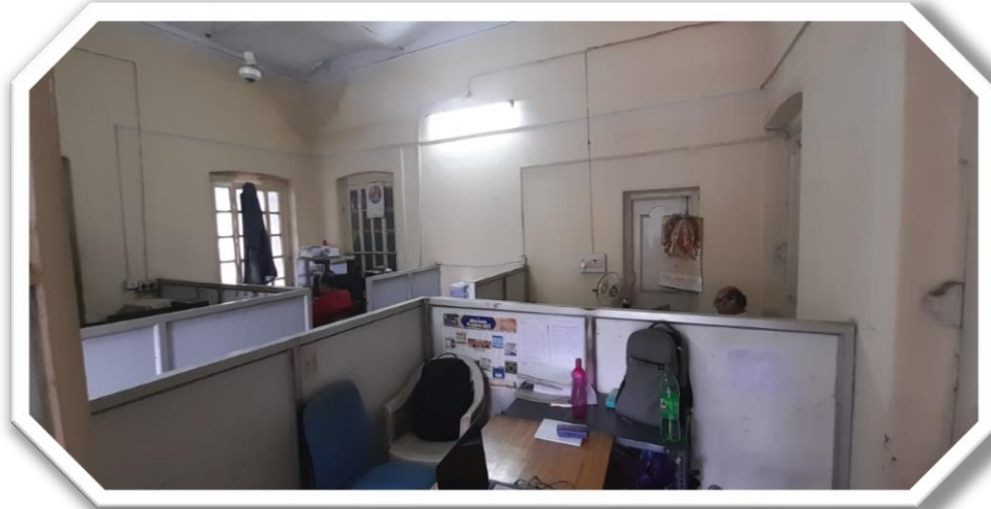
Some Snapshots of Infrastructures

Renovations

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

Our Faculty as Academic Administrative Post Holders…………..

Our Faculty as Post Holders…

Name of the Faculty	Responsibilities
Dr. Srabani Mukhopadhyaya	• **Coordinator**, Semester and ERP Registration • **Member**, Academic Committee
Dr. Amrita Priyam	• **Academic Coordinator** (CSE) • **Coordinator** – Admission Section
Dr. Pranab Kumar	• **Academic Coordinator** (Management) • **Faculty Incharge - AICTE & AISHE**
Dr. A. K. Singh	• **Coordinator** – Infrastructure Committee
Dr. Abhaya Ranjan Srivastava	• **In-charge NSS & Program Officer (NSS)**, BIT Lalpur • **Coordinator** – Centre Committee for Media Communication
Dr. S.N. Sahdeo	• **Faculty Incharge** – Sports • **Coordinator** – Campus Administration Committee • **Programme Officer** – NSS
Dr. Ashutosh Mishra	• **Faculty Coordinator** – Students' Activities
Dr. Sanjay Kumar	• **Coordinator** – Admission Section • **Convenor** – Purchase Committee

Our Faculty as Post Holders…

Name of the Faculty	Responsibilities
Mrs. Onima Tigga	• Assisting Semester Office
Dr. Pradeep Munda	• **Coordinator** – Students' Section
Dr. Shiva Surya Narayana	• **Faculty Incharge** – Examination Section
Dr. Jaya Pal	• **Faculty Incharge** – Examination Section • **Coordinator** – ERP
Dr. Kuntal Mukherjee	• **Coordinator** – ERP
Dr. Soumitro Chakravarty	• **Coordinator** – Ph.D
Dr. Umesh Prasad	• **Coordinator** – Ph.D
Dr. Mili Dutta	• Assisting AICTE related work at centre • **Convener** of Center Policy Committee
Ms. Anupma Sahai	• **Academic Coordinator** (Management Department) from July 2007 – January 2022. • **NSS Programme Officer** –from April 2018 – March 2021
Dr. T. K. Banerjee	• **Coordinator** – Training and Placement
Dr. Siba Mitra	• **Coordinator** at Training & Placements (CSE)
Dr. Aparna Shukla	• **IT Maintenance Convenor** • Worked as **BITASS Coordinator** at BIT Allahabad

Research @ BITEC Lalpur…….

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

30

Major Research Areas in Computer Science Engg.

Major Research Areas

- Parallel & Distributed Computing
- AI & Machine Learning
- Data Science
- Computer Vision & Image Processing
- Security & Cryptography
- IOT & Cloud Computing
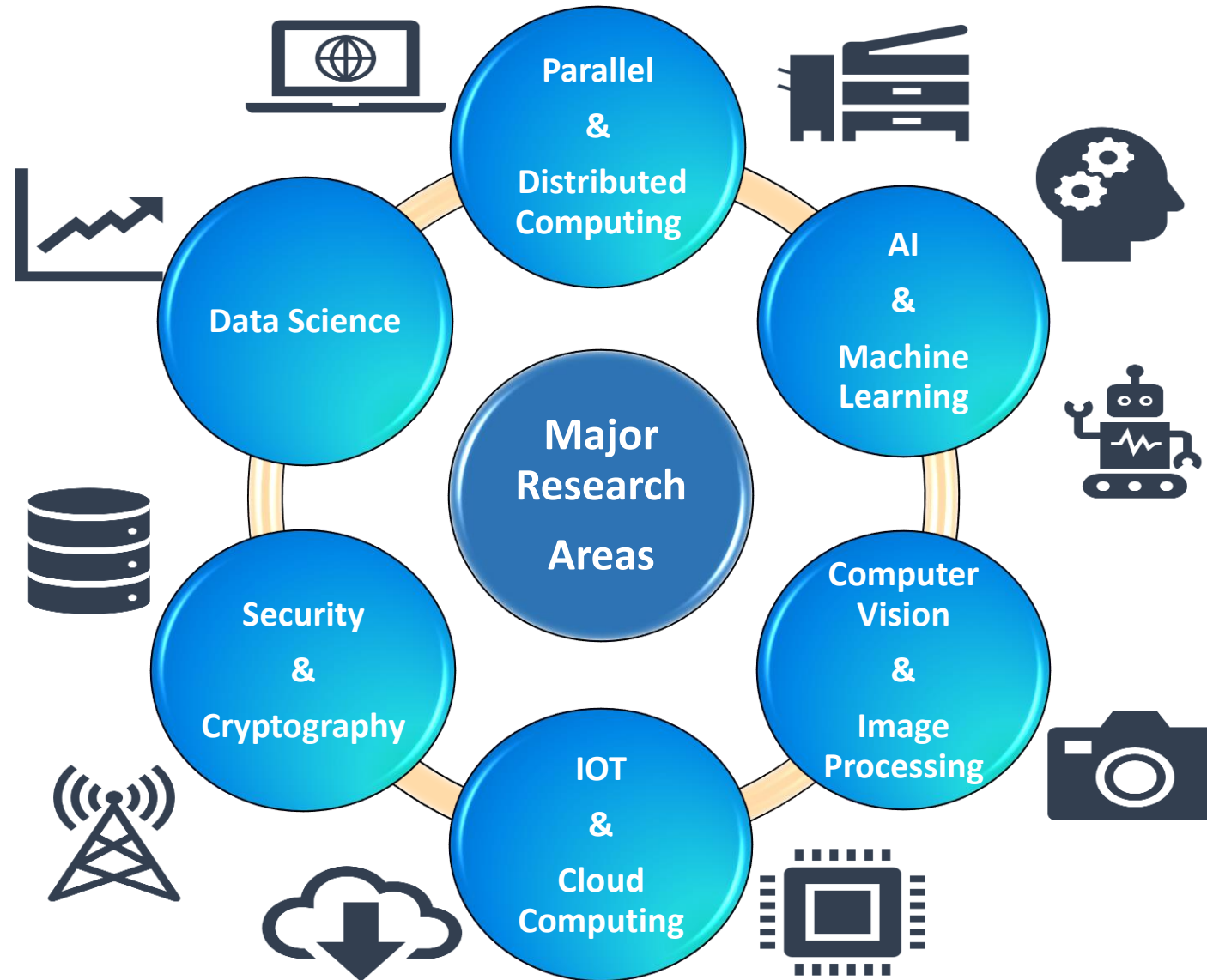
Major Research Areas in Management

Major Research Areas

- Social Media Marketing
- IT/IS
- Social Inclusion
- Finance and Micro-finance
- Operations Research and Management
- Industrial Psychology
- HRM & OB

Research Scholars Registered/Awarded

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand
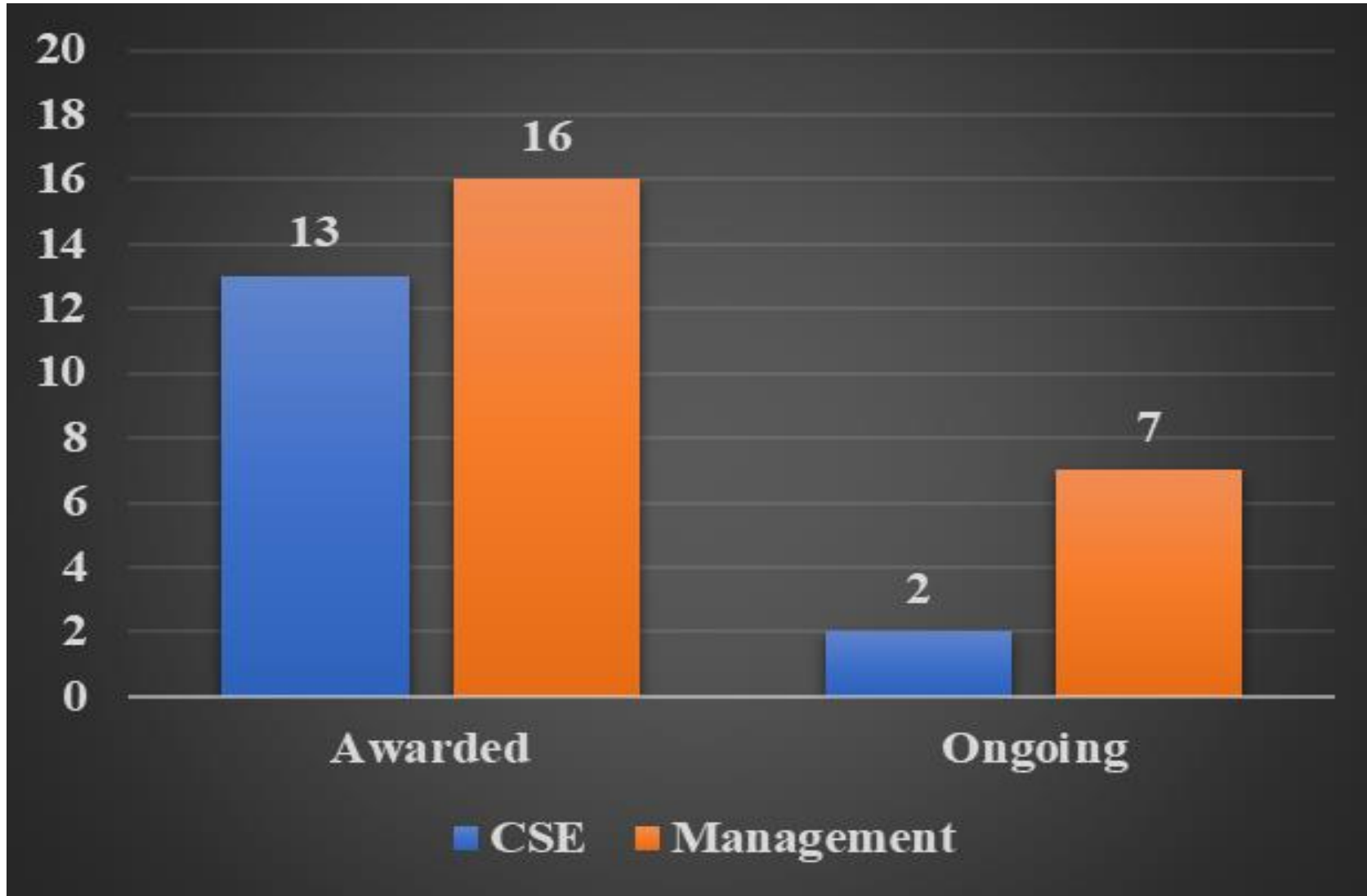
Faculty Publications

Total Publications in last 4 Years

- SCI/SSCI/SCIE: 21
- ESCI/ Scopus: 37
- Others: 28
- Books/Book Chapters: 38
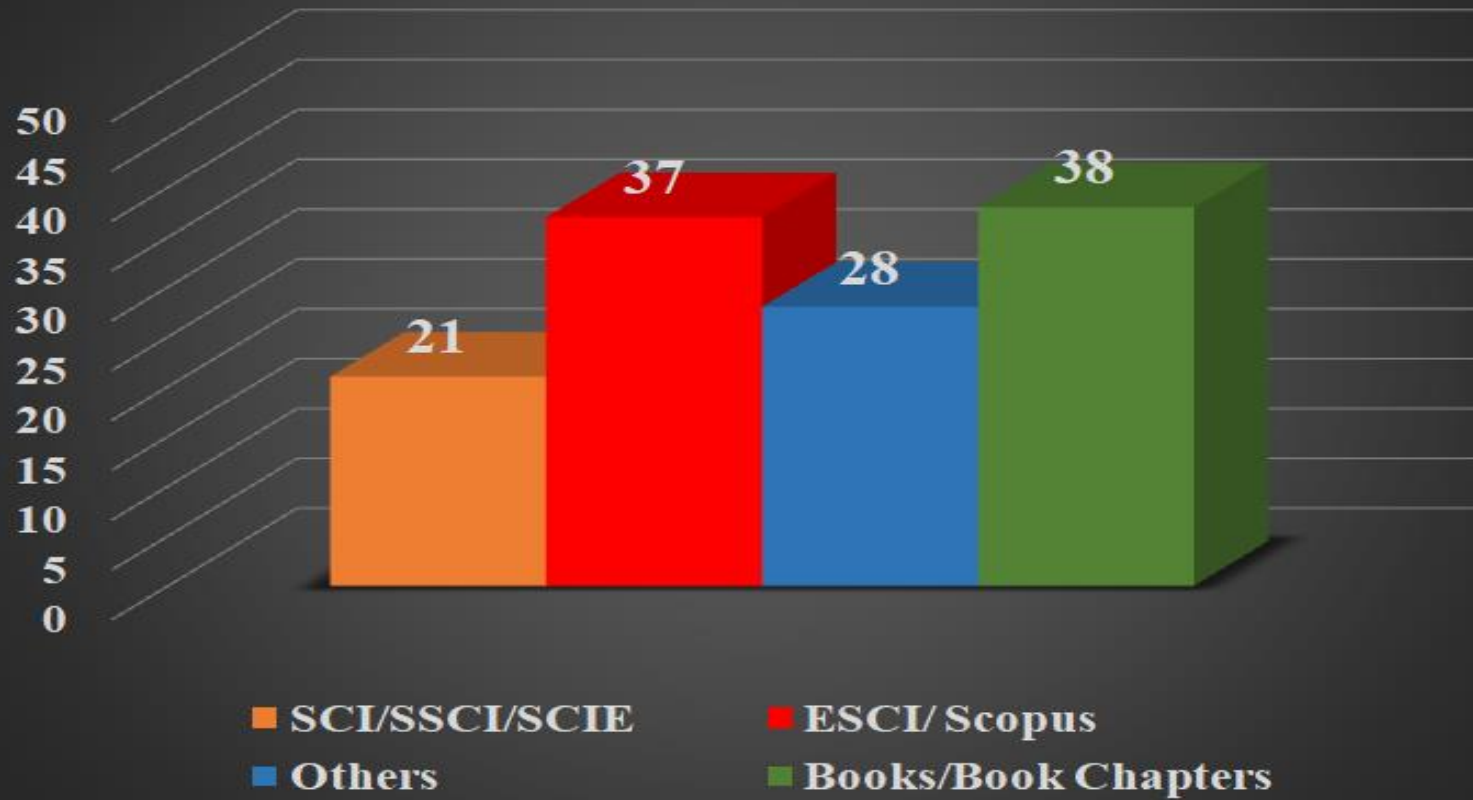
Total Publications
124

Academic / Research Activities during last Four years		
# FDP/ Training / STTP Attended	Workshops attended	Conference attended
33	67	9

Completed Sponsored Projects

Sl. No.	Name	Title	Funding Agency	Amount (in Lacs)	Duration (in Months)
1	Dr. Vandana Bhattacharjee (PI) and Dr. Kumar Rajnish	Development of Metric Suite for Object-Oriented Design	University Grants Commission	3.06	36
2	Dr. Vandana Bhattacharjee (CO-PI)	Automated vegetation stress detection from very high-resolution multi-temporal spectral data and to establish relationship using Artificial Intelligence	Skymap Global, Earth observati on Analytics	7.5	12
3	Dr. Subrajeet Mohapatra and Dr. Vandana Bhattacharjee (CO-PI)	Development of Machine Learning Algorithm for the early diagnosis of Delinquent Behaviour in Juveniles	CSRI, DST	22.54	36
4	Dr. Abhaya Ranjan Srivastava (CO-PI)	"National Food for Work Program" for Katihar, Bihar for five years was prepared.	Department of Rural Development	8.75	18
5	Ms. Anupma Sahai (Project Director)	Exploring the Career Journey of 'High Flyer' Managerial and Professional Women: Tribal and Non Tribal Women in Jharkhand	ICSSR, (MHRD), New Delhi	5.42	36

Projects applied…

ICSSR

ISRO Respond

DST SERB

ATAL FDP

Ministry of Textiles (Handicrafts)

JWDS

Total Amount of Rs. 146 Lakhs (Approx)
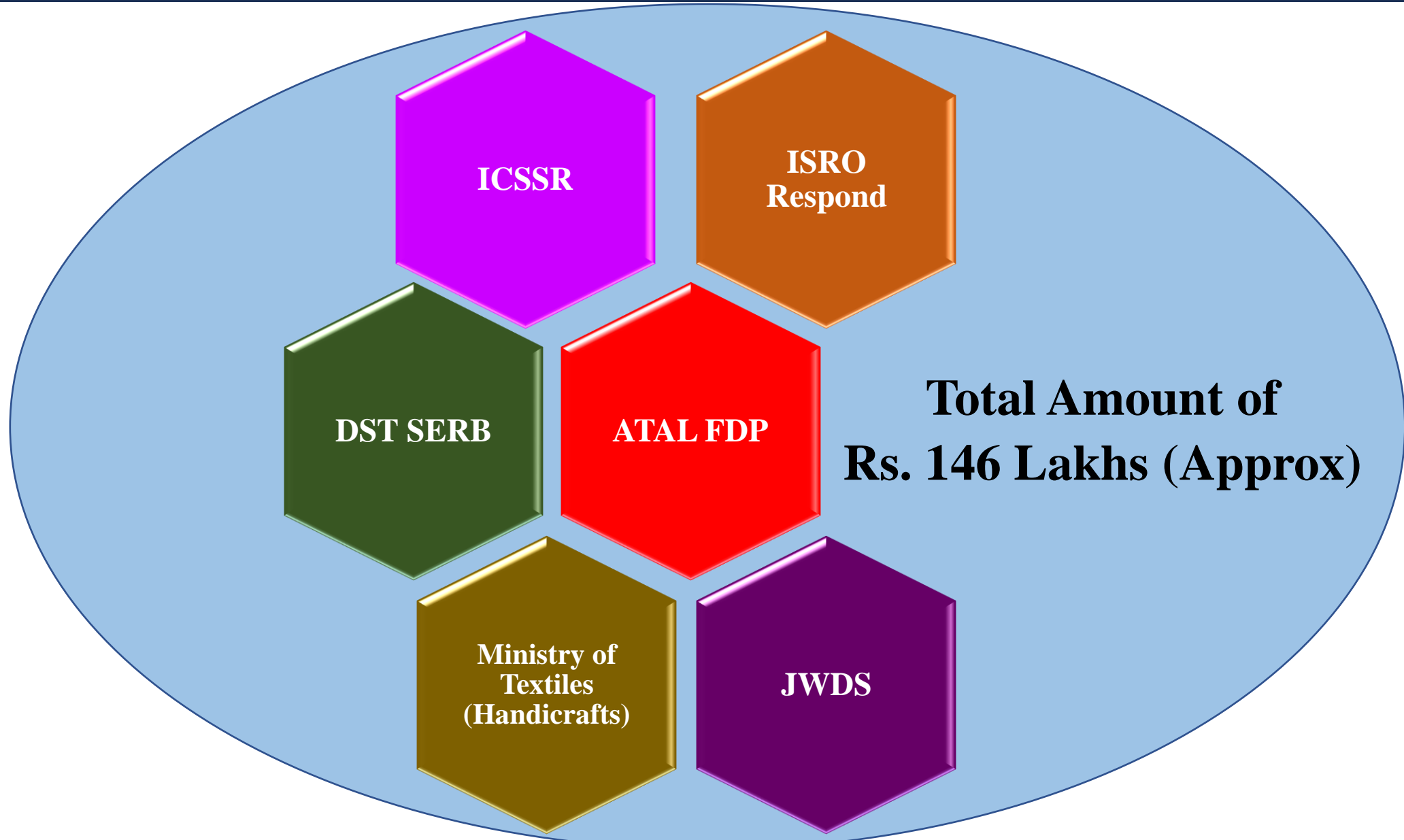
Activities, Interactions and Recognitions

Academic Activities …. conducted this year

Guest Lectures

Online Guest Lecture on the topic "**AI AND DEEP LEARNING**" by Mr. Shyam Sundar Kumar, Voiceshop (Co-founder) on **29ᵗʰ January 2022**

BCA Alumni of BITEC Lalpur, 2012 – 15 batch

AI LEARNING PATH

How to ace job interview

Online Guest Lecture conducted on 30ᵗʰ March 2022 on the topic "CIRCULAR FOOD SUPPLY CHAINS: A PRACTICAL APPROACH" by Dr Sachin Kr. Mangla (University of Plymouth, UK)

Online Guest Lecture on the topic " **PROTECTING THE CUSTOMERS FROM FRAUDSTERS IN THE INTERNET WORLD**" by Dr. Debasish Das (Senior Staff Engineer, Google India Pvt. Ltd) on **11ᵗʰ April 2022**

BIRLA INSTITUTE OF TECHNOLOGY, MESRA OFF CAMPUS LALPUR

GUEST LECTURE SERIES
Interaction with industry/Academic Experts
Dr. Debasish Das
Google India Pvt. Ltd.

Protecting the Customer from Fraudsters in the Internet World

April 11, 2022 (Monday) at 7:00 PM | MS TEAMS

Chairperson:
Prof. V. Bhattacharjee
Director(In-charge)
BITOC Lalpur, Ranchi

Coordinator:
Dr. S. Mukhopadhyaya
Associate Professor
BITOC Lalpur, Ranchi

Academic Activities …. conducted this year

Guest Lectures
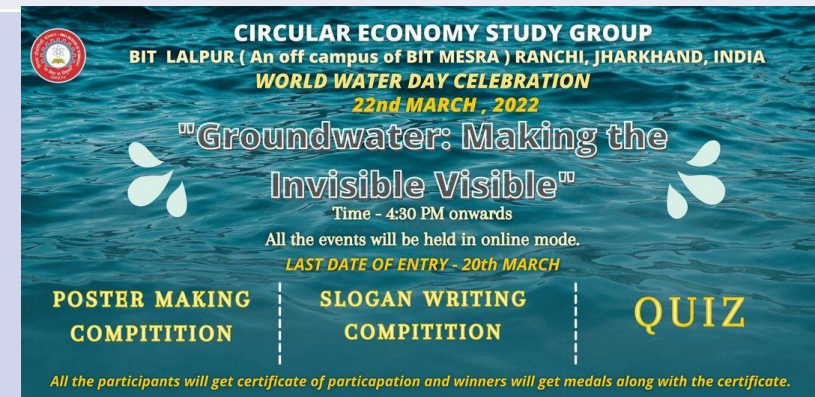
Online Workshop on **"Developing Leadership Skills Among Budding Entrepreneurs (DLSABE-2022)"** was held on 12 - 13th March 2022 at BIT Mesra, Off-Campus Lalpur, Ranchi

बीआइटी लालपुर में कार्यशाला आयोजित

रांची। बीआईटी प्रौद्योगिकी संस्थान लालपुर सेंटर में दो दिवसीय कार्यशाला की शनिवार को शुरुआत हुई। इस कार्यशाला में नये और पुराने उद्यमियों को और बलशाली और बेहतरीन रूप से तैयार करने पर जोर दिया गया। कार्यशाला संयोजिका अनुपमा सहाय ने प्रतिभागी अतिथियों को विषय की जानकारी दी। निदेशक

Online Guest Lecture conducted on 8th February 2022 on the topic "AN INSIGHT ON CIRCULAR ECONOMY" by Ms. Shalini Goyal Bhalla (MD, International Council for Circular Economy)

Online Guest Lecture on **"Ground water- Making the Invisible Visible"** on the occasion of **World Water Day Celebration** on 22nd March 2022

CIRCULAR ECONOMY STUDY GROUP
BIT LALPUR (An off campus of BIT MESRA) RANCHI, JHARKHAND, INDIA
WORLD WATER DAY CELEBRATION
22nd MARCH , 2022
"Groundwater: Making the Invisible Visible"
Time - 4:30 PM onwards
All the events will be held in online mode.
LAST DATE OF ENTRY - 20th MARCH
POSTER MAKING COMPITITION | SLOGAN WRITING COMPITITION | QUIZ
All the participants will get certificate of particapation and winners will get medals along with the certificate.

Academic Activities …. conducted this year

Name of Event Organized	Duration
Workshop on "Developing Leadership Skill among budding Entrepreneur" – Ms. Anupma Sahai and Dr. Mili Dutta	12-MAR-2022 and 13-MAR-2022
Five days online Workshop on "Research Methodology"- Dr. Satrajeet Chowdhury and Dr. S. A. Haider	23-MAY-2022 to 27-MAY- 2022
One Week Online National Workshop on 'Digital Marketing' - Dr. Abhaya Ranjan Srivastava	04-JUL-2022 to 08-JUL-2022

MoUs

Shriram Life Insurance Company Limited

The Jharkhand State Cooperative Milk Producer's Federation Ltd.

MoUs

Perennation Computer Solutions Global Private Limited, Kolkata
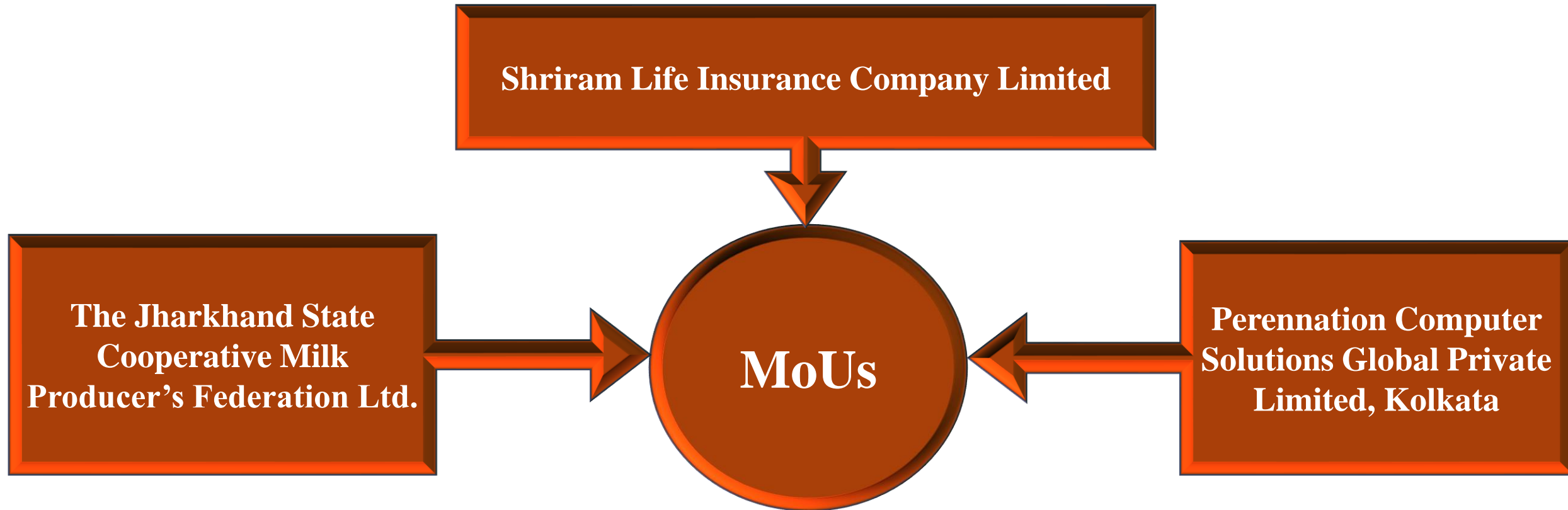
Note: Two MoUs are currently in process

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

42

Patents Published………..

IoT Enabled Tool for Online Education System in the Developing Trend of Smart Education
by
Dr. Umesh Prasad and
Dr. Soumitro Chakravarty

Internet of Things for Home Safety Applications
by
Dr. Soumitro Chakravarty and
Dr. Umesh Prasad

- A smart education server that is enabled by the Internet of Things is one of the components of the smart education system.
- Other components of the smart education system include a student terminal that is preloaded with a learning application, a service that provides a service for learning content such as video clips, images, a live broadcast, and learning materials

- The present invention involves a home device interface, a data transfer unit (DTU) equipment, a platform, a control node, and a network server composing an intelligent home program based on Internet of things technology.
- In comparison to prior art,, the smart household system has the benefit of using Internet of Things technologies to create an intelligent home communications network.
- In home wireless transmission, a wireless network protocol for a home device is used, and the effects of minimal complexity, self-organization, low energy

Traces outside BITEC Lalpur … Faculty level

Session Chair

Research Achievement

Resource person

Member of Editorial Board

Examiner

Member of Academic Bodies

Guiding research interns

Member of Committees of other Institutes/Universities

Traces outside BITEC Lalpur

Faculty Level

Research Achievement

- **Ms. Anupma Sahai**
  - Project report work submitted to Indian Council of Social Science Research for DCWC (Documentation Centre for Women and Children) forwarded to Ministry of Women and Child Development (National Institute of Public Cooperation and Child Development).

Guiding research interns

- **Dr. P.S. Bishnu**
  - Guided Summer Research Intern from Bhilai Institute of Technology, Durg
- **Dr. Mahua Banerjee**
  - Certificate of Appreciation from NPTEL for mentoring students in the course Python for Data Science

Examiner

- **Dr. Amrita Priyam**
  - Examiner of Ph D Viva-voce of a candidate B. R. Ambedkar Bihar University, Muzaffarpur and University Department of Mathematics (MCA), Ranchi University
  - Examiner of UG/PG courses at St. Xavier College ,Ranchi.
- **Mrs. Mamata Pandey**
  - Examiner of UG/PG courses at Marwari College, Ranchi University

Faculty Level

Speaker/Resource Person

- **Dr. Srabani Mukhopadhyaya**
  - Speaker in Refresher course for the teachers of universities, under the umbrella of UGC-HRDC at the Department of Mathematics, Jadavpur University, Kolkata, January 2 – 21, 2017.
- **Dr. Pranab Kumar**
  - Resource person/experts/visiting faculty in various MDPs and Organizations / institutions/Universities e.g. UGC, JPSC, CUJ, XISS, etc. Reviewer

- **Ms. Anupma Sahai**
  - Corporate classes for senior and middle level executives at Indian Institute of Coal Management; executive training institute for Coal India Limited executives at Ranchi
  - Entrepreneurship / Women Entrepreneurship classes, being organized by MSME, Government of India, under Entrepreneurial Development Programme
  - Classes handled for Block Education Officers of Jharkhand, being organized by Jharkhand Educational Project Council.
- **Dr. Mahua Banerjee**
  - Coordinator of ATAL (AICTE Teaching And Learning) online FDP Programme on "Emerging trends in Business Data Analytics for Managers" from 22nd November to 26th November 2021

46

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

Examiner

Faculty Level

- **Dr. Srabani Mukhopadhyaya**
  - Examiner in M. Tech. Department of Information Technology, Jadavpur University, Kolkata; M.Sc. Department of Mathematics, Jadavpur University, Kolkata and M. Tech. Department of Information Technology, NIT, Durgapur
- **Dr. Pranab Kumar**
  - Examiner of Ph D Viva-voce in Usha Martin University, Ranchi and Magadh University, Bodh Gaya
  - Examiner of UG/PG courses in Amity University, Ranchi; Usha Martin University, Ranchi; Birsa Agricultural University, Ranchi and Central University, Ranchi
- **Ms. Anupama Sahai**
  - External Examiner - Viva Voce Examination, Ranchi University
- **Dr. Mili Dutta**
  - Project Viva-voce Evaluation of MBA course at Institute of Management Studies(Ranchi University) St. Xavier College, Ranchi.

47

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

Traces outside BITEC Lalpur

Faculty Level

Member of Editorial Board

- **Dr. Abhaya Ranjan Srivastava**
  - Reviewer of Amity Journal of Marketing
- **Dr. Mahua Banerjee:**
  - Member of Jharkhand Journal of Development and Management Studies (JJDMS), XISS (since 2016)
- **Ms. Kimmi Kumari**
  - Reviewer in Q1 ranking journal
  - Reviewer @ Journal of Big Data

Guest of Honor

- **Mrs. Mamata Pandey**
  - Judge for the Departmental Seminar on Robotic Surgery organized by the Department of Computer Application, Nirmala College, Ranchi

Member of Academic Bodies

Faculty Level

- **Dr. Srabani Mukhopadhyaya**
  - Computer Society of India (CSI)
- **Dr. Amrita Priyam**
  - International Association of Engineers (IAENG).
  - Life Member of Indian Society for Technical Education (ISTE).
- **Dr. Pranab Kumar**
  - Life Member, National Institute of Personnel Management.
  - Individual Life Member, Indian Society of Labour Economics.
  - Individual Lifetime Member, National HRD Network.
- **Dr. Abhaya Ranjan Srivastava**
  - Board Member for recruiting personnel at State, District & Block Level Positions in Tejaswini Program in 2022, 2021, 2020 & 2019
  - Resource Person in Craft Awareness Program organised by Office of DC (Handicrafts), M&SEC Ranchi in 2022 at Khunti and Ranchi
  - Reviewed research Paper for Thailand & the World Economy (TWE) in 2021 (SCImago database)

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

49

Member of Academic Bodies

Faculty Level

- o **Ms. Anupma Sahai**
    - Member of Strategic Management Society , Chicago, Illinois, USA
    - Member of All India Management Association, New Delhi.
    - Member of National HRD Network, New Delhi
- o **Dr. Ashutosh Mishra**
    - International Council for Circular Economy (ICCE)
- o **Dr. Mili Dutta**
    - AIMS International (till 2019)
- o **Dr. Mahua Banerjee**
    - Indian Science Congress Association
    - Indian Society for Technical Education

50

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

Session Chair

Faculty Level

o **Dr. Srabani Mukhopadhyaya**
  ▪ Technical Program Co-Chair, ICACCT 2018
o **Dr. Abhaya Ranjan Srivastava**
  ▪ Chairperson for a session in the National Conference "e-Buzz-The X-factor" at GLA University Mathura during March 20-21, 2015
o **Ms. Anupma Sahai**
  ▪ Facilitated Talking Circles at University of Cambridge, UK, (in The Third International Conference on New Direction in the Humanities)
  ▪ Chaired the session on "Women Professionals" at the Eighth AIMS International Conference on Management organized at the Indian Institute of Management Ahmedabad.
  ▪ Chaired a Track (Track 1 - HR, Day 1, Second Session) and Member of the Organizing Committee - International Conference on Sustainability : Research, Education and Practice Organized by : The Department of Management, BIT Mesra, MAY 30-31, 2022.

51

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

Traces outside BITEC Lalpur

Faculty Level

Member of Committees of other Institutes/Universities

- **Dr. Pranab Kumar**
  - Member, BoS, Dept of IR&PM, Patna University, Patna
  - Usha Martin University, Ranchi (External Expert in Research Committees)
- **Dr. Abhaya Ranjan Srivastava**
  - Member of Technical Committee for Deemed to be Affiliation for Academic Year 2022-2023 at JUT(Jharkhand University of Technology) Ranchi for M.Tech, MBA, MCA, B.Tech., BBA, BCA, BHMCT & Diploma Courses
  - Member of Technical Committee for Affiliation of Diploma Course of Asoka Institute of Hotel Management, Giridih for Academic Year 2021-2022 on behalf of JUT in 2022
  - Member of Physical Inspection Committee of Asian Institute of Management & Technology on behalf of JUT in 2022
  - Member of Technical Committee for Deemed to be Affiliation for Academic Year 2021-2022 at JUT Ranchi
- **Mrs. Mamata Pandey**
  - Syllabus committee UG/PG (Department of Information Technology and Computer Application, Ranchi Women's College, Ranchi)

Books Published

- PS Bishnu, V Bhattacherjee "Data Analysis: Using Statistics and Probability with R Language" published by PHI on 2019

52

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

Participation in events

Winners at Smart India Hackathon

Certifications

Achievements

Conferences attended

Traces outside BITEC Lalpur

Student Level

Hackathon

o 1st prize winners in Smart India Hackathon 2022
  o The Team of **MCA students** composed of Mr. Rahul Kant (*Team Leader*), Ms. Anshu Kumari, Ms. Ruchika Vijay, Mr. Soumyak Biswas and Ms. Swati Rani were declared 1st prize winners.
  o The Team of **BCA students** composed of Mr. Aakash Arya(*Team Leader*), Mr. Aman Kumar, Mr. Harsh Raj, Mr. Shubham Kumar Singh, Ms. Puja Kumari and Ms. Kriti Shekhar were declared joint winners.

Participation

o Participated in FICCI FRAME OF YOUR IDEA 2022, Mumbai
o Participated in Tata imagination challenge (2021)

Achievements

o 1st Prize in Quizzard 2022
o A+ Certification in Digital Marketing 2022
o Got a medal from Jharkhand Renewable Energy Development Agency (JREDA), campaigning for Renewable Energy sources.
o Electrical work permit of supervisor- issued by Energy Dept Govt of Jharkhand

Traces outside BITEC Lalpur

Student Level

Competition

- India prime author award, 3rd rank in district level. (Proud Co-author of "Sukoon")
- JSCA Swimming Competition held on 15th June, 2022 (3rd Position)

Roles and Responsibilities

- Chapter Lead at DRISTI NGO.
- Organised Blood Donation Camp at BIT Lalpur
- Event Management Head At Dristi NGO Lalpur Chapter (2022-2023)
- Vice-president At Wake Up India Foundation Ranchi Chapter (2022-2023)
- Member of NGO Little Aryabhatta Foundation

Conference

- Amazon AWS online conference
- Machine Learning To Deep Learning: A Journey For Remote Sensing Data Classification , IIRS Dehradun
- National Conference On Paradigm Shift Towards Sustainable Management Practices
- Conference at ISM Dhanbad on its founder's day, Seminar by Idigitalpreneur.

55

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

Traces outside BITEC Lalpur

Student Level

Quantum Computing Training Expertise Level

Microsoft Certified: Azure Data Fundamentals (DP-900)

Ethical Hacking

Certifications

Digital Marketing

Microsoft Certified: Azure Fundamentals (AZ -900)

Google Analytics

Productivity and change management by Renoir Consulting

Events organized by Student Bodies/Clubs

Name of the Event	Date	Details
"Swachta Drive"	11/08/18	"Swachta Drive" at Birsa Munda Samadhi Asthal and Swami Vivekananda Smriti Park, Kokar, Ranchi
Saghan Safaai Jagrukta Abhiyaan	12/08/18	Cleanliness Drive at Hindpiri, Ranchi
Independence Day	15/08/18	Nukkad Natak on Swachh Bharat Abhiyaan
Teachers' Day Celebration	05/09/18	MAD AD and Speech/Poetry Competition
NSS Foundation Day	24/09/18	Nukkad Natak –"Ek Abhilasha Swachhta ki" Oxygen Park and Nilambar-Pitambar park, Morhabadi, Ranchi
Cultural Program	29/09/18	"The Cleanliness Message Program" at Vanprashta Ashram, DAV Nandraj, Bariatu, Ranchi in collaboration with CCL
Saghan Swachhta Abhiyan	30/09/18	Swachhta Hi Sewa "Say No To Plastic"
Celebrating Gandhi Jayanti	02/10/18	Swachhta Cyclothone (A Cycle Rally in collaboration with CCL)

Events organized by Student Bodies/Clubs

Name of the Event	Date	Details
Unity Day Celebration	28/10/18	At the Orphanage 'Cheshire Home' Bariatu, Ranchi
Education Camp at Rajkiya Mahila Vidyalaya, Kantatoli	10/11/18	Teaching students & organizing fun events
Youth Parliament	10/01/19 – 11/01/19	Birla Institute of Technology, Mesra (Lalpur Centre)
Health Camp at Tatisilwai, Ranchi	13/01/19	Organised in association with Prayas Global Foundation at Tatisilwai , Ranchi.
Republic Day Celebration	26/01/19	Nukkad Natak Poetry, Speech and group song
Education Camp at Rajkiya Balika Uchhya Vidyalaya Vidyalaya, Kantatoli	09/02/19	Organised sessions on personal hygiene and sanitation for the students and games.
Women's Day: NAZARIYA	07/03/19	Speech, song, poetry competition

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

59

Snapshots of Events organized by Student Bodies/Clubs

रांची, मंगलवार, 5 जुलाई 2022 **05**

www.live7tv.com

एक झलक

बिरला इंस्टीट्यूट में डिजिटल मार्केटिंग पर कार्यशाला

रांची : डिजिटल मार्केटिंग पर ऑनलाइन राष्ट्रीय कार्यशाला सोमवार को बिरला इंस्टीट्यूट ऑफ टेक्नोलॉजी लालपुर में शुरू हुई। मुख्य अतिथि के रूप में प्रो कुणाल मुखोपाध्याय, संकाय मामलों के डीन ने राष्ट्रीय कार्यशाला का उद्घाटन किया। विशिष्ट अतिथि डॉ सैम्य सिंह, प्रो आईआईटी धनबाद ने डिजिटल मार्केटिंग के व्यापक क्षितिज पर मुख्य भाषण दिया। अध्यक्ष डॉ वंदना भट्टाचार्जी, निदेशक बीआईटी लालपुर ने कहा कि डिजिटल मार्केटिंग अब हमारे दैनिक जीवन का हिस्सा है। विभागाध्यक्ष डॉ संदीप उत्ता कंप्यूटर साइंस एंड इंजीनियरिंग ने डिजिटल मार्केटिंग विशेषता पर बल दिया। संयोजक डॉ अभय ... देने वाले संसाधन व्यक्तियों ... दिनों तक एमएस टीम ... को समाप्त होगी। मौके पर ... मिश्रा, श्रद्धा शिवानी, संयो... सिंह समेत बीआईटी के सभी ... थे।

क्विजार्ड -2022 में बीआईटी लालपुर के एमबीए छात्र विजेता

रांची | बीआईटी मेसरा में 'डिपार्टमेंट ऑफ मैनेजमेंट' के तत्वावधान में 'क्विजार्ड-2022 का आयोजन किया गया। इसमें डिपार्टमेंट ऑफ मैनेजमेंट की अरुणिमा अस्थाना, स्नेहा सिंह, फरहान अख्तर व जाहिद इकबाल की टीम ने प्रथम स्थान प्राप्त किया। एचओडी डॉ. श्रद्धा शिवानी ने छात्रों से कहा कि टीम एफर्ट से आपने बेहतर प्रदर्शन किया। क्विज में खुद को हमेशा अपडेट रखनेवाला ही ति... ... उन्होंने स्टूडेंट्स को आगे बढ़...

Digital Marketing Workshop

1st Prize Quizzard 2022

जरूरतमंदों में कंबल व साड़ी का वितरण

... मेमोरियल बीएड कॉलेज केदल व बीआईटी एक्सटेंशन ... ली व सोहराई के अवसर पर शनिवार को संयुक्त रूप से ... मंदों के बीच 200 कंबल, साड़ी व मिठाई का वितरण ... अवसर पर उदय बीएड कॉलेज के अध्यक्ष संतोष महतो, ... कुमार कंडरवार, बीआईटी के अभय रंजन श्रीवास्तव, डॉ ... गत मुंडा, लखिंद्र पाहन, अखिलेश शर्मा, संजय उरांव, प्रतुल ... रमेश महतो, चारों मुंडा व बीआईटी के विद्यार्थी मौजूद थे।

Clothes Distribution to the needy

Snapshots of Events organized by Student Bodies/Clubs
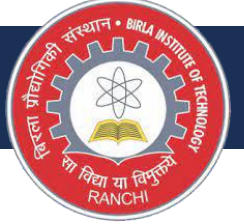
Blood Donation Camp on 16 September 2022

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

Snapshots of Events organized by Student Bodies/Clubs
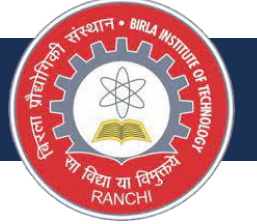

बीआइटी लालपुर ने लगाया कैंप

रांची. एनएसएस बीआइटी मेसरा लालपुर कैंपस की ओर से शनिवार को राजकीय मध्य विद्यालय, कांटाटोली में 'एजुकेशन कैंप' लगाया गया। इस दौरान बच्चों ने चित्रकला प्रतियोगिता, कबड्डी और खो-खो में हिस्सा लिया। भाषण द्वारा बच्चों...

Education Camp

Cycle Rally

बीआइटी लालपुर के छात्रों ने मनाया एकता दिवस

बीआइटी लालपुर के छात्र-छात्राओं ने सोमवार को चेशायर होम में एकता दिवस मनाया। इन्होंने सरदार वल्लभ भाई पटेल के जीवन को बताया। मौके पर एनएसएस इंचार्ज डॉ. एआर श्रीवास्तव, निमिषा, मेघा, शुभा, आकाश, प्रियंका, अपूर्व, अनुष्का, रिचा, परिक्षित सहित अन्य थे।

विद्यार्थियों ने छोटे बच्चों को बताया शिक्षा का महत्व

रांची | संवाददाता

एनएसएस बीआईटी मेसरा लालपुर कैंपस की ओर से शनिवार को राजकीय मध्य विद्यालय कांटाटोली में एजुकेशन कैंप लगाया गया।

इस दौरान बच्चों ने चित्रकला प्रतियोगिता, कबड्डी व खो-खो में भाग लिया। भाषण प्रतियोगिता से बच्चों को शिक्षा और स्वच्छता का महत्व बताया गया। बच्चों को स्वच्छ और शिक्षित बनने की सीख मिली। कार्यक्रम एनएसएस के कार्यक्रम संयोजक डॉ एआर श्रीवास्तव व विद्यालय की प्रभारी प्राचार्या अनीता के नेतृत्व में हुआ।

बच्चे खेल में शामिल हुए। • हिन्दुस्तान

कार्यक्रम को सफल बनाने में परीक्षित कुमार बॉस, जया, जागृति, कृतिका, फैजान, साक्षी, प्रेरणा समेत छात्र छात्राओं ने महत्वपूर्ण भूमिका निभायी।

Tree Plantation Drive

साइकिल रैली निकाली गई

रांची। बीआईटी लालपुर कैंपस की एनएसएस इकाई औरसीसीएल की ओर से गांधी जयंती पर साइकिल रैली 'साइक्लोथॉन' का आयोजन किया गया। रैली सीसीएल मुख्यालय दरभंगा हाउस से शुरू होकर शहर के विभिन्न हिस्सों से गुजरी। साइकिल रैली के माध्यम से स्वच्छता के लिए लोगों को प्रेरित किया गया। कार्यक्रम को सफल बनाने में एनएसएस बीआईटी मेसरा लालपुर कैंपस के परीक्षित कुमार, नीतू कुमारी, अमन, श्रेया उपाध्याय व 70 से अधिक छात्रों ने भूमिका रही।

Ekta Diwas Celebration

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

Recruitments & Alumni

Major Recruiters at BITECL

On Centre Students Placement Record (MBA)

No. of students placed

- 2019: 51
- 2020: 49
- 2021: 30
- 2022: 41

Highest salaries (SALARY IN LAKHS)

- 2019: 6
- 2020: 10.2
- 2021: 11.5
- 2022: 12.56
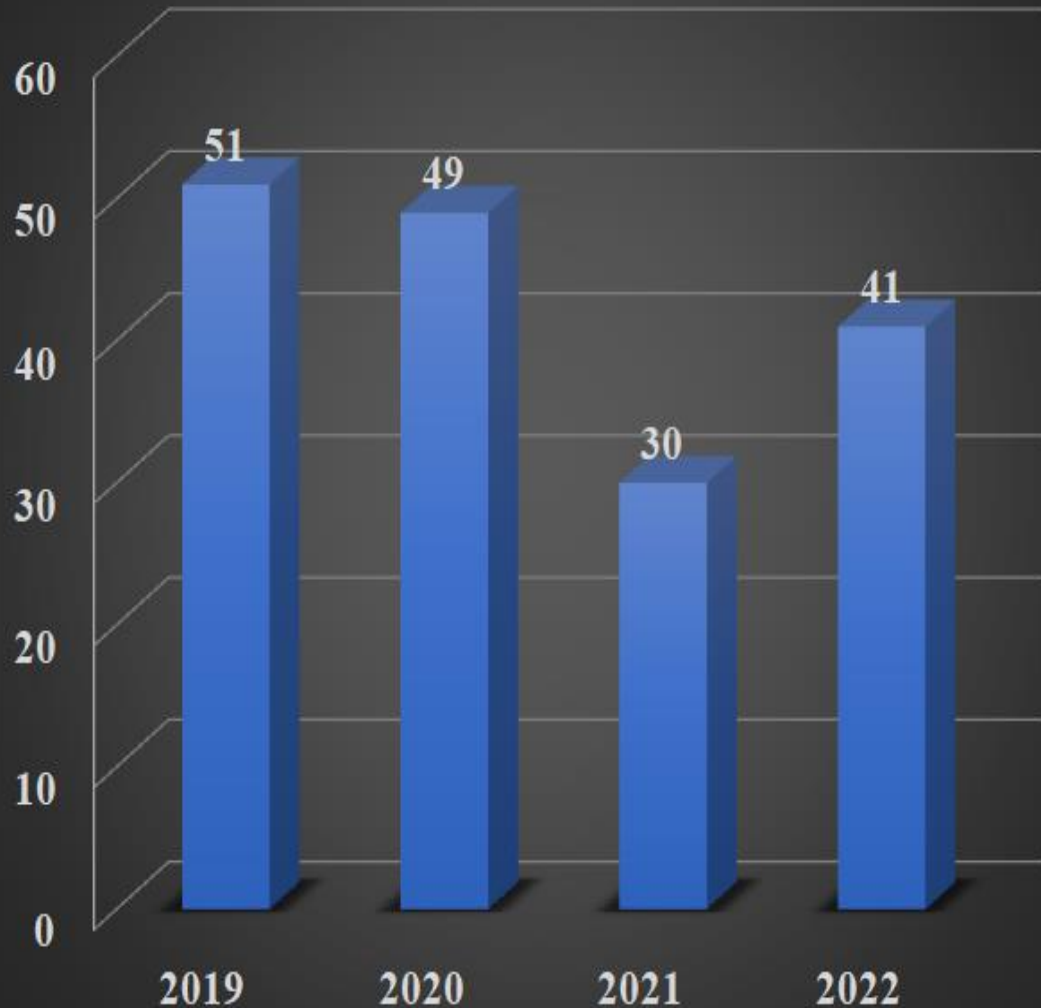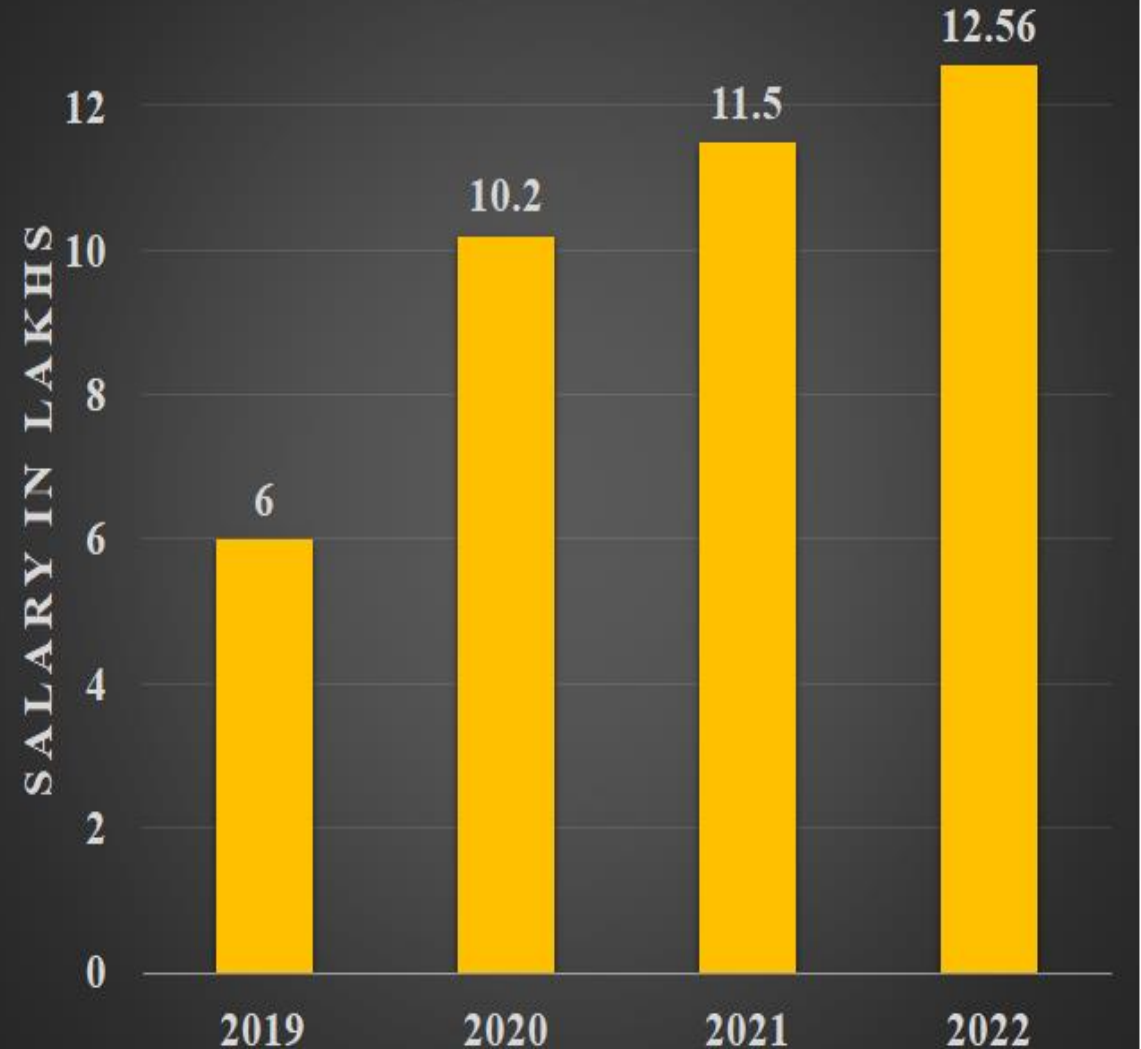
On Centre Students Placement Record (CSE)

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand
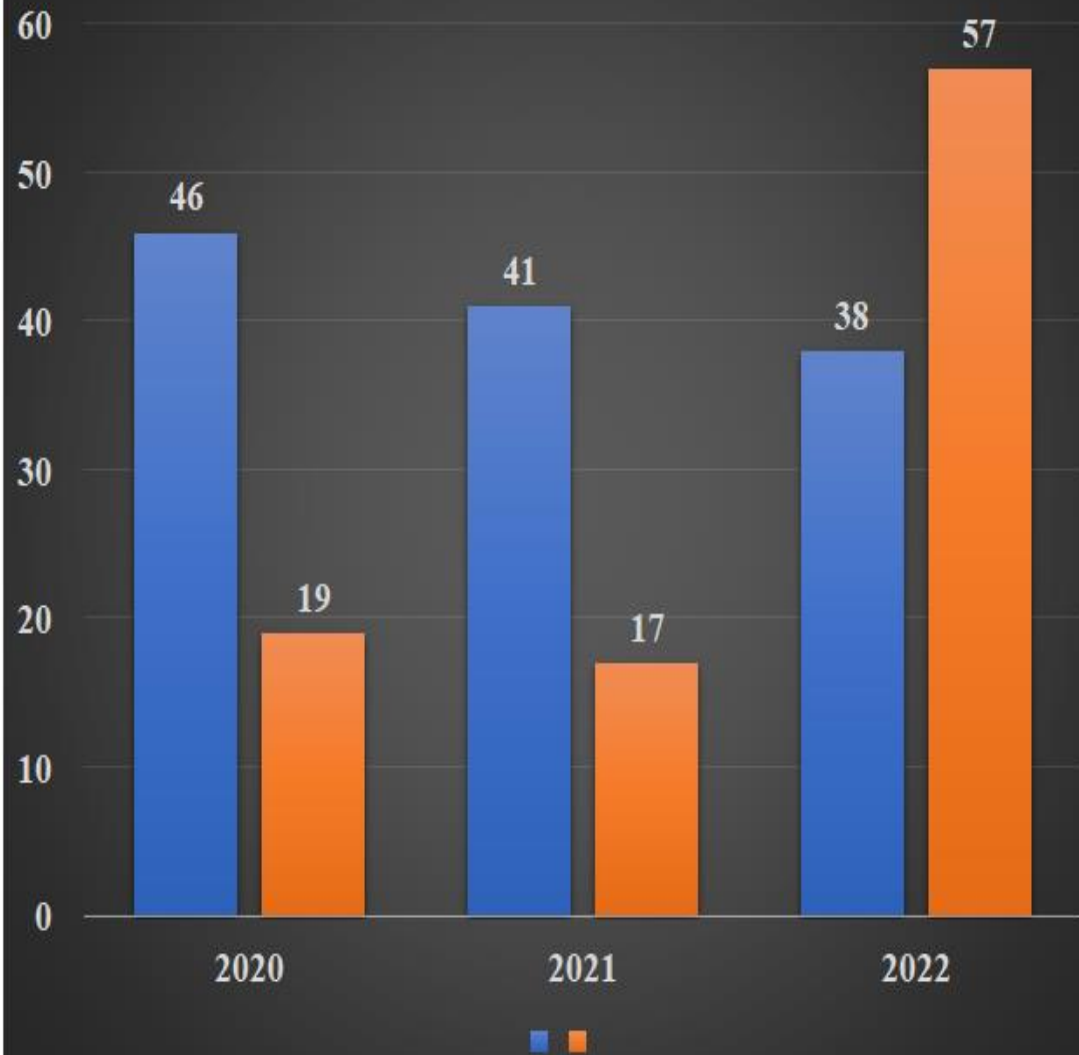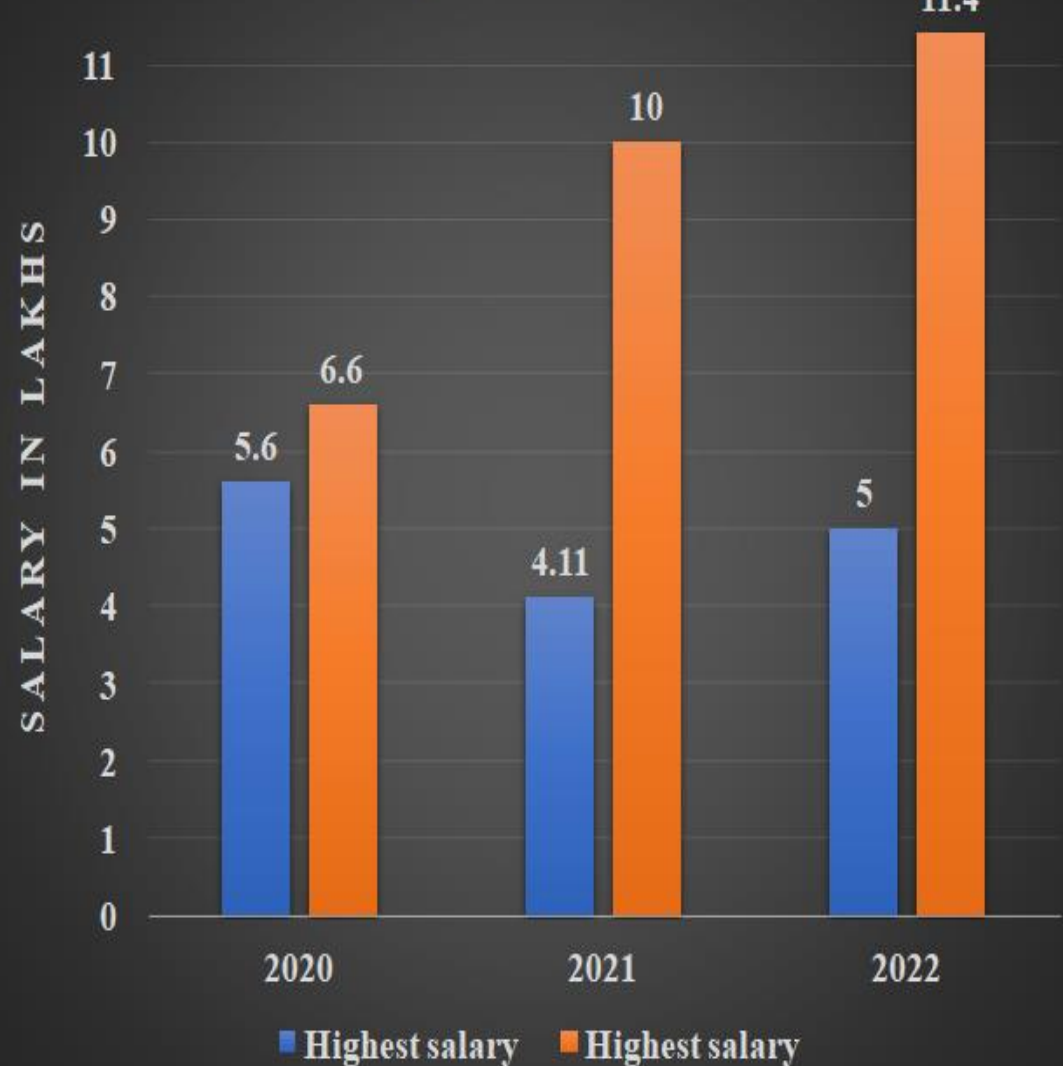
Distinguished Alumni of BITECL

Mr. Umang Gupta
Software Engineer
Salesforce
(Integrated MCA, 2017)

Mr. Vaibhav Singh
Senior Manager, Operations
SAIL, Durgapur
(MCA, 2006)

Ms. Priti Kumari
System Debug Software Engineer, Intel
(MCA, 2016)

Ms. Apurva Roy
Associate Analyst, Deloitte
(BCA, 2021)

Distinguished Alumni of BITECL

BIT Mesra Extn. Centre Lalpur (Ranchi City), Jharkhand

69

Distinguished Alumni of BITECL
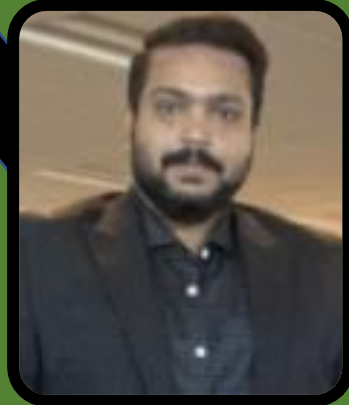
Mr. Rahul Ranjan
Information Security
Architect & Advisor,
Cargill
(BCA, 2009)

**Mr. Paras Kr.
Pathak**
SDE3,
Amazon
(MCA, 2009)

Mr. Bijoy Mandal
Package Specialist-
HCM Cloud,
IBM - USA
(MCA, 2011)

**Mr. Navarose
Neeraj**
Assistant Consultant,
TCS
(MCA, 2010)

Distinguished Alumni of BITECL

Mr. Shivesh Singh
Head – Business HR
Bandhan Bank
(BBA, 2004)

Mr. Sumit Kumar
Assistant Vice-President,
Bandhan Bank
(MBA, 2006)

Ms. Divya Narayan
Manager – Success Factors,
Deloitte
(MBA, 2008)

Distinguished Alumni of BITEC

Research Glimpses @ BITEC Lalpur

Some glimpses…

Software defect prediction using Graph Convolutional Network feature representation

A Framework For Analysis Of Incompleteness And Security Challenges In IOT Big Data

DETAILED ANALYSIS OF CLASSIFIER FOR PREDICTION OF DIABETES

Electroencephalogram (EEG) signal based study of Depression Disorder

Movie Analyzer using Fuzzy Rule Based System

Image Regeneration from EEG signals using Deep learning

Message framing impact on behavioural intention of the consumer in purchase of organic food

Identification of k-Most Promising Features to Set Blue Ocean Strategy in Decision Making

PREDICTING EMPLOYERS' SATISFACTION WITH SKILL COMPETENCIES OF INDIAN ENGINEERING GRADUATES APPLYING EXPECTANCY-DISCONFIRMATION THEORY

Grid Exploration by a Swarm of Autonomous Robots with Minimum Repetitions

Employer Branding and its Role in Effective Recruitment

A Theme of Smart Cities Based on IoT, Fuzzy Logic and Quantum Deep Learning Technique

Detecting Denial of Service Attacks using Machine Learning Algorithms

Application of Fuzzy Automata Decision-Making System in Target Control

A Novel Hybrid Metaheuristic Approach to Perceive the Gender Based Identification System

Predicting Employers' Satisfaction with Skill Competencies of Indian Engineering Graduates

Research Gap

Lack of employability of 1.5 million engineering graduating from HEIs every year.

Implications

The study highlights skill competencies of engineering graduates that would meet the expectations and perception of employers, thereby affecting employer satisfaction with new hires. Findings of the study are expected to be of use not only to higher education institutions offering technical education in revisiting their curricula in tandem with industry requirements but also to students pursuing engineering courses and employers who recruit these students once they graduate.

Model
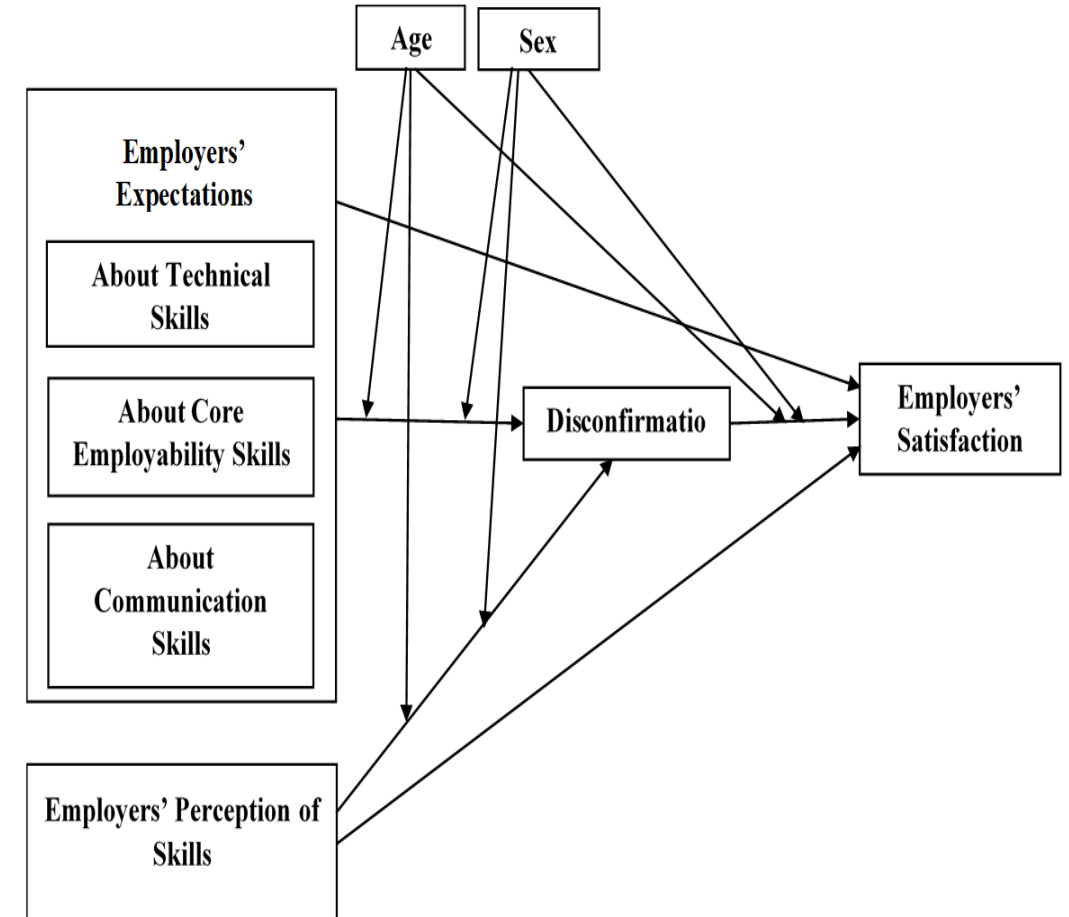
Image Regeneration from EEG signals using Deep learning

Objectives

The aim of the work is to extract some cues/relevant features from the brain electrical activity recorded using an EEG device, and classify, visualize and generate the image of an object a person is thinking about.

Dataset Used

Perceive Lab:
Stimuli used: 10 image class (IMAGENET)
No. of Electrode: 128, Subjects: 6

MindBig:
Stimuli used: 10 image class (IMAGENET) and 10 grayscale digit image class (MNIST)
No. of Electrode: 5, Subjects: 1

Steps

- EEG Data preparation (Pre Processing)
- EEG feature extraction
- Classification (Machine Learning vs. Deep Learning)
- Performance Analysis Comparison
- Image Regeneration and Image Quality Assement
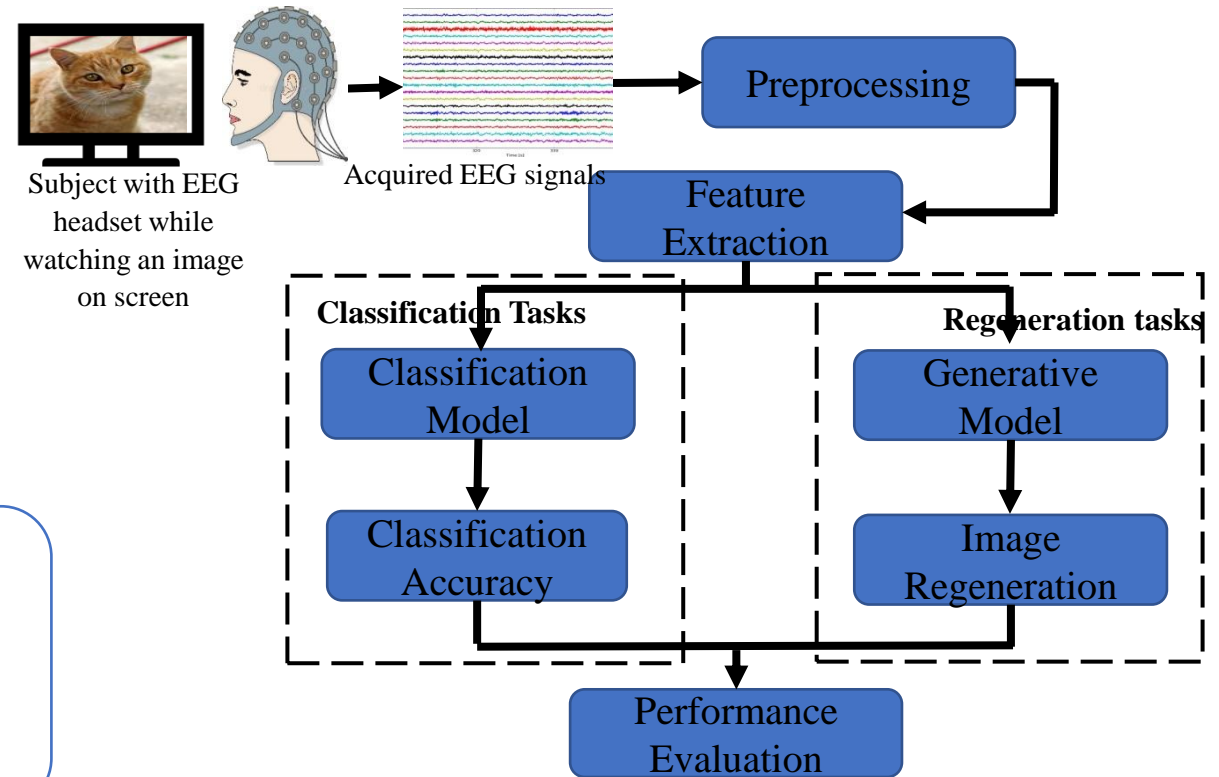
Work Flow

Subject with EEG headset while watching an image on screen

Acquired EEG signals

Preprocessing

Feature Extraction

Classification Tasks
Classification Model → Classification Accuracy

Regeneration tasks
Generative Model → Image Regeneration

Performance Evaluation

A Novel Hybrid Metaheuristic Approach to Perceive the Gender Based Identification System

Objectives

The objective of the work is to propose the metaheuristic approach for a gender-based identification system by integrating the multimodal biometric traits fingerprint, palm print and hand in a specific manner that narrows down the search space.

Dataset Used

Dataset :
Hand and Palm images: 20
Fingerprints: 160 (4 from each hand)
Total Subjects- 20 (Male: 10 , Female:10)

Software: MATLAB R2017a

Steps

Acquisition and Pre-processing: Read three biometric input image and pre-process.

Feature Extraction: Extract texture features from all biometric images and minutiae features of fingerprint.

Feature Fusion: Fuse the obtained three feature vector set.

Optimal feature selection: Using proposed hybrid metaheuristic approach GFF

Matching: Perform matching of query image with the stored template. If the match is successful, apply a classifier to classify the gender.

Outcome

Enhances the overall performance of the proposed system by reducing the search space over time and space. **Accuracy rate of 99.2% achieved.**

Optimized Gender Recognition (OGR):Work Flow
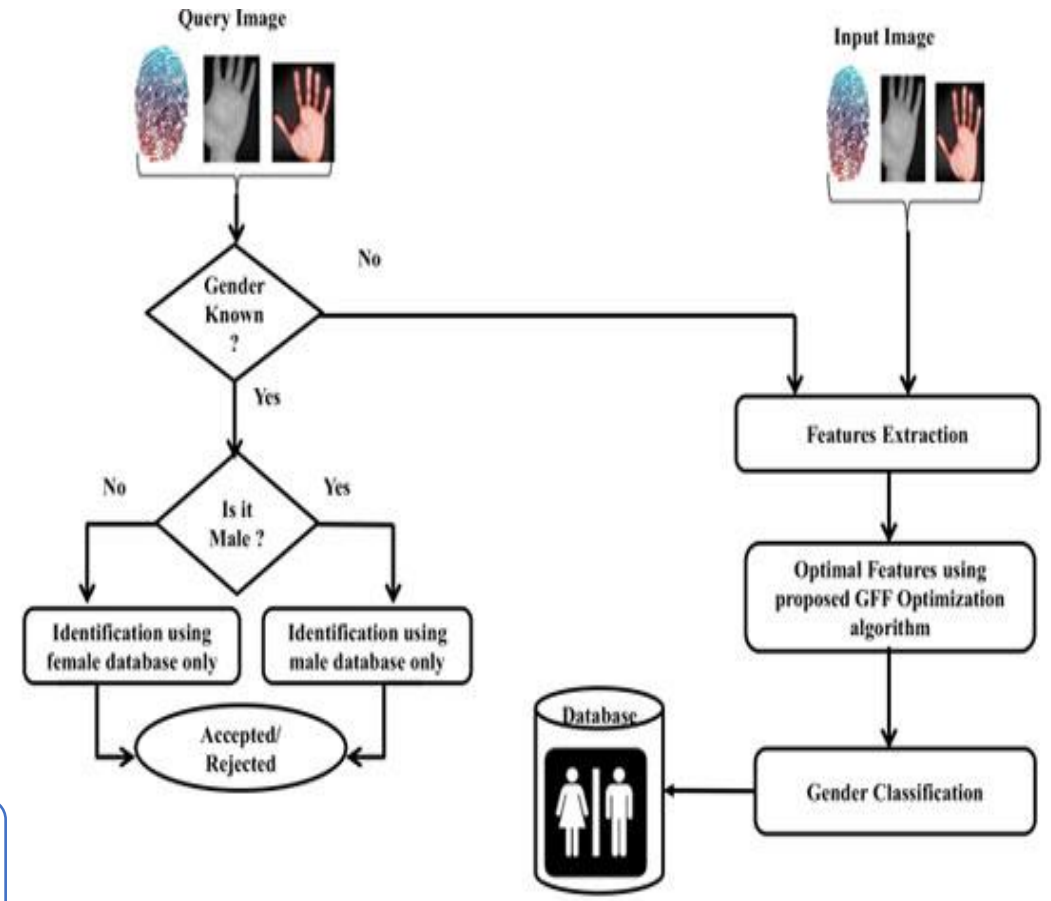
Figure 1: Static features values from GCN outputs

CFG

Apply cognitive approach to find the cognitive complexity measure for node features value of graph through cognitive weight.

Node features with cognitive weights used for this work:

1. IN: number of inputs in a program
2. OUT: Number of outputs in a program
3. IF: 2, WHILE:3, FOR: 3
4. EXP: number of sequence statement.

Cognitive weight (W_c) of BCS as assign by wang [9] can be calculated as:

$W_c = \sum_{j=1}^{q} [\prod_{k=1}^{m} \sum_{i=1}^{n} Wc(j, k, i)]$
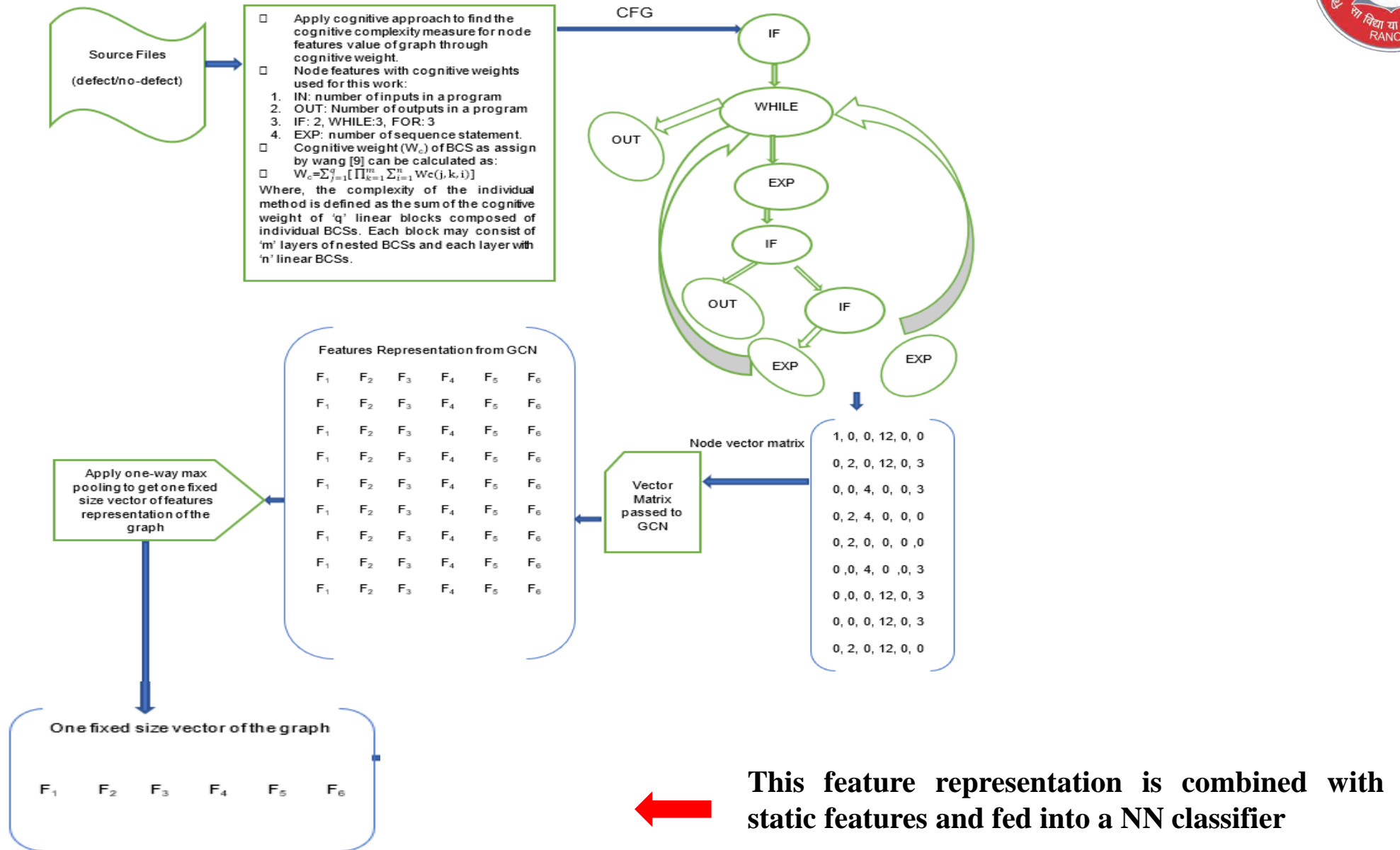
Where, the complexity of the individual method is defined as the sum of the cognitive weight of 'q' linear blocks composed of individual BCSs. Each block may consist of 'm' layers of nested BCSs and each layer with 'n' linear BCSs.

Source Files

(defect/no-defect)

IF

WHILE

OUT

EXP

IF

OUT

IF

EXP

EXP

Features Representation from GCN

F_1	F_2	F_3	F_4	F_5	F_6
F_1	F_2	F_3	F_4	F_5	F_6
F_1	F_2	F_3	F_4	F_5	F_6
F_1	F_2	F_3	F_4	F_5	F_6
F_1	F_2	F_3	F_4	F_5	F_6
F_1	F_2	F_3	F_4	F_5	F_6
F_1	F_2	F_3	F_4	F_5	F_6
F_1	F_2	F_3	F_4	F_5	F_6
F_1	F_2	F_3	F_4	F_5	F_6
F_1	F_2	F_3	F_4	F_5	F_6

Node vector matrix

Vector Matrix passed to GCN

1, 0, 0, 12, 0, 0

0, 2, 0, 12, 0, 3

0, 0, 4, 0, 0, 3

0, 2, 4, 0, 0, 0

0, 2, 0, 0, 0 ,0

0 ,0, 4, 0 ,0, 3

0 ,0, 0, 12, 0, 3

0, 0, 0, 12, 0, 3

0, 2, 0, 12, 0, 0

Apply one-way max pooling to get one fixed size vector of features representation of the graph

One fixed size vector of the graph

F_1 F_2 F_3 F_4 F_5 F_6

This feature representation is combined with static features and fed into a NN classifier

An Efficient Clustering-Based Segmentation Approach for Biometric Image

Objectives

The work aims to present an efficient clustering-based image segmentation approach to obtain the quality segmented binary image that is further processed to get the quality decision in the biometric-based identification system.

Dataset Used

Dataset 1: 14 color hand image

Dataset 2: 8 color hand images

Dataset 3: 3540 (10 sample) color hand images

Software: MATLAB R2017a

Centroid Based Image Segmentation (CBIS):Work Flow
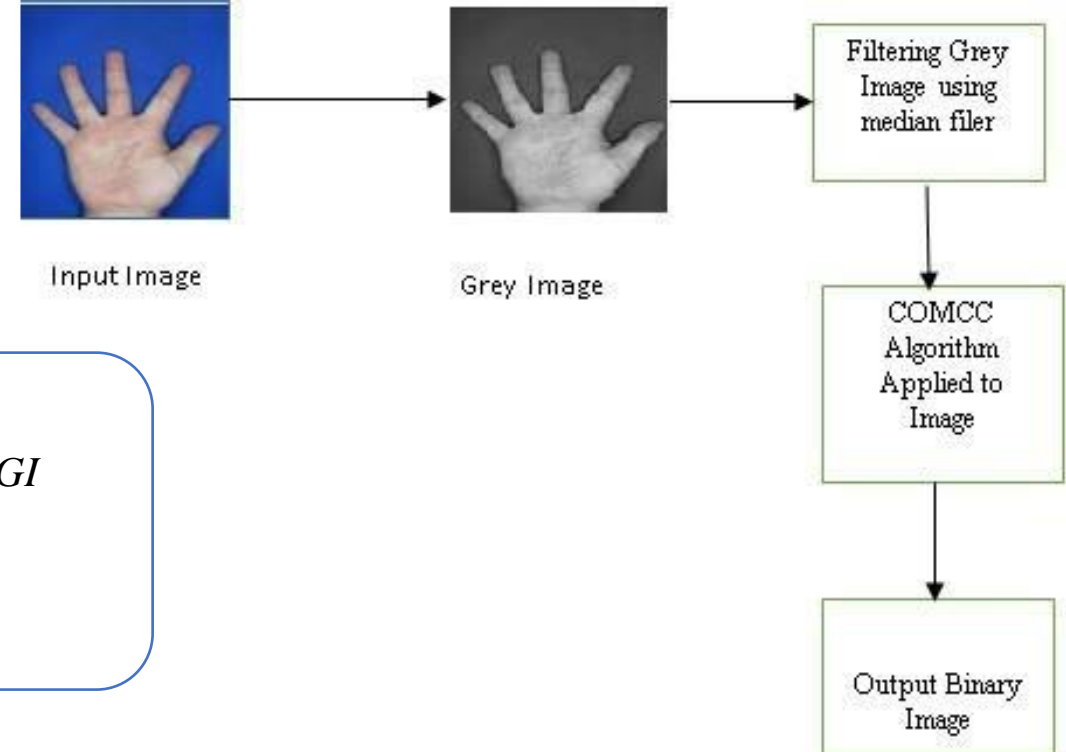
Steps

Read an input hand image I

IF I is not grayscale image, then Transform an input image *I* to gray image *GI*

Perform filtration using median filter of size 7 on gray image *GI*

Apply Algorithm (COMCC) on gray image GI

Obtain the binary image *BI* as an output

Outcome

Performance parameters used are - PSNR, Dunn Index (DI), Silhouette width (S) and Run Time.

The proposed CBIS's segmented results of hand images are more **authentic, sharp and clear visualization** that yield effective and efficient results than the other existing methods approaches such as K-mean, K-medoid and GMM.

Exploring Relationships Among IT Advancement, IT Assimilation, Supply Chain Capabilities & Supply Chain Performance

Objectives

Explore the direct and indirect relationships between the capabilities related to IT, and between the capabilities related to supply chain and study their effects on performance.
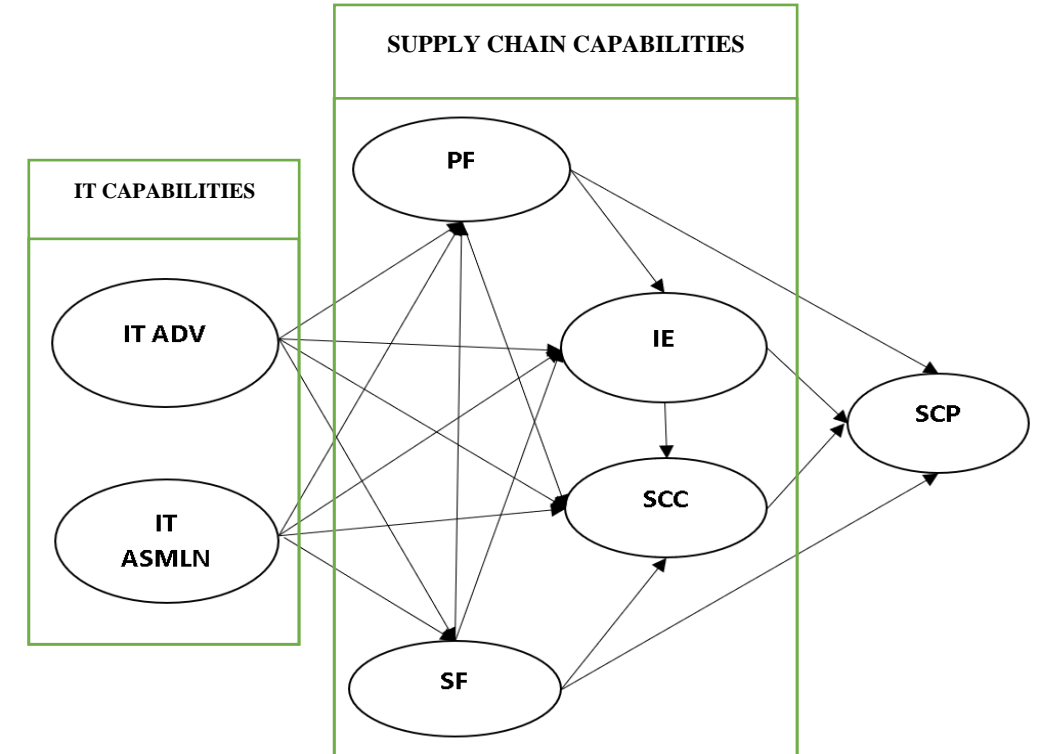
Research Methodology

The survey was accomplished by employing the snowball sampling technique.
The respondents comprised of senior and mid-level executives from various departments related to the manufacturing and IT activities from Manufacturing Industries in India (Boilers and heavy electrical equipment, steel and alloy, fertilizer, chemical and allied products, ceramics, etc.).
The analysis was conducted on 285 valid responses using PLS-SEM (Partial Least Square – Structural Equation Modeling) through SmartPLS 3.0.

Conclusion

The study from the ERBV perspective explored the relationship between IT capabilities (IT advancement and IT assimilation) on the SC capabilities (supplier's flexibility, production flexibility, information exchange, and supply chain coordination).
Increasing use of advanced IT leads to organizations to have access to suppliers' status on various aspects thereby offers required flexibility.
The flexibility exhibited by suppliers was found to be an important SC capability in achieving superior SC performance.
Information exchange and suppliers' flexibility were found to be important mediators which could be leveraged by IT advancements and IT assimilation in realizing improvements in SC coordination and SC performance.

Research Model

IT ADV – IT Advancement   IT ASMLN – IT Assimilation   PF – Production Flexibility
SF – Suppliers' flexibility   IE – Information Exchange
SCC – Supply Chain Coordination SCP – Supply Chain Performance

Grid Exploration by a Swarm of Autonomous Robots with Minimum Repetitions
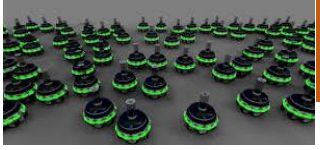
Objectives

To explore a grid with minimum repeated visits of nodes using autonomous, asynchronous and oblivious (no memory) robots that have unlimited visibility and a single pebble each.

Model

Robots' characteristics
- Unlimited Visibility
- Oblivious
- Each robot has a Pebble
- Asynchronous
- CORDA model

Assumption
The initial configuration is assumed to be random but asymmetric and aperiodic.

Steps
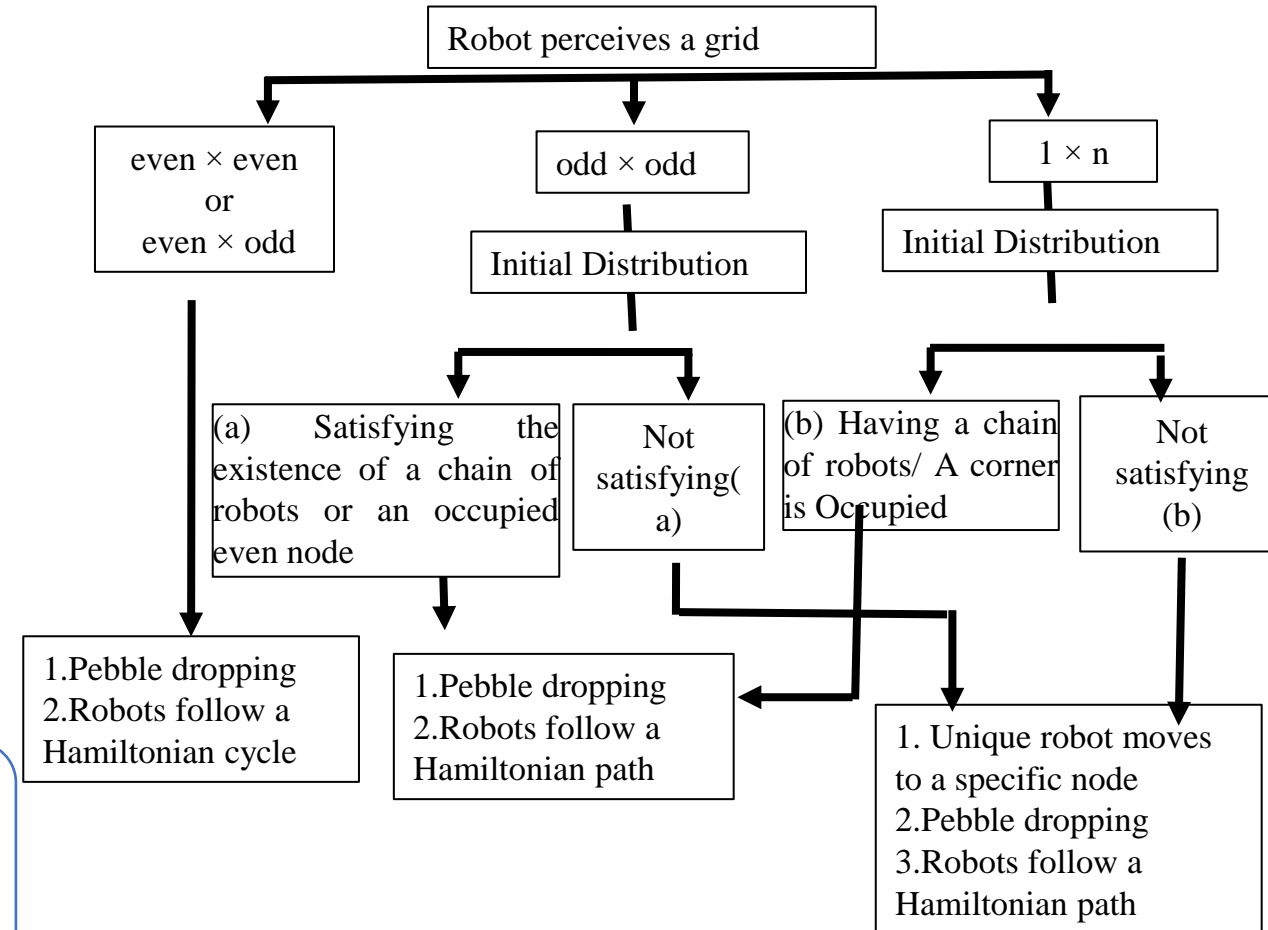
There are two phases in the algorithm:
1. **Pebble dropping phase:** Each robots drops its pebble on its initial location
2. **Exploration phase:** Robots identify either a Hamiltonian cycle or a Hamiltonian path and move along that cycle or path until a termination condition is satisfied.

Results

The algorithm achieves an **optimum exploration of a grid with minimum repeated visits** of nodes.
It explores an (odd × odd) (other than 1 × n) grid with **at most 1** repeated visit and (even × even) and (even × odd) grids **without any repeated visit**; (1 × n) grid with at most ⌊n/(k+1)}-1⌋ repeated visits of nodes.

Work Flow

Robot perceives a grid

- even × even or even × odd
  - 1. Pebble dropping
  - 2. Robots follow a Hamiltonian cycle

- odd × odd
  - Initial Distribution
    - (a) Satisfying the existence of a chain of robots or an occupied even node
      - 1. Pebble dropping
      - 2. Robots follow a Hamiltonian path
    - Not satisfying (a)

- 1 × n
  - Initial Distribution
    - (b) Having a chain of robots/ A corner is Occupied
    - Not satisfying (b)
      - 1. Unique robot moves to a specific node
      - 2. Pebble dropping
      - 3. Robots follow a Hamiltonian path

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Movie Analyzer using Fuzzy Rule Based System

Objectives

The aim of the work is to design a fuzzy rule based system for categorization of a movie, based on effectiveness of attributes like Acting, Direction, Music and Concept and analyzed the values of these attributes for the success of a movie.

Dataset Used

Variable Name	Min	Max	Mean	Median	Standard Deviation
Acting	3.7	9.9	7.26	7.45	1.72
Direction	3.8	9.8	6.85	7.05	1.95
Music	3.5	9.6	6.85	7.6	2.12
Concept	1.9	9.5	6.25	6.65	2.07
Final Status	3.7	9.4	6.79	7.25	1.79

Work Flow

Fuzzy Rule Based System

Performance Evaluation with Multiple Regression Model

Steps

- Identify the variables (input and output) of the system.
- Partition interval spanned by each variable into a number of fuzzy subsets.
- Assign membership function for each fuzzy set.
- Assign fuzzy relationships between input and output fuzzy subsets.
- Fuzzily the inputs to the system.
- Use fuzzy approximate reasoning to infer the output contributed from each rule.
- Aggregate the fuzzy outputs recommended by each rule.
- Apply defuzzification to form a crisp output .
- performance analysis comparison with multiple regression model.

Outcome

fuzzy logic can be used as an alternative for estimating the final status of movie as bad, average and good.

Identification of *k*-Most Promising Features to Set Blue Ocean Strategy in Decision Making

Objectives

The objective is to develop a BI system which helps the company to set the blue ocean strategy by discovering *k*-most promising features from the customers' query and a set of existing products.

Dataset Used

Auto dataset:

the number of data is 392.

The number of features is 9.

Car dataset:

The total number of data is 1728

The number of features is 6.

Work Flow

Customer & Product Data → Preprocessing

Preprocessing →

Knowledge Engineering { Data Structure / Algorithm }

Algorithm → Performance Evaluation

Steps

Data preparation (Pre Processing)
Apply knowledge engineering
Performance Analysis
Conclusions and suggestions

Outcome

Using mathematical and experimental proofs, we proposed two efficient algorithms to identify the best k- most promising features.
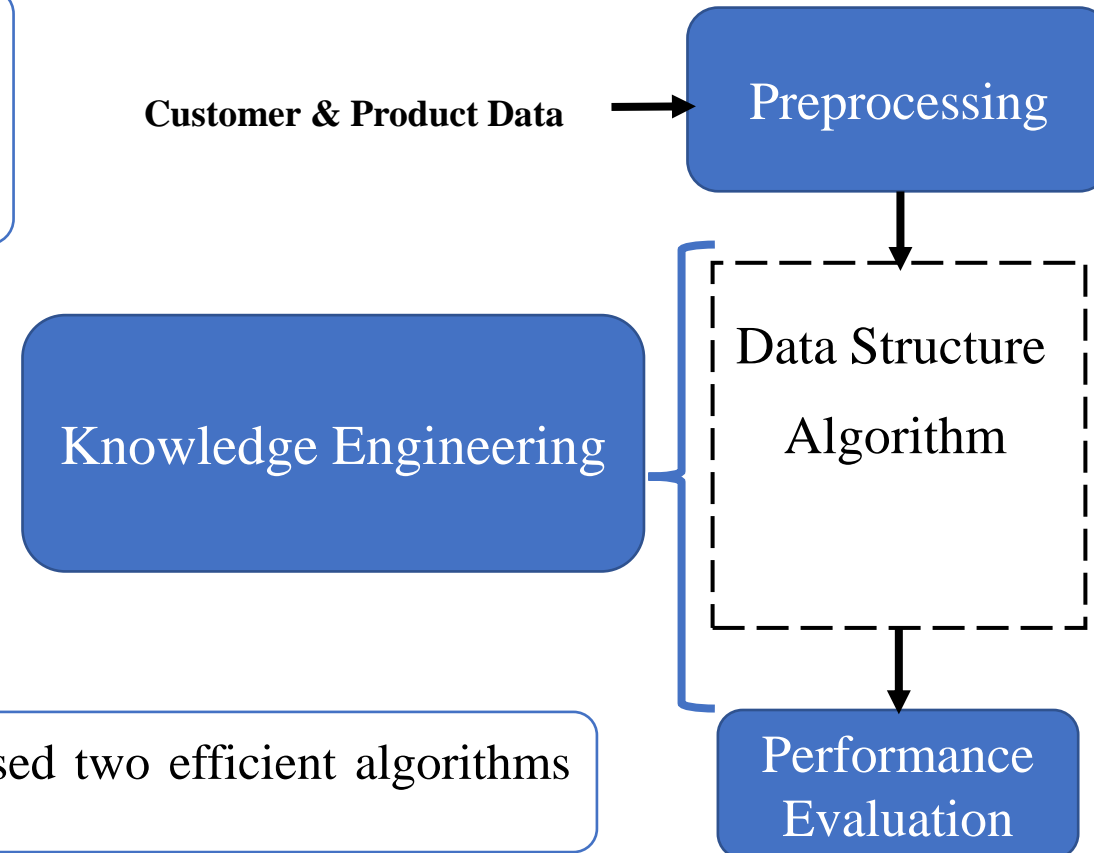
Detailed Analysis of Classifier for Prediction of Diabetes

Objectives

The main aim of this work is to analyze different classification algorithm such as SVM, KNN , Decision Tree , Random Forest to detect Diabetes at very early stage based on different parameter.

Dataset Used

We used PIMA Indians diabetes dataset having attributes of 768 patients.

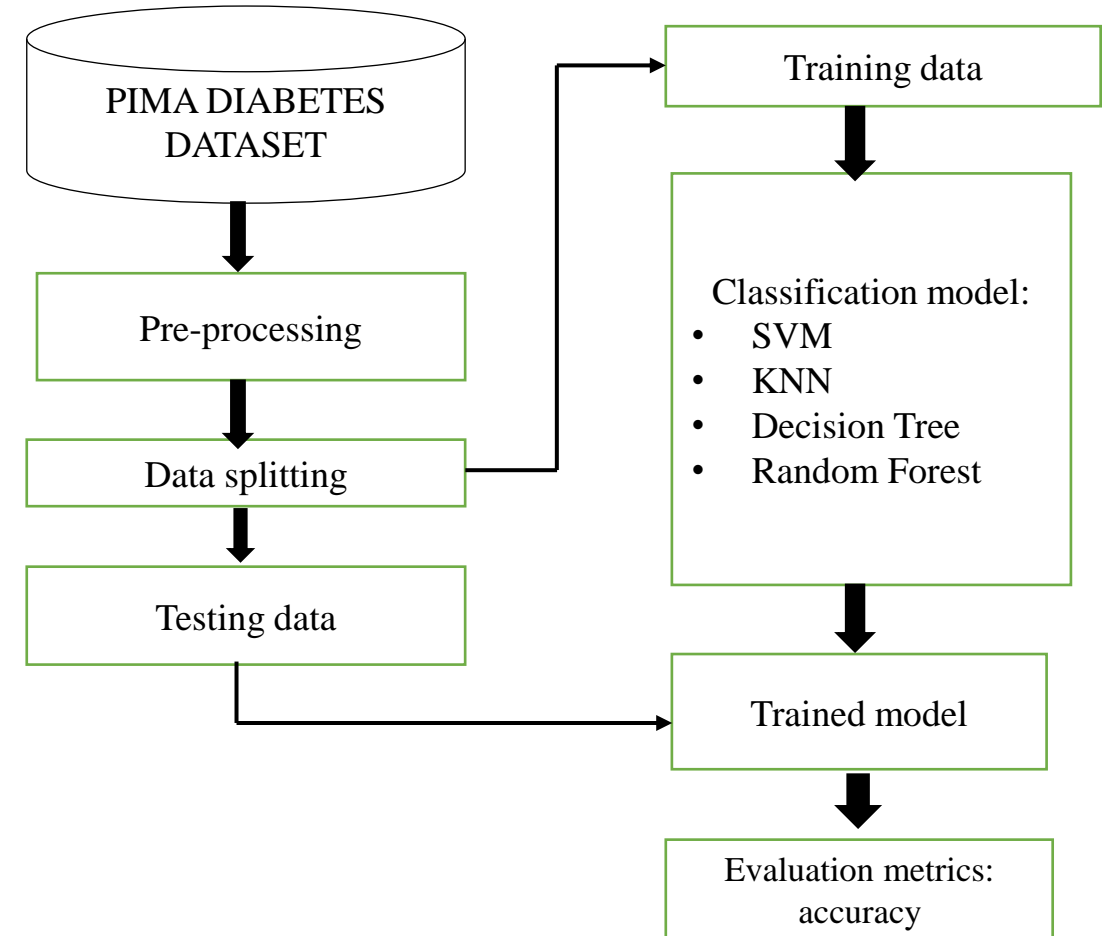Attributes: pregnancy, Glucose, Blood Pressure, Skin Thickness, Insulin, BMI, Diabetes pedigree function, Age

Steps

- Import PIMA diabetes dataset and import all the libraries.
- Data pre-processing
- Selecting the ML algorithm i.e. SVM,KNN,Decision Tree and Random Forest
- Testing is performed based on the given dataset.

Outcome

- Performing the comparison evaluation of experimental performance results obtained for each classifier.
- selecting and reviewing the best performing algorithm.

Work Flow

PIMA DIABETES DATASET

Pre-processing

Data splitting

Testing data

Training data

Classification model:
- SVM
- KNN
- Decision Tree
- Random Forest

Trained model

Evaluation metrics: accuracy

Application of Fuzzy Automata Decision-Making System in Target Control

Objectives

Based on the theory of Fuzzy Automata, this research proposes the control method of FA decision system to target control, gives the FA decision system model, and gives the two-level decision algorithms.

Method & Steps

Fuzzy priority matrix is established as:

$$R = (r_{ij})_{n \times n}$$

FA decision-making control system.
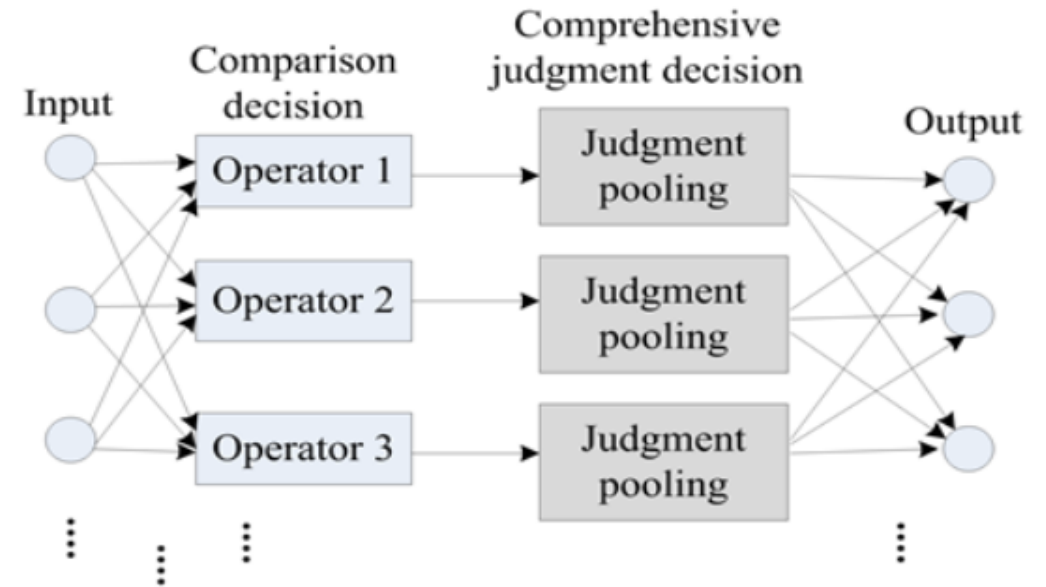
$$A(x_i) = \wedge \{r_{ij} | 1 \leq j \leq n\}, \ i = 1, 2, \cdots, n$$

Steps involve

Fuzzy Automata Target Control Method
Fuzzy Automata Binary Comparison Decision
Fuzzy Automata Comprehensive Judgment Decision-Making
Fuzzy Automata Decision Control Example and Simulation

Work Flow

FA decision-making control system.

Research outcome

Finally, the application of Fuzzy Automata decision-making system in target control is described by examples.
The simulation results show that it is faster and has better control effect for target tracking control, compared with the traditional control methods, because the control precision of the proposed Fuzzy Automata decision system.

Message Framing Impact on Behavioural Intention of the Consumer in Purchase of Organic Food

Objectives

The aim of the work is to evaluate the influence of different type of message framing in influencing consumption decision for organic food.

Research strategy

The gap was identified through bibliometric analysis from review of information gathered from the Scopus database.

Research Question: Will the use of message framing be an effective approach for influencing customer buying behaviour in the organic food sector.

Constructs identified

Health consciousness
Ethical Consciousness
Environmental concern
Subjective norms

Model

Framed message → Purchase intention

Outcome

This study gives useful insights by identifying the significance of framing effect as a critical influence which can shape and impact the purchase intention of organic food by affecting the reasoning process of consumers. The initiatives of this study propose closing the attitude-intention-behaviour gap in green consumption .
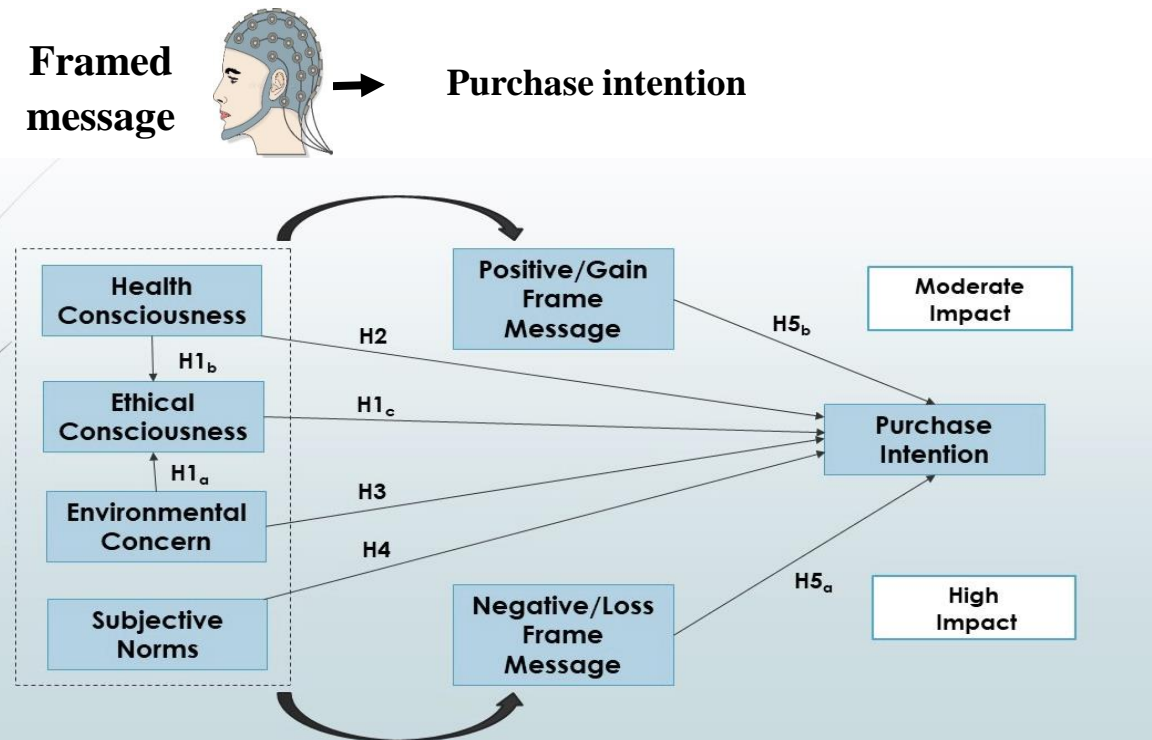
Implementation of a DSPL Using DeltaEcore Dialect

Objectives

The aim of this paper is to give a brief introduction to DeltaJava using DeltaEcore dialect and to implement a sample Software Product Line (SPL) using it
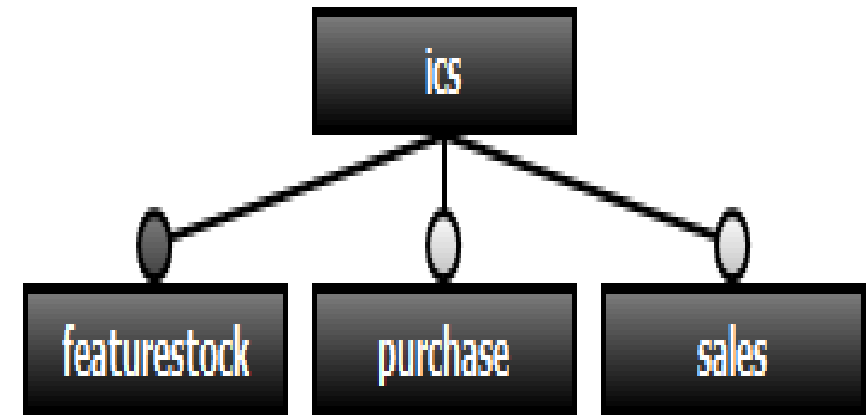
Implementation

Work Flow

Tools:

DeltaJava project is implemented in form of a set of Eclipse plug-ins which allows creating the project

Modules:
-Src folder
-Delta folder
-Decore folder
-Variant folder
-Deltajava is also having added GUI feature to create the features using a defeaturemodel. The features are further mapped with the related decore file using demapping utility.

Steps

- Creation of DeltaJava Project
- Creation of Delta Modules
- Creation of Features
- Mapping of features with related Delta Modules
- Generation of Variants

Outcome

- A part of Inventory Control System is implemented using Delta Java with DeltaEcore using Java as the source language
- Using the DeltaEcore dialect variants can be generated conveniently.

Detecting Denial Of Service Attacks Using Machine Learning Algorithms

Objectives

The aim of the work is to determine attacks scenario using real time datasets and the performance analysis is being performed using machine learning algorithms such as logistic regression and naïve bayes.

Dataset Used

CAIDA 2007 Dataset
No of distinct IP address used: 20,090
Time Duration: Every 10 seconds gap

Steps

- Collection of CAIDA 2007 dataset.
- Throughput Threshold Calculation.
- Building ML model.
- Performance Analysis to Detect Attack Scenario.

Outcome

- Able to differentiate between attack and normal scenario by proposing mathematical model.
- Using machine learning model , performance of logistic regression algorithm fetched good results.

Work Flow
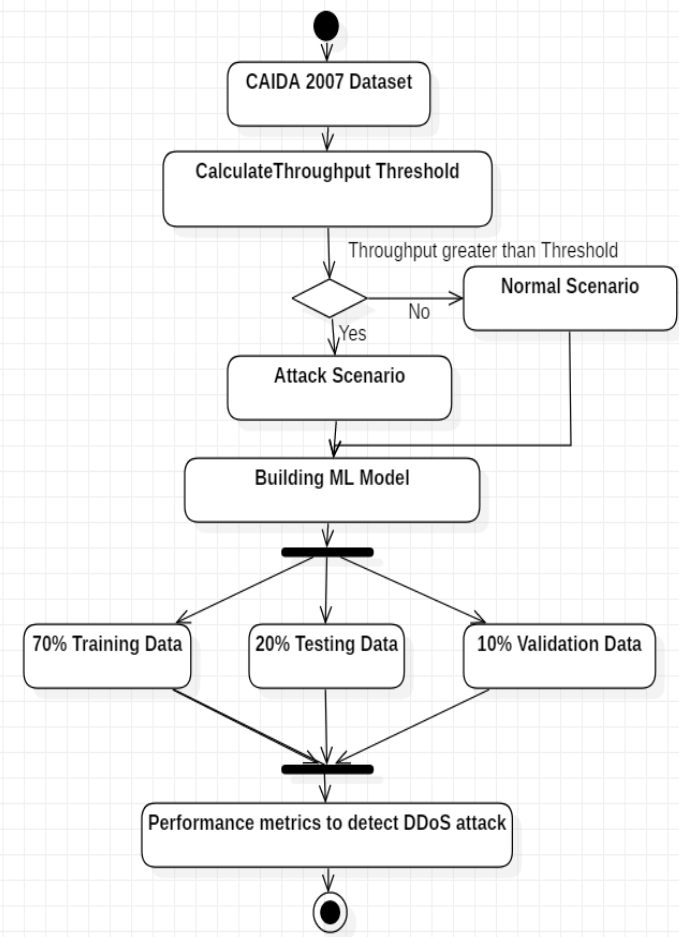
A Framework For Analysis Of Incompleteness And Security Challenges In IOT Big Data

Objectives

The aim of the work is to deal with veracity as it is the need of an hour and therefore, the work in this paper is categorised into Analysis, Observation , Proposing model and testing its accuracy and performance.

Dataset Used

WALMART Dataset
No of tuple used for analysis : 421571
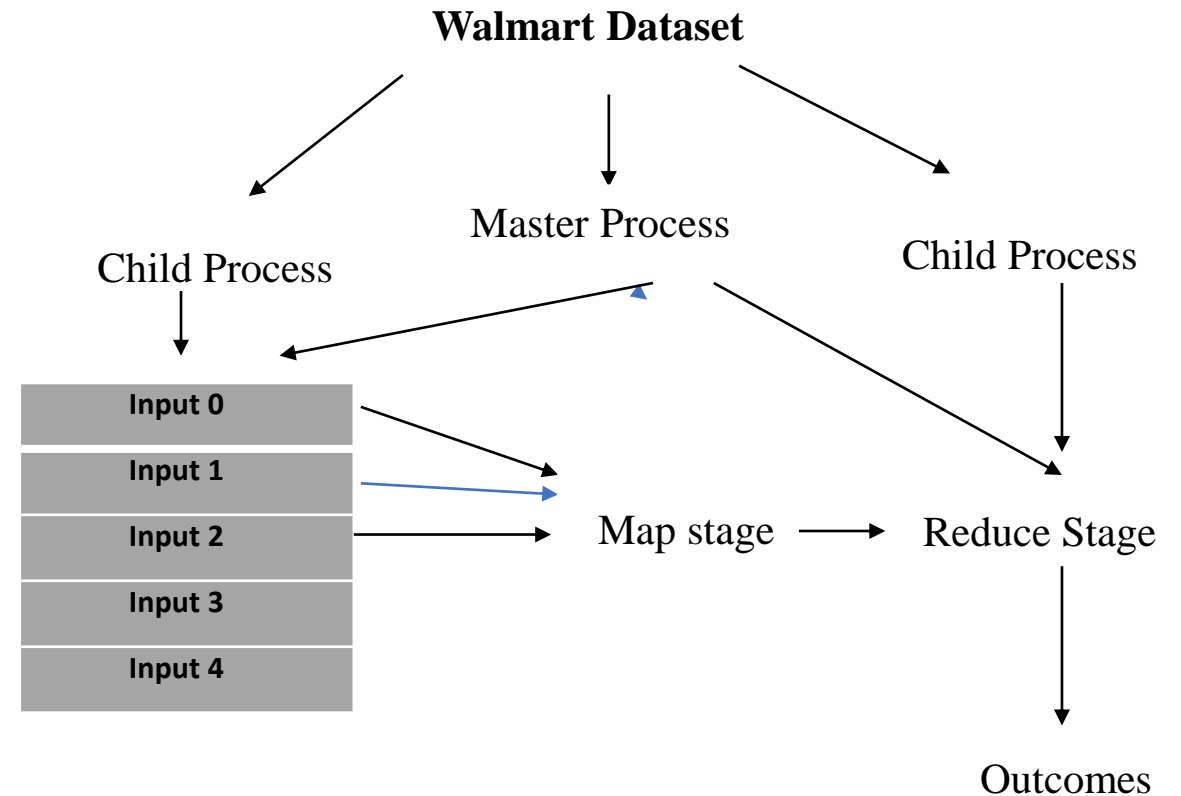No of stores surveyed : 45

Steps

- Collection of Walmart dataset.
- Usage of Map function on the dataset.
- Usage of Reduce function on the dataset.
- Performance Analysis of the proposed model using various ML algorithms.

Outcome

- MapReduce Techniques are successfully to deal with clusters of Walmart dataset.
- Logistic Regression fetched good results in terms of MAE and RMSE as compared to other algorithms.

Work Flow

Walmart Dataset

Master Process

Child Process   Child Process

| Input 0 |
| Input 1 |
| Input 2 |
| Input 3 |
| Input 4 |

Map stage → Reduce Stage

Outcomes

A Theme of Smart Cities Based on IoT, Fuzzy Logic and Quantum Deep Learning Technique

Objectives

The aim of the work is to develop an intelligent Framework to address the different services of smart cities based on Quantum Deep Learning Technique.

Dataset Used

Perceive Lab:
Stimuli used: IBM Qiskit

MindBig: Quantum Convolution Neural Network

Steps

- The microcontrollers(MC) collect data from sensor networks, surveillance cameras etc.
- MC send data to Fog Computing Layer
- The Quantum Neural Recognizer (QNR) at Fog computing Layer identifies the different activities with the help of knowledge stored at Cloud Computing Layer.
- QNR works on the principle of Quantum Mechanics (QM) defined over Hilbert Space.

Work Flow

Outcome

- If the QNR finds any criminal activity anywhere, it reports to the citizen security web service from there information migrates to Mobile App namely, "Mysecurity".
- The police officers in patrolling would log to the "MYSECURITY" apps to get continuous information about the status of the city.
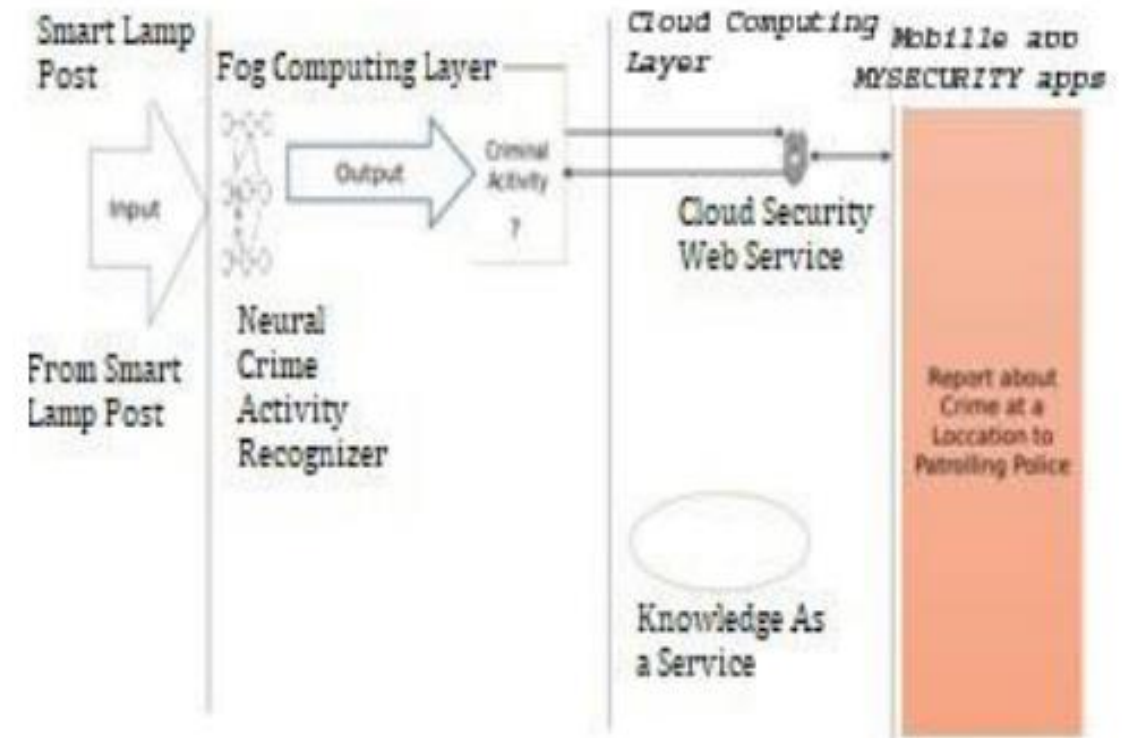
Measurement of Human Capital through Earnings Approach towards Calculating Weighted Average Cost of Capital and Economic Value Added of firms
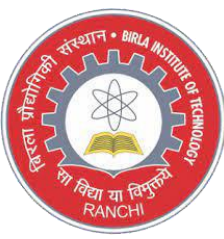
Objectives

An attempt has been made to ascertain the book value of human capital in an organization, which goes into the calculation of the weighted average cost of capital and economic value added of the firm.

Data Used

Secondary data have been used for the purpose of research

Steps

Step 1: Average earnings of the firm have been calculated
Step 2: Capitalization rate is obtained, which is the normal rate of return for the industry concerned
Step 3: When average earnings is multiplied by the normal rate of return gives the book value of human capital.

Outcomes

The capitalized value of earnings gives the total book value of the human capital. Quantifying human capital goes a long way in the calculation of the average cost of capital, which is used as a discounting factor in cash flow analysis of a firm. It also serves the calculation of economic value added of the firm, which exhibits an increase in the shareholders' fund of the firm.

Exploring Relationships Among IT Advancement, IT Assimilation, Supply Chain Capabilities and Supply Chain Performance

Objectives

Explore the direct and indirect relationships between the capabilities related to IT, and between the capabilities related to supply chain and study their effects on performance.
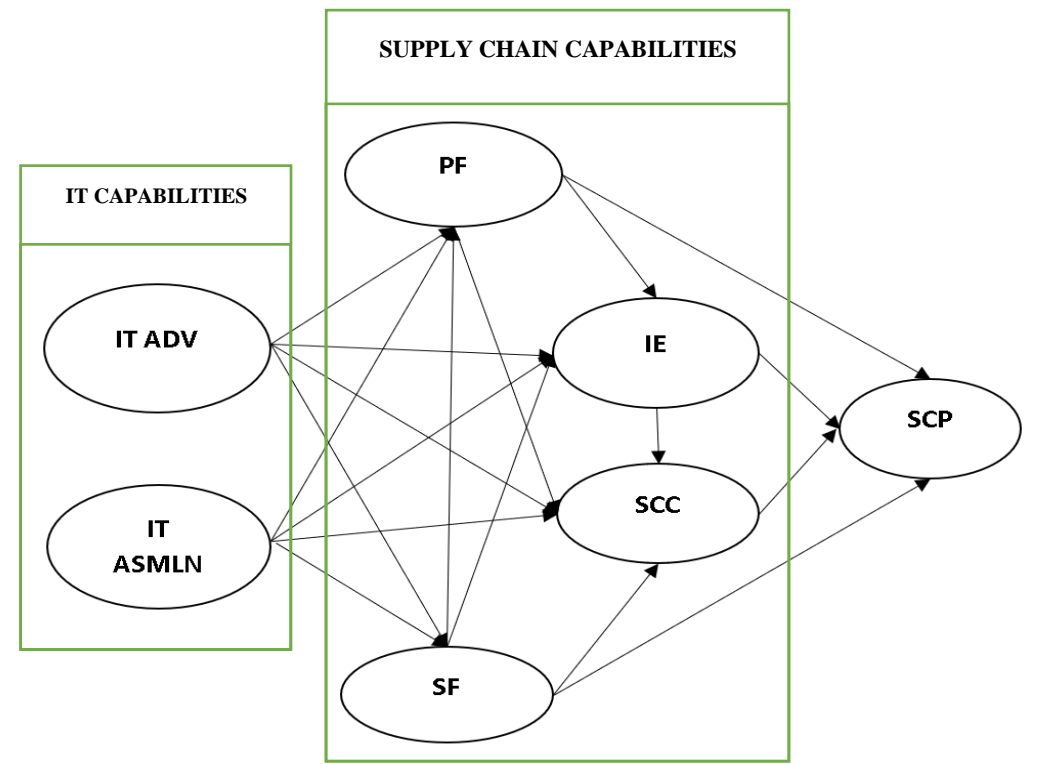
Research Methodology Adopted

- The survey employed snowball sampling technique.
- The analysis was conducted on 285 valid responses using PLS-SEM (Partial Least Square – Structural Equation Modeling) through SmartPLS 3.0.

Conclusion

- Increasing use of advanced IT leads to organizations to have access to suppliers' status on various aspects thereby offers required flexibility.
- The flexibility exhibited by suppliers was found to be an important SC capability in achieving superior SC performance.
- Information exchange and suppliers' flexibility were found to be important mediators which could be leveraged by IT advancements and IT assimilation in realizing improvements in SC coordination and SC performance.

Research Model

SUPPLY CHAIN CAPABILITIES

IT CAPABILITIES

IT ADV

IT ASMLN

PF

IE

SCC

SF

SCP

IT ADV – IT Advancement
IT ASMLN – IT Assimilation
PF – Production Flexibility
**SF** – Suppliers' flexibility

IE – Information Exchange
SCC – Supply Chain Coordination
SCP – Supply Chain Performance

Methodology

- Train the classifier in a supervised manner using labelled data
- Generate predictions for the unlabelled data with a confidence score
- For confidence scores above a threshold, add the unlabelled data with its generated label to the train set, otherwise append them to the unlabelled set
- Iterate through the steps until labels for all the data are generated with acceptable accuracy

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92
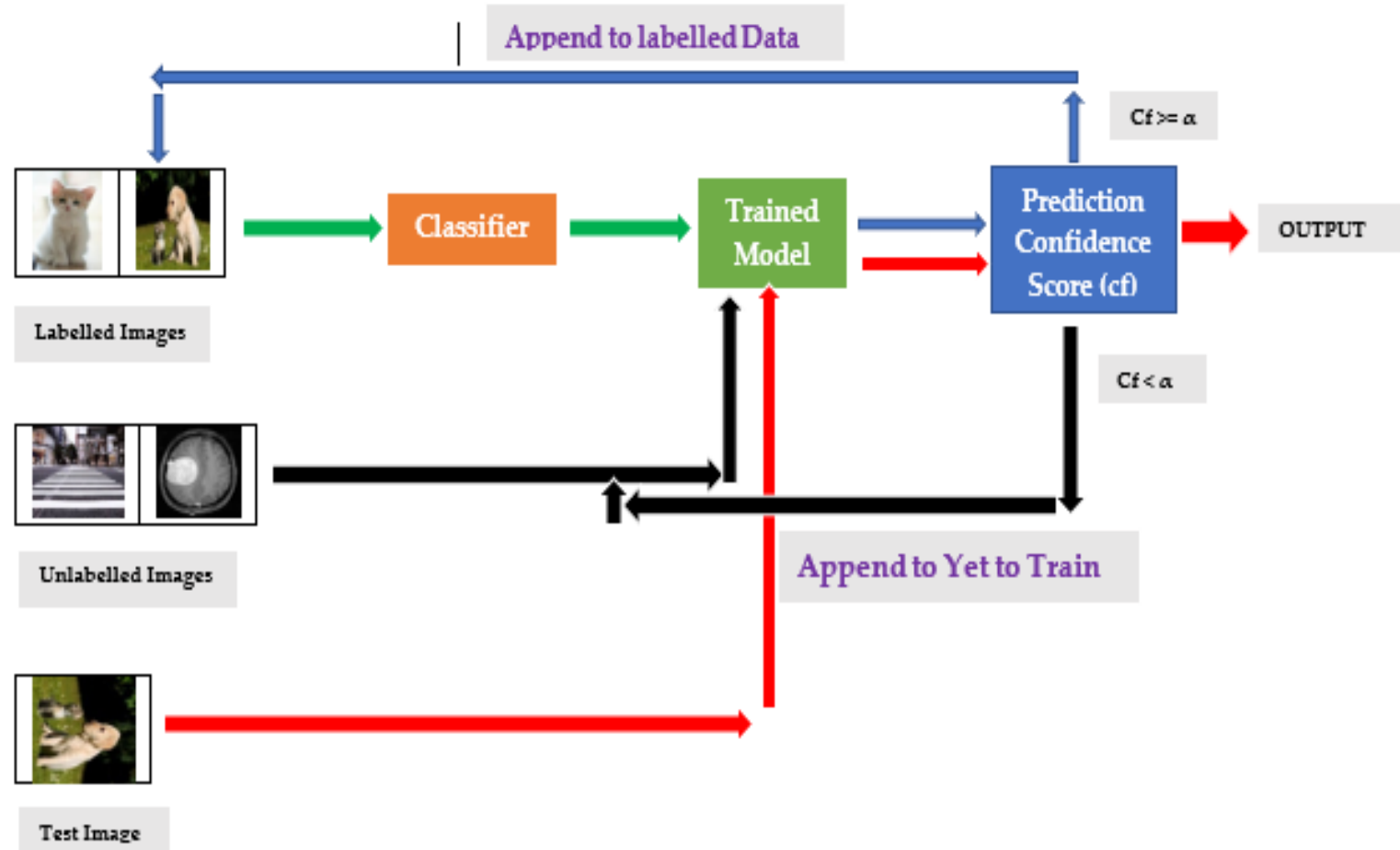
Some more glimpses of on-going research activities at the center………..
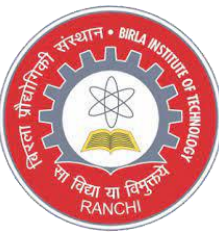
Determining components in Work Life balance of women employees in police department

Hunting Witchcraft in Jharkhand

IoT in Healthcare

Service Delivery & Technology innovation for excellence in outcome based teaching

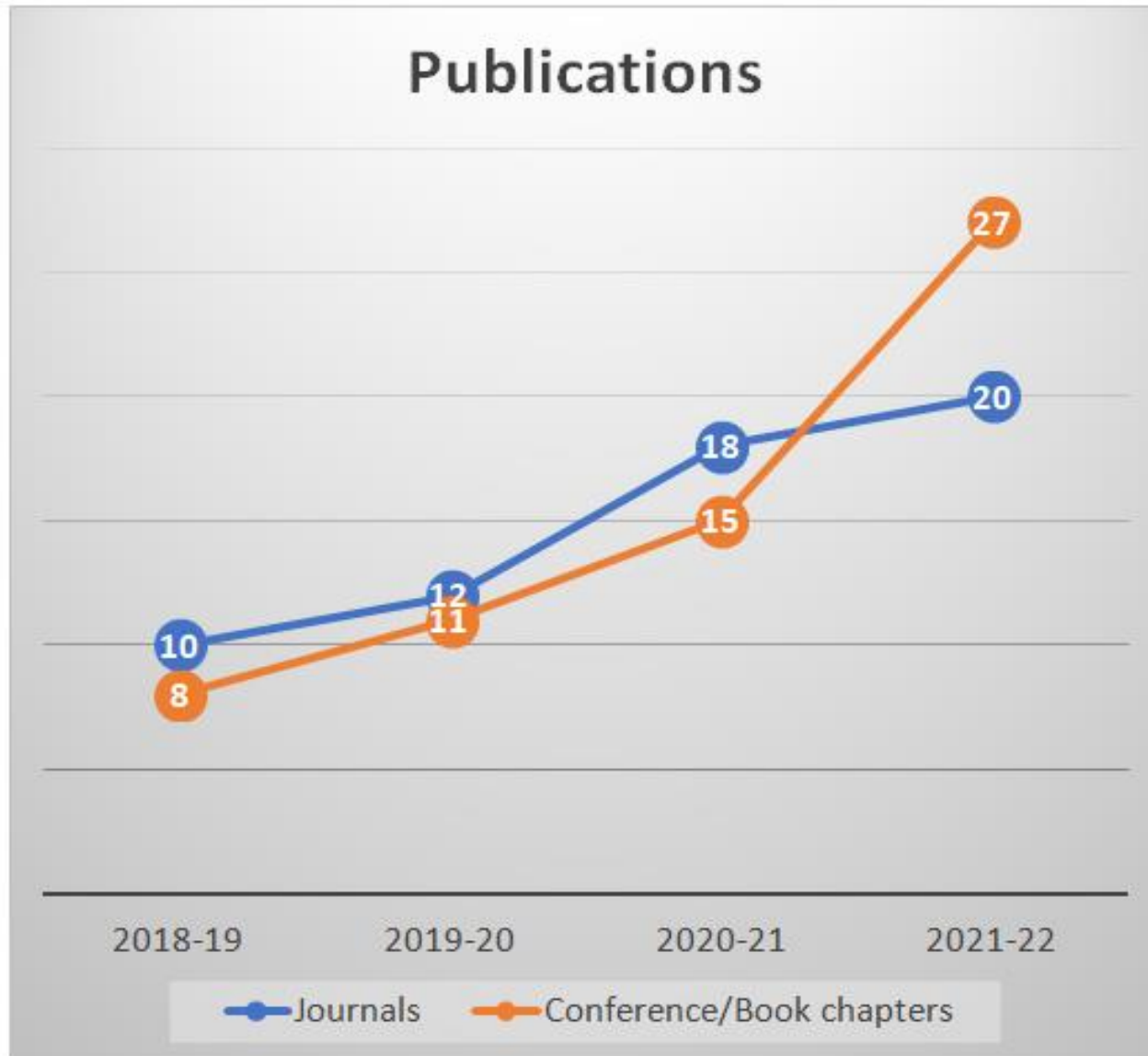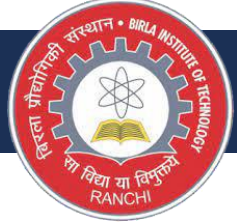**Disease prediction system using matrix factorization**

Analysis on quality of work life of nurses in the state of Jharkhand, India using data analytics tools

IoT in education

Application of transfer learning techniques for improved classifier building

The Road Ahead………..

BITECL: Growth in research output

- ➢ **Upward growth in publications indicates a positive trend…**

- ➢ **Identification of specific funding agencies vis-a-vis identified thrust areas.**

- ➢ **Designing certificate/ evening time courses targeting the local requirements**

- Infra structural Development to be completed – students' common room, food court etc.

- Renovation of Teaching Laboratories

- Urgent requirement of well trained staff members to be met

- Increased visibility by conducting workshops and seminars

THANK YOU