



# B.E.A.D.S.

BULLETIN FOR ECONOMICS, ANALYTICS AND DATA SCIENCE

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NEWSLETTER, INAUGURAL ISSUE

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CENTRE FOR QUANTITATIVE ECONOMICS AND DATA SCIENCE  
BIRLA INSTITUTE OF TECHNOLOGY, MESRA,  
RANCHI-835215

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## ABOUT THE CENTRE

The Centre for Quantitative Economics and Data Science was established in the year 2021 with the aim to provide fundamental knowledge and problem solving skills, recognising the need for better data driven decision making. The Centre focuses on disseminating the acquired knowledge towards improving analytical skills, research, and practical applications. The centre is well-equipped with facilities for advanced research in data science, economics, and quantitative analysis, providing interdisciplinary education and fostering innovation through cutting-edge methodologies and collaborative projects. Currently, the centre offers two courses: Five-Year Integrated MSc. in Quantitative Economics & Data Science as well as Doctoral programmers in various disciplines

## VISION

To become a globally recognized centre of excellence in teaching and research by producing academicians, professionals, and innovators to create a better world where a profound understanding of the field of Quantitative Economics and Data Sciences drives positive change in business and society.

## MISSION

- ◆ To set-up a world-class Quantitative Economics and Data Science centre by producing original & robust research insights, delivering high-quality & evidence-based education and engaging with people & organisations worldwide, across the private & public sectors, who are motivated to transform the world by tackling real world challenges.
- ◆ To intellectually transform students for productive and stimulating careers by providing them a strong grasp of fundamentals through a diverse living environment, exposure to new ideas and interaction with people who come from different walks of life and have evolving identities.



# ABOUT

# FROM THE EDITORIAL DESK

Dear Readers,

It is with immense pleasure and exuberance that we present the inaugural issue of the Centre for Quantitative Economics and Data Science Newsletter. This publication adds yet another avenue/platform to disseminate and celebrate the exponential development of the Centre that started its journey from September 2021 under the patronage of our Hon'ble Vice-Chancellor Prof Indranil Manna.

On one hand, the complexity and volatility of the modern global economy is evolving and leading to unprecedented challenges for sustainable policy making in the fronts of sectoral (industrial, service and financial) growth, environmental well-being and overall inclusive national development. On the other hand, the explorative availability of large-scale data, big data and advanced computation technologies have come up as an opportunity to unleash new dimensions of data analytics and inference making. The students, research scholars and faculty members at CQEDS engage in academic activities that exactly manifests the above synergy. Through this newsletter, we aim to keep you informed about the latest developments, initiatives, and success stories from our Centre and also give a glimpse of upcoming seminars, workshops, and opportunities for collaboration to be organized in the current academic year.

With every issue of the Newsletter getting published, we will gain insights from the valuable feedbacks as to what needs to be done to perform better and strive for further excellence in teaching, research and fostering innovation. Whether you are a student, faculty member, alumni, or a friend of the centre, your engagement is vital to our collective growth.

We are immensely grateful to our fellow colleagues for their enthusiastic involvement and support and most importantly to our student editorial team for their constant and consistent dedication towards designing the inaugural issue, right from pencilling to actually materializing. We sincerely believe that we will be able to successfully continue this Newsletter to be a bi-annual flagship publication that expands its horizons with every passing issue.



**Dr. Shrimoyee Ganguly**  
Editor



**Dr. Pushkal Kumar**  
Associate Editor

# EDITORIAL

## MESSAGE FROM THE HEAD



With immense pleasure, I extend a warm welcome to the inaugural edition of the Newsletter from the Centre for Quantitative Economics and Data Science (CQEDS) at BIT Mesra. Since its establishment in 2021, our Centre has been steadfast in its mission to cultivate a profound understanding of Quantitative Economics and Data Sciences, equipping individuals with the analytical acumen and problem-solving skills necessary to address real-world challenges effectively. The Centre has been envisioned as a recognised hub of academic excellence, fostering research, innovation, and transformative education. With state-of-the-art computational facilities and robust academic infrastructure, such as the Digital Innovation Lab (DIL) and Advanced Data Science Lab, CQEDS is committed to advancing knowledge and shaping future leaders in these interdisciplinary fields. This newsletter serves as a platform to share updates, achievements, and insights from the Centre, showcasing our collective efforts and aspirations. We hope it becomes a valuable resource for our readers, fostering collaboration and engagement within and beyond the CQEDS community. I want to express my heartfelt gratitude to the faculty, students, and stakeholders who have contributed to the Centre's growth and success.

**Dr. Kunal Mukhopadhyay**

Head, CQEDS

Birla Institute of Technology Mesra

Ranchi, Jharkhand-835215

# MESSAGE

## ACTIVITIES AT THE CENTRE



### MoU SIGNING

Memorandum of Understanding signing ceremony between BIT Mesra & Adrosonic for the Digital Innovation Lab at the Centre.

The MoU signing ceremony for the Digital Innovation Lab at the Centre was held on 25th May 2022 at the Institute Conference Hall, BIT Mesra. The MoU was signed between Mumbai-headquartered Adrosonic IT Consultancy Services and BIT Mesra to set up a Digital Innovation Lab that will act as a catalyst in capacity-building by focusing on emerging areas of technology. The lab is aimed to train students in cutting-edge technologies such as Robotic Process Automation, Data Science, Artificial Intelligence/Machine Learning, Augmented, Virtual reality and Cloud software. At the ceremony, hon'ble vice-chancellor Indranil Manna spoke about the importance of innovation-led growth. Adrosonic CEO Mayank shared his vision of technology and innovation-led development across multiple sectors. The MoU was signed between BIT registrar Mesra Sukhpal Singh Khetarpal and Adrosonic COO Sonal.



# EVENTS

## HYDA 2022



**The Science & Engineering Research Board (SERB)-sponsored High-End Workshop on Techniques and Applications of Hyperspectral Data Analytics** was organized by the Centre for Quantitative Economics and Data Science (CQEDS), Birla Institute of Technology (BIT), Mesra, from 25th July to 7th August 2022. Dr. Manish Kumar Pandey, the event organizer, emphasized the workshop's goal of bridging the gap in Space Science research in India, particularly in Hyperspectral Data Analytics.

Participants included students from IITs, NITs, and Central Universities across India. Renowned experts delivered sessions on diverse topics, including:

Dr. Lokesh K Sinha (Ex-Director, DGRE), Dr. Rabi Narayan Sahoo (IARI), Dr. V. S. Rathore (BIT Mesra), Dr. Mili Ghosh Nee Lala (BIT Mesra), Dr. Amit Kumar (Central University of Jharkhand), Dr. Dileep K. Singh (BIT Mesra), Dr. Prem Chandra Pandey (Shiv Nadar University), Dr. Manika Gupta (Delhi University), Dr. Jit Mukherjee (BIT Mesra), Dr. Prashant K. Srivastava (BHU), Dr. Parthsarthy Mukhopadhyay (IITM, Pune), Dr. Himanshu Govil (NIT Raipur).

The workshop concluded with a valedictory session, where Vice-Chancellor **Prof. In-dranil Manna** highlighted the importance of a data-centric approach in addressing 21st-century challenges. The event was sponsored by SERB under the **Accelerate Vigyan Scheme**.

## HYDA 2023



**Science & Engineering Research Board (SERB)** sponsored Four Weeks Training and Skill Internship VRITIKA, "Hyperspectral Data Analytics" Sponsored by SERB-DST, was Organised by Centre for Quantitative Economics and Data Science, Birla Institute of Technology from 3rd July 2023 to 30th July 2023.

# EVENTS

## CHAIRMAN VISIT, 2023



The Honourable **Chairman C.K. Birla** visited the Centre and interacted with the Faculty members and Students on 1st October 2023. He was briefed about the research and teaching areas of the faculty members and the state of the art facilities being developed at the centre. He keenly observed the developments of the **Advanced Data Science Lab sponsored by SBI** and the **Digital Innovation Lab sponsored by Adrosonic**. The Centre started incorporating changes and improvements as per the valued suggestions given by the Chairman.



# EVENTS

# ONE DAY NATIONAL WORKSHOP ON DATA ANALYTICS FOR EFFICIENT DECISION MAKING



The Centre for Quantitative Economics and Data Science at Birla Institute of Technology, Mesra, organized a one-day national workshop on data analytics for efficient decision-making in collaboration with the Administrative Staff College of India, Hyderabad. The workshop took place on January 7, 2024, and was inaugurated by Hon. Vice Chancellor of BIT Mesra, Prof. Indranil Manna. Prof. Manna emphasized the importance of leveraging data generated from various agencies to make informed decisions that positively impact communities, academia and industries. The chief guest for the event, Shri Madan Mohan Bariar of Jharkhand Rajya Gramin Bank, discussed the significance of data generated by the banking sector and its potential for improving banking services. Head of the Centre for Quantitative Economics and Data Science, Prof Kunal Mukhopadhyay gave the welcome address. The convener of the workshop Dr Manish Kumar Pandey said that the workshop was aimed to raise awareness among working professionals in multidisciplinary domains about the incorporation of Data Analytics into their day-to-day decision-making processes.



# EVENTS

## 1ST ANNUAL QEDS CONFERENCE, 2024

The 1st Annual QEDS Conference 2024 themed, **“Data driven Analytics in Contemporary Economics and Business”** was organised by the Centre for Quantitative Economics and Data Science (CQEDS), Birla Institute of Technology, Mesra for two and a half-days between 5th March-7th March, 2024.



The conference showcased contemporary developments in various sub-disciplines of Economics, Statistics and Data Science. The inaugural session was held in the presence of Vice Chancellor of BIT Mesra, Professor Indranil Manna, Professor Rahul Mukherjee, the National Science Chair at IIM Calcutta, Professor Partha Ray of NIBM, Pune, Professor Mousumi Dutta of Presidency University, Kolkata and Head of the Centre, Professor Kunal Mukhopadhyay. The conference meticulously planned by the faculties of the Centre as members of the Organising committee led by Dr. Shrimoyee Ganguly as the Convenor, featured plenary lectures and invited talks by distinguished scholars personalities in the fields of Economics, Statistics and Data Science. The inaugural plenary lecture by Professor Rahul Mukherjee, delivered a talk on Block Likelihood Inference based on effective sample size that is computationally feasible alternative to full likelihood inference for large correlated datasets. Professor Partha Ray described the evolutionary journey of non-performing assets (NPA) in the Indian banking sector between 2008-09 till 2019-20.

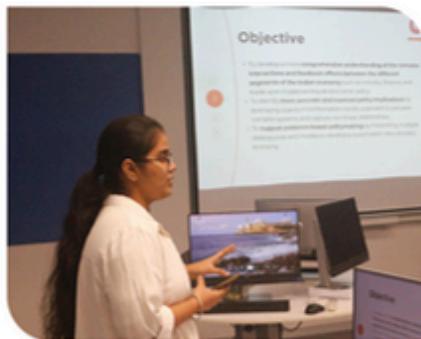


# EVENTS

## INTERNATIONAL DATA SCIENCE & ENGINEERING CONCLAVE



The International Data Science & Engineering Conclave, organized by the Center for Quantitative Economics and Data Science in collaboration with Adrosonic was organized on 21st-22nd October, 2024. The event, which is part of the platinum jubilee celebrations of Birla Institute of Technology, Mesra. The event included guests from different industries as well as academia. Some of them are: Mr. Mayank, MD & CEO - Adrosonic; Mr. James Fairgrieve, Head of Innovation - Aventum Group; Mr. Matt Pesce, CMO & GM - USA, Adrosonic, Ms. Sonal, COO - Adrosonic; Mr. Sameer Arora, Director - Finance - Adrosonic; Mr. Neeraj Kumar, Director - Quality Engineering Services - Adrosonic & alumni of BIT Mesra. The Conclave also marked the launch of a white paper titled AI Insurance Unleashed: Redefining Insurance with Language Models. This whitepaper serves as a technical reference for the enterprise-level solution developed jointly by Digital Innovation Lab, Adrosonic, and Aventum Group, which leverages the capabilities of Large Language Models (LLMs) to transform the insurance sector. At the event, students from various domains also presented their projects to the leadership team of Adrosonic.

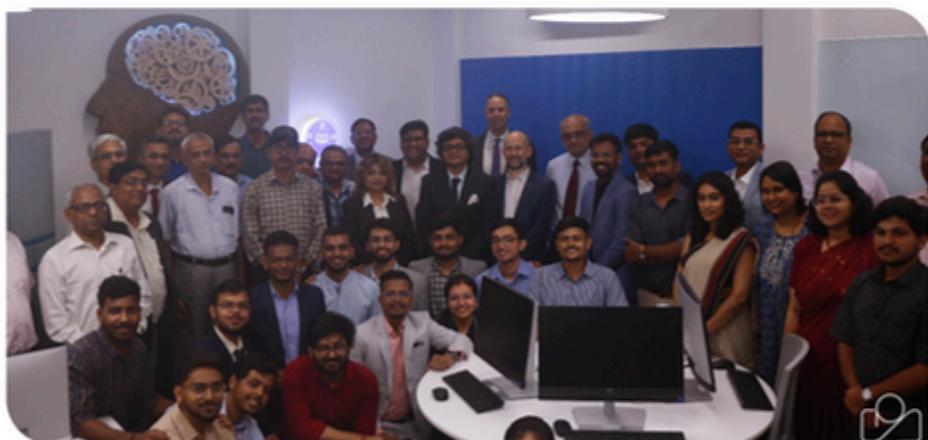


# EVENTS

## INAUGURATION OF THE DIGITAL INNOVATION LAB



The Digital Innovation Lab was inaugurated by Prof. Indranil Manna along with Mr. Mayank by cutting the ribbon. The lab, fully funded by Adrosonic, features 20 high-end all in one systems powered by Azure Machine Learning softwares for Data Analysis along with high end meeting and video conferencing facilities. Research support for different areas such as Quantum Computing, Hyperspectral Data Analytics, Insurtech and Fintech solutions, Data Engineering Solutions and Precision Agriculture use cases are available and the infrastructure with cloud hosting support is also available.



# EVENTS

## CHAIRMAN VISIT, 2024



The Honourable Chairman, C.K. Birla, visited the Centre on 16th November 2024, where he engaged with faculty members and students. During his visit, he was apprised of the successful completion of the Advanced Data Science Lab and the Digital Innovation Lab. Our faculty members guided him through the state-of-the-art facilities at DIL, showcasing their innovative design and application.

Chairman Birla also observed a presentation of small-scale prototypes developed by the students. He shared his insightful suggestions for their improvement, providing valuable guidance and encouragement. His visit and words of support have inspired the Centre to strive for even greater achievements in the future.



# EVENTS

## NOTABLE VISITS TO THE CENTRE



**Prof. Gopal Basak,**  
ISI Kolkata  
10th June 2022 -12th June 2022



**Prof. Lokesh Kumar Sinha,**  
Ex Director Defence Geological Re-  
search Establishment  
27th July 2023



**Dr. Shubhajit Chakrabarty,**  
Louisiana State University  
3rd January 2023



**Dr Manika Gupta,**  
Professor, Delhi University and Collab-  
orator, NASA Jet Propulsion Laboratory  
5th August 2022



**Dr P G Diwakar,**  
ISRO Chair Professor, NIAS (Online):  
25th July 2023

# NOTABLE VISITS



**Prof. R. N Sahoo,**  
Principal Scientist, IARI, New Delhi  
28th July 2022



**Dr. Himanshu Govil,**  
Department of Applied Geology, NIT  
Raipur  
6th August 2022



**Dr Randall Perrey,**  
Chief Software Engineering Officer at  
ADROSONIC  
19th April 2023



**Dr Amit Kumar,**  
Central University of Jharkhand  
26th July 2023



**Dr Parthsarathi Mukhopadhyay**  
Senior Scientist IITM Pune  
1st August 2022



**Dr Prashant K. Srivastava,**  
Professor, IESD BHU and Collaborator,  
NASA Jet Propulsion Laboratory 3rd  
August 2022



**Mr Vikas Dugesar,**  
IESD, BHU  
30th July 2023



**Dr Prem Pandey,**  
Shiv Nadar University  
27th July 2023



**Dr Rahul Mukherjee,**  
National Science Chair, IIM Calcutta  
5th-6th March, 2024



**Dr K. V. Satish,**  
IESD, BHU  
29th July 2023



**Dr Anup Dewanji,**  
ISI Kolkata  
6th-8th March, 2024



**Dr Animesh Mukherjee,**  
IIT Kharagpur  
7th March 2024



**Dr Partha Ray,**  
Director, NIBM, Pune  
5th March, 2024



**Dr Mousumi Dutta,**  
Presidency University  
5th-6th March, 2024



**Dr Vimal Kumar,**  
IIT Kanpur  
6th March, 2024



**Mr Mayank,**  
MD & CEO, Adrosonic  
21st-22nd October, 2024



**Miss Sonal,**  
COO, Adrosonic  
21st- 22nd October 2024



**Mr James Fairgrieve,**  
Head of Innovation, Aventum Group  
21st-22nd October, 2024



**Mr Neeraj Kumar,**  
Director - Quality Engineering Services - Adrosonic  
21st-22nd October, 2024



**Mr Matt Pesce,**  
CMO, Adrosonic  
21st- 22nd October, 2024



**Mr Sameer Arora,**  
Managing Partner, ATMS & Co.  
Director Finance, Adrosonic  
21st-22nd October, 2024

# RESEARCH SCHOLARS' CORNER



**Anirban** is working on Explainable AI for Hyperspectral Image Processing, this is to enhance transparency and trust by providing interpretable insights of complex models used for analyzing hyperspectral data.

**Neeraj K Maurya** is working in the area of climate change assessment using satellite big data analysis using a novel deep-learning model over the western Himalayas to assess climate change with elevational gradient.



**Parth Surydhwaj** is working in the area of Explainable AI, towards decoding the mechanism of Deep Learning models in the field of natural language processing. He's also a part of the industry-academia program at Digital Innovation Lab, where he works with the industry, delivering AI/ML solutions to Adrosonic and its clients.

**Kajal Kumari** is working on assessment of flood damage severity, economic growth dynamics and relief fund allocation in the districts of Bihar using a non-parametric approach. The study investigates the impact of recurrent floods in Bihar, focusing on year-wise and district-wise damage patterns, spatial clustering of damage, the linkage between flood-led damage and growth, and an evaluation of the state's relief fund measures.



# RESEARCH



**Swati Chaurasia** is working on the budget allocation problem under interval uncertainty, focusing on distributing resources among competing projects when costs, benefits, or returns are not precisely known but fall within specific ranges. The goal is to optimize criteria like maximizing returns or minimizing costs while adhering to a budget constraint, often using robust optimization or scenario-based analysis to manage uncertainty effectively.

**Bhola Mahto** is working in the area of "Interpretability and Explainability in Hyperspectral medical images" (HMI). This Study aims to revolutionize the field of medical diagnostics by leveraging cutting-edge imaging technologies to extract rich, spectral data from biological tissues.



**SK Habibul Rahaman** is working in the area of "Satellite Data Assimilation in the WRF Model through Deep Learning ". This study aims to enhance the accuracy of the forecasting model.

# RESEARCH

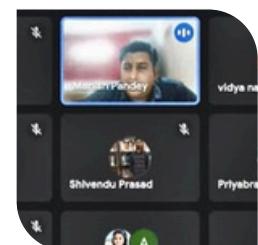
## 2022

Satish, K.V., Dugesar, V., Pandey, M.K., Srivastava, P.K., Pharswan, D.S., and Wani, Z.A (2022). Development of forty-nine novel earth observation variables (NEOVs) for improving species distribution models in the Himalaya. figshare.

Dataset. <https://doi.org/10.6084/m9.figshare.20049125>



Dugesar V, Satish KV, Pandey MK, Srivastava PK, Petropoulos GP, Anand A, Behera MD. Impact of Environmental Gradients on Phenometrics of Major Forest Types of Kumaon Region of the Western Himalaya. Forests. 2022; 13(12):1973. [Add a subheading](#). (I.F. 3.282)



## 2023

Pandey, M. K., & Subbiah, K. (2023). A Deep Learning Approach for Classification of Medicare Beneficiaries Based on Gender and being Affected with Cancer. Procedia Computer Science, 218, 532–541. <https://doi.org/https://doi.org/10.1016/j.procs.2023.01.035> (I.F. NA)

Satish, K.V., Vikas Dugesar, Manish K. Pandey, Prashant K. Srivastava, Dalbeer S. Pharswan, and Zishan Ahmad Wani. 2023. "Seeing from Space Makes Sense: Novel Earth Observation Variables Accurately Map Species Distributions over Himalaya." Journal of Environmental Management 325 (January): 116428. [Add a subheading](#). (I.F. 8.91)

Kumar, P., Aishwarya, Srivastava, P. K., Pandey, M. K., Anand, A., Biswas, J. K., Drews, M., Dobriyal, M., Singh, R. K., De la Sen, M., Singh, S. S., Pandey, A. K., Kumar, M., & Rani, M. (2023). Nitrogen dioxide as proxy indicator of air pollution from fossil fuel burning in New Delhi during lockdown phases of COVID-19 pandemic period: impact on weather as revealed by Sentinel-5 precursor (5p) spectrometer sensor. Environment, Development and Sustainability. <https://doi.org/10.1007/s10668-023-02977-9> (I.F. 4.080)



Vikas Dugesar, Manish K Pandey, Prashant K Srivastava, George P. Petropoulos, Sanjeev Kumar Srivastava & Virendra Kumar Kumra (2023) Performance Assessment of the Sentinel-2 LAI products and data fusion techniques for developing new LAI datasets over the high-altitude Himalayan forests, Geocarto International, <https://doi.org/10.1080/10106049.2023.2247380> I.F. 3.45)

'Bose, Saheli. and V. Mukherjee, Welfare Benefits and Personal Connections in a Democracy: The Case of Muslims in West Bengal' , Journal of South Asian Development, (2023) <https://doi.org/10.1177/09731741231207540>'



## 2024

Ankanksha Kumari, Ujala Ahuja, Manish Kumar Pandey, Anupam Roy, Optimizing whole grain rice fortification using microwave-assisted screw conveying spraying and drying setup: Exploring solution absorption, gelatinization, and micronutrient retention, Food Chemistry, Volume 468, 2025, 142455, ISSN 0308-8146, <https://doi.org/10.1016/j.foodchem.2024.142455>

Bose, Saheli and Somdeep Chatterjee, 'Motherhood Penalty Revisited: Impacts of Maternity Leave Mandates on Nature of Employment Contracts', Journal of Development Studies (2024) <https://doi.org/10.1080/00220388.2024.2348548>



Jaiswal, R., Shekhar, H., Gupta, S., Payra, S., Kumar Pandey, Manish, and Verma, S.: "Assessing The Impact of Land Use Changes on Pm2.5 Concentrations: A Geographically Weighted Regression Approach ", EGU General Assembly 2024, Vienna, Austria, 14-19 Apr 2024, EGU24-16601, <https://doi.org/10.5194/egusphere-egu24-16601>, 2024.



Acharyya, Rajat and Ganguly, Shrimoyee, (2024) "International Trade and Uneven Gains" in "Growth, Development and Productivity: 75 Years of Indian Experiences", Ed by Krishna, K. L, Goldar B. and Maiti, D., Springer. The book (pre-print version) was released on the occasion of the Delhi School of Economics Diamond Jubilee on 16th August 2024.

# PUBLICATIONS

Ganguly, Shrimoyee and Acharyya, Rajat, (2024) "Trade and Factor Prices under Heterogeneous Sector-specific Skill adapting Ability" Economic and Political Weekly (EPW), Special article, Vol. 59, Issue No. 42, 19 Oct, 2024



Chabe, Shshank; Singh, MK; Pant, Sangeeta; Kunar, Anuj; Jana, Mrinal; Kotecha, Ketan; Abraham, Ajith. Probabilistic Hesitant Bifuzzy Set and its Application in Risk Assessment. Journal of Multi-Valued Logic and Soft Computing 43 (2024): 395-423

Koley, Tamalika; Jana, Mrinal; Basak, Gopal Krishna. Simultaneous Confidence Intervals for Multi-way Clustered Stock Return Data. Computational Economics (2024). <https://doi.org/10.1007/s10614-024-10758-3>



Kumari, K., Koley, T., & Dutta, Tina. (2024). Assessment of flood damage severity, economic growth dynamics and relief fund allocation in the districts of Bihar: A non-parametric approach. International Journal of Disaster Risk Reduction, 105047. <https://doi.org/10.1016/j.ijdrr.2024.105047>



Kedia, K., Dutta, Tina, Sharma, K., Thaker, D. (2024). A Systematic Review of Technical Analysis-Based Forecasting Techniques: Global v/s Indian Perspectives. Journal of Informatics & Education Research for Finance, Mortgages and Insurance, 4(2), 258-288. DOI: <https://doi.org/10.52783/jier.v4i2.768>



GP Mishra, KL Mishra, SS Pasumarti , D Mukherjee , A Pande (2024) "Spurring organisation performance through artificial intelligence and employee engagement: an empirical study". Book name: The role of HR in the transforming workplace.

# PUBLICATIONS

# RESEARCH SPECIALIZATIONS



# WORD CLOUD

# COMPLETED/ONGOING PROJECTS

**The Science and Engineering Research Board (SERB)** sponsored High-End workshop (KARYASHALA) on "Techniques and Applications of Hyperspectral Data Analytics" from 25th July 2022 to 7th August 2022. (Sanctioned Amount - **INR 5,00,000**), File No. SERB/F/2470/2022-2023 dated 04-Jul-2022, Status: Completed by Dr. Manish Kr. Pandey as Event Organiser

**Birla Institute of Technology, Mesra, India, Sponsored** SEED MONEY SCHEME for "Development and Validation of Graph Optimization Based Multi-Sensor Fusion Algorithm to Establish Real-Time Connections between Climatic Variables in Himalayan Ecohydrological Process Networks for Future Climate Projections." File No. DRIE/SMS/DRIE-21/2022-23/4067 from September 2022 to August 2024. (Sanctioned Amount - **INR 5,00,000**), Status: Ongoing, Role: - Dr. Manish Kr. Pandey as PI



**The Science and Engineering Research Board (SERB)** sponsored CRG entitled, "Microwave satellite data assimilation in Weather Research & Forecasting model through deep learning for improved forecasting of surface and sub-surface soil moisture conditions", File No. CRG/2022/006070, from March 2023 to February 2026. (Sanctioned Amount - **INR 25,41,240/-**), Status: Ongoing, Role: - Dr. Manish Kr. Pandey as Co-PI

**The Science and Engineering Research Board (SERB)** Sponsored 4 weeks Training and Skill Internship (VRITIKA) on "Hyperspectral Data Analytics" from 3rd July 2023 to 30th July 2023. (Sanctioned Amount - **INR 1,50,000.00**), File No. SERB/F/1403/2023-2024 dated 22-May-2023., Status: Ongoing, Role: - Dr. Manish Kr. Pandey as Event Organizer

# PROJECTS



**Birla Institute of Technology, Mesra, India**, Sponsored SEED MONEY SCHEME for "An Assessment of Multidimensional Impacts of Floods in Madhubani District of Bihar and Exploring Sustainable Strategies to Mitigate its Overall Impact"; Amount: **Rs. 5 lakh**, Status: Ongoing, Role: - Dr. Tina Dutta as PI

**South Asian Network for Development and Environmental Economics (SANDEE), ICIMOD-** USD 25000.00 (**INR 2070000.00** approximately) on "Behavioural responses and the impact of environmental knowledge of ponds: Evidence from field experiment in India"- 2 years Status: Ongoing, Role: - Dr. Saheli Bose as PI



**Indian Council of Social Science Research Collaborative Research Proposals on Longitudinal Studies in Social and Human Sciences (INR 20000000.00)** on "Tracing the Transition: A Longitudinal Study of Skilling and Labor Market Outcomes of Indian Youth in Orissa, Jharkhand, Telangana and West Bengal" Status: Ongoing, Role: - Dr. Saheli Bose as Joint Co-PI

# PROJECTS

# PRESENTATIONS AT CONFERENCES/SEMINARS

## 2022



Dr. Manish Kumar Pandey presented "**A Deep Learning Approach for Classification of Medicare Beneficiaries Based on Gender and being Affected with Cancer**" in International Conference on Machine Learning and Data Engineering (ICMLDE 2022) organized by the School of Computer Science, University of Petroleum & Energy Studies, India in association with the University of Dayton, Ohio, U.S.A. on 7th -8th September 2022

## 2023

Dr. Shrimoyee Ganguly presented the paper "**Does Fed's Inflation-Targeting Policy Worsen Income Inequality in EMEs?**" at the 20th Macroeconomic and Finance Conference 2023 organised by Indira Gandhi Institute of Development Research (IGIDR), Mumbai during December 14-16, 2023.



Dr. Shrimoyee Ganguly presented the paper "**Trade Liberalization, Infrastructure Development and Export Quality: Cross-Country Evidence**" at the Fourth International Conference on "Issues in Economic Theory and Policy" organised by Economics Department, Presidency University, Kolkata during December 27-28, 2023.

# CONFERENCES

Dr. Saheli Bose presented the Paper **“Peer effects in household waste disposal: Evidence from India”** online at International Water management Institute on 19th September, 2023.

Dr. Saheli Bose presented the Paper **“Political competition and access to public goods: Evidence from India”** at International Conference on “Economic Development and Public Policy in India” organized By Department of Economics, University of Kalyani in August 2023.

Dr. Saheli Bose presented the Paper **“Mandated Increases in Maternity Leaves and the Motherhood Penalty: New Evidence from India”** at 18th Annual Conference on Economic Growth and Development to be held at ISI Delhi on 18 - 20 December 2023

## 2024

Dr. Shrimoyee Ganguly presented the paper **“Does what you export matter for growth? The Asian story”** at the 9th International Conference on Empirical Issues in International Trade and Finance” organised by Indian Institute of Foreign Trade (IIFT), Kolkata during December 11-12, 2024.



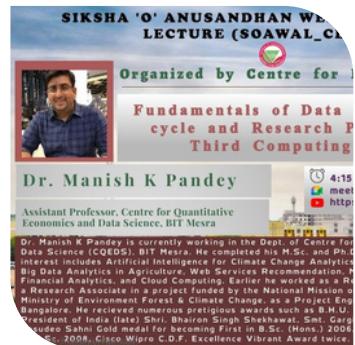
Dr. Lakshman Mahto presented the paper **“Learning algorithms for non-linear dynamical systems, control and autonomy”** at Conference on Applied AI and Scientific Machine Learning (CASML 2024) on December 14-18, 2024 in Indian Institute of Science Bangalore, India

# CONFERENCES

## INVITED LECTURES/TALKS DELIVERED

### 2022

- Dr. Manish Kumar Pandey delivered Invited Talk in the 45th Siksha 'O' Anusandhan Weekly Academic Lecture (SOAWAL) entitled "**Fundamentals of Data Science, its life cycle and Research Perspectives in Third Computing Paradigm**" on 4th June 2022.
- Dr. Manish Kumar Pandey was a keynote Speaker in the International Conference on **Machine Learning and Data Engineering** (ICMLDE 2022) held at UPES, Dehradun, India between 7th and 8th September 2022
- Dr. Manish Kumar Pandey delivered Invited Talk entitled "**Data Science for Material Science**" in SERB Sponsored one-week High-End Workshop (KARYASHALA) on 'Joining Techniques for Modern Transportation Sector' held at BIT Mesra, Ranchi between 5th Dec to 11th Dec 2022.



### 2023

- Dr. Manish Kumar Pandey delivered an Invited Talk entitled "**Data Science for Earth System Sciences**" in the National Seminar on Grand Challenges in Earth System Sciences held at IESD, BHU, Varanasi between 1st to 3rd April 2023
- Dr. Manish Kumar Pandey was Resource Person in Summer School 2023 entitled "**Data Structure and Algorithm Design**" held at Birla Institute of Technology, Mesra, between 19th June to 23rd June 2023.
- Dr. Manish Kumar Pandey delivered Invited Talk entitled "**Cliodynamics: Can Data Science decode Social Unrest for its Efficient Forecasting?**" in 14 days Refresh Course in Forecasting Social Unrest Cliodynamics organized by UGC- Human Resource Development Centre, Ranchi University, Ranchi from 7th December 2023 to 20th December 2023.
- Dr. Manish Kumar Pandey delivered a talk in live career guidance programme titled "**Aur bhi hain rahein**", on telecasted live on DD Jharkhand dated 25th October 2023 from 3:00 PM. The topic of the programme was "Career Opportunities in Quantitative Economics and Data Science".
- Dr. Tina Dutta was invited as a resource person for the five-day (10 hours) workshop cum hands-on training (online) on "**Data Visualization and Interactive Dashboards using Microsoft Power BI**" Deepak Foundation, Vadodara, Gujarat 18-25 September 2023
- Dr. Tina Dutta was invited for (online) Expert Lecture on "**Multiple Regression Analysis: Concepts and Applications**" School of Advanced Sciences and Department of Mathematics, Vellore Institute of Technology, Vellore, Tamil Nadu 8 November 2023

# INVITED TALKS

## INVITED LECTURES/TALKS DELIVERED —

### 2024

- Dr. Tina Dutta was invited as a resource person to deliver five online guest lecture sessions on **“Big Data Using Machine Learning”** Department of Biostatistics and Demography, International Institute for Population Sciences, Mumbai (Deemed University of Ministry of Health and Family Welfare) September 27- October 5, 2024;
- Dr. Tina Dutta was invited as a Trainer in the 5-Day Workshop (online) on **‘Business Intelligence and Analytics using Microsoft Power BI’** Department of Humanities and Social Sciences, Jaypee Institute of Information Technology, Noida November 18-22, 2024;
- Dr. Manish Kumar Pandey participated in the Panel Discussion on **AI's Impact on Art & Literature** in Metaphor- Lucknow Literature Festival on 14th December 2024 at CII, Vibhuti Khand, Gomtinagar, Lucknow.
- Dr. Manish Kumar Pandey delivered Invited Talk entitled **“Data Science, Machine Learning & Artificial Intelligence -Single & Multi-Variate Statistics with Python”** in 5-Day Faculty Development Program (FDP) on AI-ML for Beginners: A Project-Based Approach organized by University Polytechnic, BIT Mesra from 16th December 2024-20th December 2024.

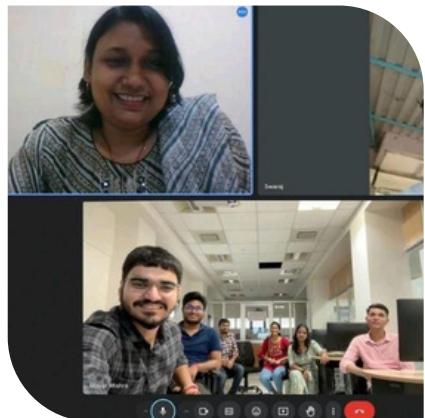


# INVITED TALKS

## INVITED LECTURES/TALKS DELIVERED —

### 2024

- Dr.Tina Dutta was invited as a resource person to deliver a session on **“Data visualization using MS Power BI”** in the “One-week National Workshop on Statistical Methods and Research Techniques (SMART)” Department of Animal Genetics and Breeding, College of Veterinary Science and Animal Husbandry, Birsa Agricultural University (A State Government University), Ranchi Session delivered on 27 July 2024; workshop duration: July 23-29, 2024;
- Dr. Tina Dutta was invited as a resource person for the three-day (12 hours) workshop cum hands-on training (online) on **“Analysing Social Science Research Data Using Python Programming”** Department of Geography, Institute of Science, Banaras Hindu University, Varanasi February 27-29, 2024
- Dr.Tina Dutta was invited as a resource person for the three-day (6 hours) workshop cum hands-on training (online) on **“Analysing Social Science Research Data Using Python Programming”** VART Consulting Pvt Ltd, Mumbai January 25-27, 2024
- Invited presentation by Dr. Shrimoyee Ganguly on **“International Trade and Uneven Gains”** at the ICSSR sponsored Conference on Special Edited Volume on “Growth, Development and Productivity: 75 Years of Indian Experiences”, published by Springer held at Delhi School of Economics (DSE) during March 7-9, 2024



# INVITED TALKS

## CHRONICLES OF ACCOMPLISHMENTS BY UG/PG STUDENTS



- Shreyas & Yaagik Maurya stood 4th in the Anwesha Quiz 2022 organized by National Statistical Office, Ranchi organized on 27th June 2022 at Project Bhawan.



- Ritik Kumar secured the 1st rank in the Internal hackathon for Kavach 2023 organized by the Innovation Cell, Ministry of Education.
- Ritik Kumar bagged the 3rd prize in the House of Hackers Hackathon 2023 organized by IIIT Ranchi.



- Nishant Sharma bagged the first prize in India in the CRCS Dashboard Hackathon (Ministry of Co-operation, Government of India). He received a Cash Prize of INR 1 Lakh from Hon. Home Minister Mr. Amit Shah.



- Nishant Sharma has pursued various internships and fellowships including MITACS Globalink Fellowship (Selected for a twelve week fully funded MITACS GLOBALINK FELLOWSHIP to do research on Machine Learning at Athabasca University, Edmonton(Canada). He also presented his research work at the 3rd Annual TRESL Lab International Symposium. Athabasca, Alberta July 12-13, 2024.

# ACHIEVEMENTS



- Sudhanshu Kumar won prize at All India Open FIDE Rating Chess Tournament 2023 (Held at Dumka, Jharkhand)



- Shreyas, Chinmay Nandan & Sahil Ritolia bagged the first rank in the regional round of RBI Policy Challenge 2023. They were further invited for the Zonal Round at the RBI Office in Kolkata along with their faculty mentor Dr. Shrimoyee Ganguly.



- Chinmay Nandan, Ashutosh Kumar, Prabhat Kumar & Pratham Shaha were ranked 2nd in the Hack 24 hackathon organized by Society for Data Science, 2024.

- Sudhanshu Kumar and Shreyas were Finalists in Maths Olympiad at Kshitij 2023 held at IIT Kharagpur[East India's biggest Tech Fest].
- Sudhanshu Kumar, Swapna Neel Paul and Shreyas were Finalists in Enigma at Kshitij 2023 held at IIT Kharagpur[East India's biggest Tech Fest].
- Chinmay Nandan & Shreyas achieved ranks 107 & 170 in the Joint Admission Test for Masters 2024 [Statistics] while Sudhanshu Kumar achieved rank 252 [Statistics] & Chinmay Nandan achieved rank 557 [Data Science] in GATE 2024. Swapna Neel Paul and Shreyas scored over 99.5 percentile and over 98 percentile in CAT 2023.
- Navneet Kumar pursued an internship at Autosky Aerospace Pvt. Ltd while Sarvagya Kulshrestha pursued an internship at Antler India for the summer break of 2024.
- Sudhanshu Kumar, as the President of a team, was runner-up in Street Play "Aagaz" at Mood Indigo 2024, the Cultural fest of IIT Bombay[Asia's biggest Cultural Fest].



- Sarvagya Kulshreshtha is a three-time Guinness World Record Holder for Speedcubing. He has a record for the fastest time to Solve a Rubik's Cube while hula hooping (15.75 Seconds).The second record is the fastest time to solve a Rubik's Cube on a bicycle (12.90 Seconds).The third record he broke was the Fastest Time to Solve a Pyraminx while Hula Hooping(5.78 Seconds).



- Sarvagya Kulshreshtha has given two TEDx talks, TEDxGIBS(Gitarattan International Business School) and TEDxIIS(Indian International School).



- Harsh Ranjan, as a part of team Rhetoric secured the 1st prize at Kurukshetra 2023 - National Parliamentary Debate Competition hosted by National University of Study & Research in Law, Ranchi.



- Parth Suryadhwaj, Harsh Ranjan, Yaagik Maurya and Navneet Kumar showcased their projects at Adrosonic's Innovation Fair at their annual event Elevate'24 at Taj Exotica, Goa to Adrosonic's employees and clients. Their project 'VISION' bagged the runners-up position among projects by the employees.



- As a part of the industry-academia collaboration between Adrosonic & Birla Institute of Technology, Mesra; Dr. Manish Kumar Pandey (Assistant Professor, CQEDS) and Navneet Kumar represented the Digital Innovation Lab at Adrosonic's event Elevate Connect at the Four Seasons Hotel, Ten Trinity Square, London on the 17th of September, 2024.



- From September 6th to 8th, 2024, as a part of BIT Mesra's team at the Defence Expo'24 (Know Your Army Exhibition), held at Morabadi Ground, Ranchi. Parth Suryadhwaj presented 'S.E.N.T.I.N.E.L' (Strategic Evaluation and National Threat Intelligence for News and Security Indicators), Navneet Kumar, demonstrated 'V.I.S.I.O.N', an AI-powered autonomous drone and Bhola Mahto presented the 'Geo-spatial Mapping Dashboard', a Web-GIS portal that enables real-time spatial data visualization and analysis.



- Institute Innovation Council, BIT Mesra had organized a field visit to the Data Centre, Jharkhand Police located at Police Headquarter, Dhurwa, Ranchi on 17th November 2023 for the students of the Centre. This visit was intended to make our students understand the intricacies of data generation from various police stations across the Jharkhand, how cyber policing works and how the data curation would be carried out.



- Pratyush Prakash Upadhyay won BIT Nishan and received 1 lakh rupees of funding. He also received an award money of Rs 10,000 by managing director of SBI and Vice Chancellor of BIT Mesra at BITOSA Kolkata chapter: Ignite innovation.



- As part of a team, Ritesh Murmu and Ashish Ranjan bagged third place in the internal Smart India Hackathon.



- Mentvisor, a startup founded by Rohit Singh, Shreya Mishra, and Aastha, achieved remarkable success by securing victory in the Business Plan competition on October 5, 2024, earning a prize of ₹10,000 for their innovative approach.
- Shubham Srivastava demonstrated exceptional skills by securing the First Runner-up position in the THINKML 2.0 Hackathon organized by ALTAIR and IETE.
- Ankur Panjwani featured on Doordarshan National Television and also secured a win at BIT Nishan 2024.
- Arnav Dash Choudhury and Anoushka Aditi showcased their analytical prowess by securing the prestigious National Runners-up title in the EY CAFTA 2024 Case Study Competition under the Risk Management & Compliance stream.



- Ankur Panjwani delivered a presentation on combating plastic pollution, a multi-faceted approach, amongst 500 young entrepreneurs and securing 3rd position in Snap and Solve in IIM Bangalore's YEP 2024.

## Faculty Members



**Dr. Kunal Mukopadhyay**

Head of the Center



**Dr. Manish Kumar Pandey**

Assistant Professor  
Data Science



**Dr. Pushkal Kumar**

Assistant Professor  
Statistics



**Dr. Mrinal Jana**

Assistant Professor  
Mathematics



**Dr. Tina Dutta**

Assistant Professor  
Statistics



**Dr. Shrimoyee Ganguly**

Assistant Professor  
Economics



**Dr. Kusum Lata Mishra**

Assistant Professor  
HR development



**Dr. Saheli Bose**

Assistant Professor  
Economics

## WE WELCOME OUR NEW FACULTY MEMBERS!!

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**Dr. Lakshman Mahto**

Assistant Professor  
Mathematics



**Dr. Ashkamini**

Assistant Professor  
Statistics



**Dr. Sunny Bhushan**

Assistant Professor  
Economics



**Dr. Shreyashi Basak**

Assistant Professor  
Statistics

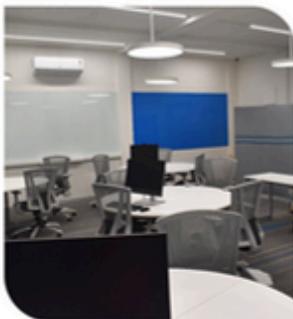


**Dr. Sumit Kumar**

Assistant Professor  
Data Science



## STATE-OF-THE-ART FACILITIES



Digital Innovation Lab (D.I.L.)



SBI Advanced Data Science Lab



QEDS Laboratory

# LABORATORIES

# UPCOMING EVENTS

**January 2025**

Fresher's Welcome K24

**February 2025**

2nd Annual QEDS Conference

**THEME-** Advances in applied and computational Mathematics

**March 2025**

Student Conclave by **EDGE**  
(Entente for Data Science and Global Economics)

**April 2025**

Frontiers of Research in Applied Econometrics

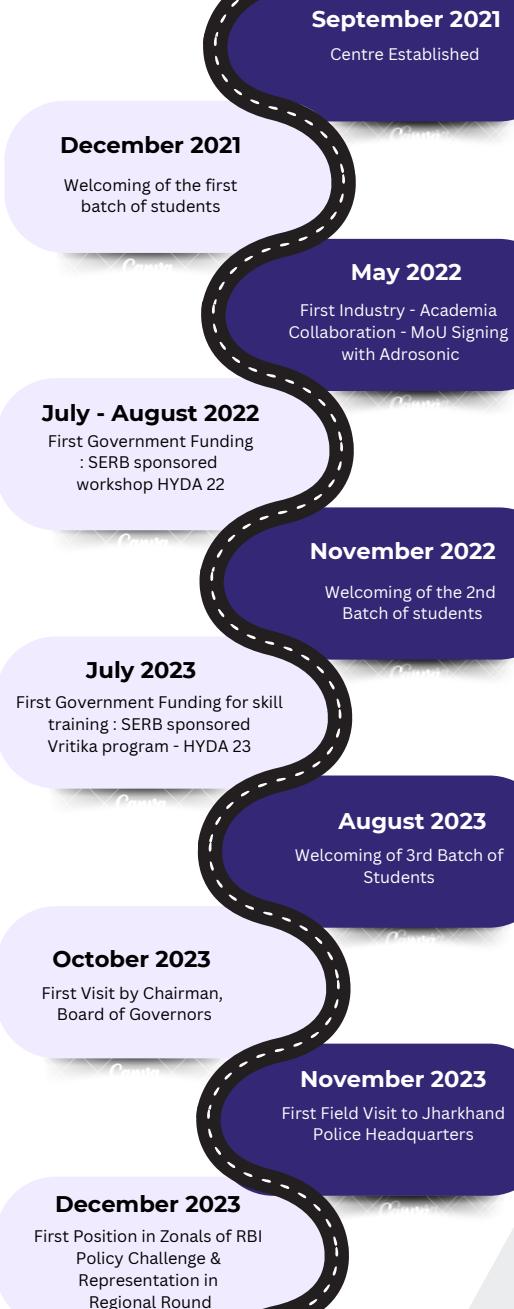
**2025**

**IDESC** - International Data Science and Engineering Conference

2025

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# CENTRE TIMELINE



# CENTRE TIMELINE

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**January 2024**



1 Day National Workshop - first academia collaboration with Administrative Staff College of India, Hyderabad

**February 2024**

Elevate, Goa  
First Industry & Client Interaction & Prototype demonstration



**March 2024**



1st Annual QEDS Conference: First Departmental Conference

**August 2024**

Welcoming of the 4th Batch of Students



**September 2024**

First Prototype demonstration by students at government event - Defence Expo



**September 2024**

Elevate London



**October 2024**

Digital Innovation lab Inauguration



**October 2024**

International Data Science and Engineering Conclave - First International Conclave with industry



**November 2024**

2nd Visit by the Chairman, Board of Governors



## EDITORIAL TEAM

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**Dr. Shrimoyee Ganguly**  
Editor



**Dr. Pushkal Kumar**  
Associate Editor

## STUDENT EDITORIAL BODY

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**Aayushii Singh**  
Editor



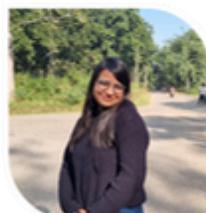
**Harsh Ranjan**  
Editor



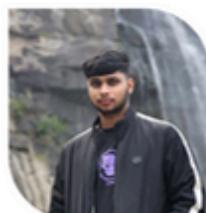
**Aastha Chhabra**  
Associate Editor



**Aditya Singh**  
Associate Editor



**Priyanshi Agarwal** Assistant Editor



**Priyanshu Ranjan** Assistant Editor

# EDITORS



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**Next Issue: August, 2025**