

ISE NEWSLETTER

DEPARTMENT OF INDUSTRIAL & SYSTEMS
ENGINEERING, IIT KHARAGPUR

January 2024 – June 2024

The Department of Industrial and Systems Engineering (ISE) was established in 1973 as the Industrial Management Centre and later elevated to a full-fledged department in the year 1983. With strong focus in research and innovation, together with academic programs tailored to address the needs of the present day technological evolution, ISE has emerged as a unique academic institution in the country. ISE offers the following degree programs:

- **B.Tech (4-year)** - B. Tech in **Industrial Engineering**.
- **Dual Degree (5-year)** - B.Tech. in **Industrial Engineering** and M.Tech in **Industrial Engineering and Management**.
- **Dual Degree (5-year)** - B.Tech in **Manufacturing Science** and M.Tech in **Industrial Engineering and Management**.
- **Dual Degree (5-year)** - B.Tech in **Engineering Product Design and Manufacturing** and M.Tech in **Design and Quality Engineering**, with **Mechanical** or **Industrial Electronics** verticals.
- **M.Tech (2-year)** - M.Tech in **Industrial Engineering and Management**.
- **M.Tech (2-year)**- M.Tech in **Operation Research & Data Analytics**
- **M.Tech (2-year)** - M.Tech in **Supply Chain Management and Logistics** (Under process).
- **Master of Science (MS)**.
- **Doctor of Philosophy (PhD)**.
- **Post-doctoral Fellowship (PDF)**.



Head of the Department, ISE:
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Message from the Head of the Department

HOD's Desk

Greetings and welcome to the Department of Industrial and Systems Engineering (ISE), IIT Kharagpur. I am happy to share with you the departmental brochure. Over the period of past fifty years, our department has emerged as a knowledge hub to educate students, scholars and professionals in all the disciplines of ISE. Our faculty members bring a diverse range of academic and industry experience. Apart from teaching, they are engaged in cutting edge research and developments funded by various government bodies and private companies. We regularly publish research findings in reputed international journals and present our work in international conferences. Our outreach programs include workshops, short-term courses, industry training programs and conferences.

In the last 50 years the department has earned its reputation across the world for excellent teaching and research in the fields of Operations Research, Data Analytics, Logistics and Supply Chain Management, Quality Engineering, Information Systems and E-Business, System Thinking and Policy Planning, Human Factors Engineering and Ergonomics, Safety Analytics and Virtual Reality, and Healthcare Systems.

The ISE graduates regularly find employment in reputed large corporations. They also pursue higher education in renowned universities across the world. Our PhD program has produced many educators who are placed as faculty members in various IITs, IIMs, NITIE and other universities across India, and abroad.

The last year 2023 was a special year as ISE completes its 50 years of journey. We organized several events to celebrate the golden jubilee, in the form of short-term courses, lecture series, tech festival (OPTIMA) and an International Conference (ICONIEA 2024). We hope this will create better awareness about our department in the larger community of prospective students, scholars, faculty and practitioners. Come, join the ISE family and let us work together in pursuit of excellence to the service of the mankind.



Prof. J. Maiti

**Head of the Department,
Department of Industrial & Systems
Engineering,
IIT Kharagpur**

International Conference

International Conference on Industrial Engineering & Analytics

In celebration of **Golden Jubilee**, the **Department of Industrial and Systems Engineering (ISE)**, IIT Kharagpur, the ISE Department successfully organized an **International Conference on Industrial Engineering & Analytics (ICONIEA, 2024)** during **February 16-18, 2024** in a **hybrid format**.

This prestigious event was designed to dialogue, collaboration, and knowledge under the theme, '**Data to Decisions**'. **ICONIEA 2024** aimed to bring together experts in **Industrial & Systems Engineering** from academia and industry to share the critical challenges, opportunities and latest advancements in areas such as artificial intelligence, machine learning, optimization techniques, safety analytics, supply chain analytics, game theory, sustainable development, emerging technologies, E-business, system dynamics, and human factors engineering, etc. The above theme aimed to address the rapid advancements and the need for research driven solutions to global issues.

The conference provided an excellent interactive platform for showcasing cutting-edge research innovation and directions. All the accepted articles are going to be published in **Springer-edited books**. We received sponsorship from the various industry partners like **GAIL, SK Traders, and WCL, India**.

Opening Ceremony

Prof. Amit Patra, the Deputy Director of IIT Kharagpur, addressed and welcomed the **Padma Shri Prof. Sankar K. Pal**, **Prof. Manoj Kumar Tiwari**, (Director, Indian Institute of Management, Mumbai and Vice-Chancellor Tata Institute of Social Sciences), and all distinguished speakers and the numerous participants. He expressed his gratitude to the host, Department of **Industrial and Systems Engineering** at **IIT Kharagpur**, for their professionalism and dynamism and for creating a true family spirit for the organisation of the conference. **Prof. J. Maiti**, Head of department also emphasised his thanks to the IIT Kharagpur and all professor from ISE department for providing the opportunity to organise the **ICONIEA 2024** on the occasion of **golden jubilee** of the Department of Industrial and Systems Engineering at **IIT Kharagpur**. He outlined that the event was intended to serve as a forum within the framework of a wider discussion on the future of **data analytics** and the integration of the operations research globally. **Prof. Sayak Roychowdhury**, briefly presented some background and statistics on students' enrolment at ISE department. Finally, the head of department wished all participants a fruitful conference and emphasised the impact of this event taking place at IIT Kharagpur.

Theme:

ICONIEA 2024 is conducted under the theme "**Data to Decision.**" The theme "**Data to Decision**" emphasizes the critical role of data analytics in shaping informed decision-making processes across various fields. It highlights **data analytics, interpretation, and application of data in field like management, healthcare, manufacturing etc.** This theme underscores **the integration of advanced analytics, artificial intelligence, and modelling techniques in industrial and supply chain sector.** From business and finance to healthcare and public policy, the focus is on leveraging data-driven approaches to enhance accuracy, efficiency, and innovation in decision-making frameworks.



International Conference

Sponsorships:

We are thrilled to share that the **ICONIEA 2024** conference has secured three industry sponsorships, with **GAIL** as our esteemed **Diamond Sponsor**, alongside **SK Traders, Odisha**, and **Western Coalfields Limited** as our valued **Silver Sponsors**. Their generous support will be instrumental in the success of the event, enriching the overall experience for all attendees.

Tracks

The Data to Decision track explores the transformative power of data analytics in building framework, and strategic decision-making across diverse industries. It highlights innovative methodologies that convert raw data into actionable insights, driving efficiency and impact in real-world applications. Papers are invited from following tracks and the keywords are also mention below, but are not limited to the following:

Track: 1

Operation Research & Data Analytics

Operations Research; Data Analytics; Multivariate Statistics; Machine Learning; System Sciences and Research; Artificial Intelligence.

Track: 2

Operations Management

Operations Management; Logistics & Supply Chain Management; Production Planning & Control; Inventory Management.

Track: 3

Process & Product Excellence, Quality Management

Product Development; Process Excellence & Lean Six Sigma; Performance/Productivity Analysis; Project Management; Quality Design, Control and Improvement.

Track: 4

Manufacturing & Service Sciences

Manufacturing; Service Science; Systems Management; Healthcare Systems, Optimization in Transportation.

Track: 5

Human Factors, Ergonomics & Safety Engineering

Ergonomics & Human Factor Engineering; Safety Engineering & Management; Work System Design & Human Computer Interaction; Safety Analytics & Virtual Reality; Risk & Uncertainty Analysis.

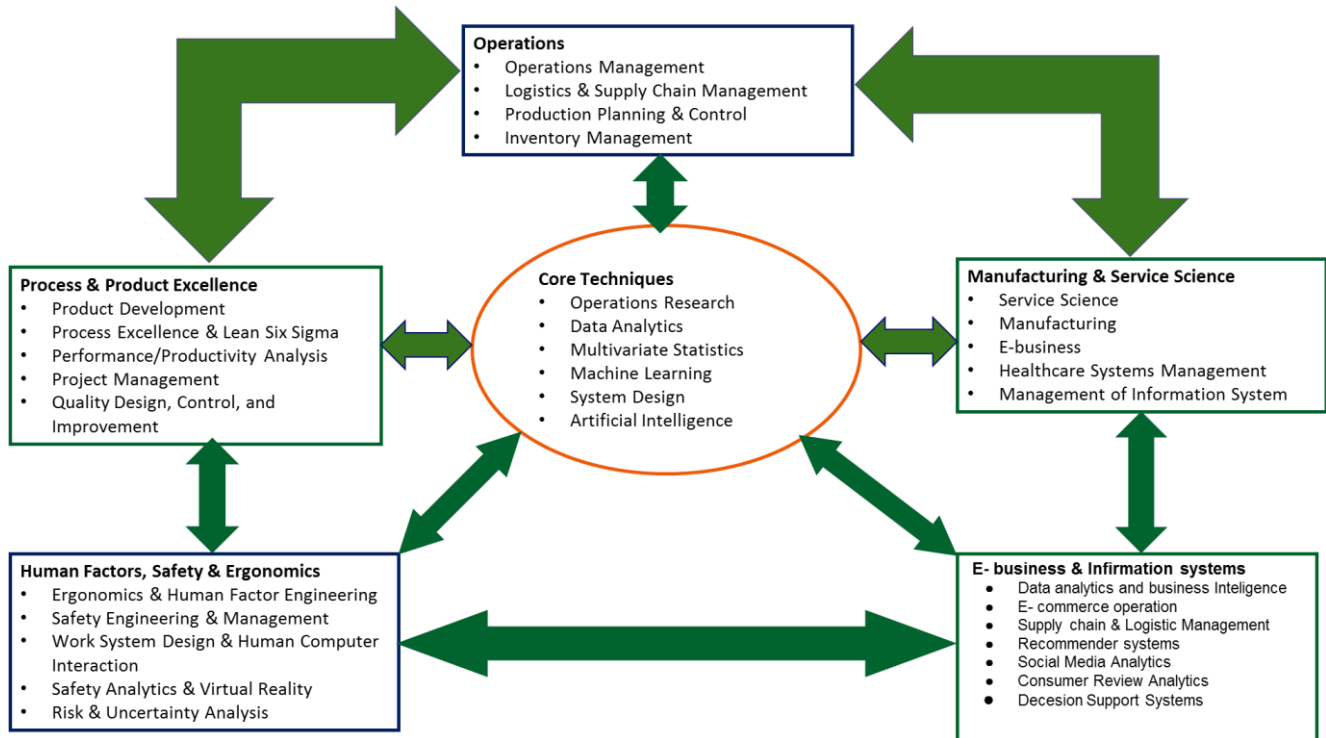
Track: 6

E-business & Information Systems

Data Analytics & Business Intelligence; E-Commerce Operation; Supply Chain & Logistics Management; Recommender Systems; Social Media Analytics; Consumer Review Analytics; Decision Support Systems; Enterprise Systems.

International Conference

Tracks



Chief Guest

Prof. Sankar K. Pal

Prof. S. K. Pal [Recipient of ‘Padma Shri’ award] delivered an insightful keynote on the evolution from **Pattern Recognition and Machine Intelligence to Deep Learning and Data Science**. He highlighted the transformative journey of these fields, addressing both the ground breaking advancements and the challenges they present, particularly in areas like **data complexity, interpretability, and ethical concerns**. His talk emphasized the importance of continuing innovation while enhancing accuracy and efficiency in **complex data environments with use of AI technologies**.



He joined the **Indian Statistical Institute (ISI)**, Kolkata in 1975 as a **CSIR-SRF** where he became a full professor in 1987, a distinguished scientist in 1998, the **Director in 2005**, and the **President in 2022**. Currently, he is a **SERB National Science Chair, Govt. of India**, an ISI Emeritus Professor, and an **AICTE Distinguished Chair Professor**. He founded the **Machine Intelligence Unit** and the **Center for Soft Computing Research at ISI, Kolkata**. He has coauthored **21 books** and about **500** research publications in the areas of pattern recognition, machine learning, image/video processing, **data mining**, **web intelligence**, **soft computing**, **bioinformatics**, **safety analytics**, and **cognitive machines**. Prof. Pal received several **national/ international awards** including the **S.S. Bhatnagar Prize (India)**, the **Padma Shri (India)**, the **G.D Birla Award (India)**, and the **Khwarizmi International Award (Iran)**.

International Conference

Keynote Speakers

Prof. M. Rama Manohara Babu

Prof. M. Rama Manohara Babu is the Ex-Director of Advanced Systems Laboratory (ASL), DRDO. He is engaged as Professor of Practice at BITS Pilani (Hyderabad Campus). He was also engaged as Professor of Practice in **IIITDM** Kancheepuram earlier in 2023. He has superannuated from **DRDO** on 30th June 2023 from the scientist position. He completed **MS in Mechanical Engineering** from **JNTUH**.



He has been awarded **PhD** by **College of Engineering, Andhra University** in the field of **Acoustic emission testing of Carbon epoxy filament wound pressure vessels**. He joined **DRDL** in the year **1986** in Programme **AGNI** and has been responsible for developing **fabrication airframe structures, testing & evaluation and integration** in the capacity of System Manager and Deputy Project Director. He delivered an insightful presentation on **Systems Engineering Approaches in Missile Design: The Quality Perspectives**. He explored the critical role of systems engineering in **ensuring precision, reliability, and safety in missile development**. Dr. Babu emphasized the importance of integrating quality control throughout the design and testing phases, highlighting how rigorous engineering practices can optimize performance and mitigate risks in advanced defense technologies. His talk underscored the need for a holistic approach to quality in **complex aerospace systems**.

Prof. Theodore T. Allen



Prof. Theodore T. Allen, Professor of **Integrated Systems Engineering and Computer Science Engineering** (Courtesy) Dr. Allen joined **OSU** in September 1996, bringing extensive experience from his tenure as a full-time intern at Ford Motor Company. His research on anti-fragility in cybersecurity received the 2022 Department of **Defense University Consortium for Cybersecurity (DoDUC2) Award for Achieving Mission Resilience & Anti-Fragility**.

He delivered an engaging talk on **Leveraging Analytics and Optimization** for Real-World Impact, focusing on case studies in **Supply Chain Management and Public Health Campaigns**. He described recent applied results and methodological contributions in supporting **DHL's supply chain through large-scale approximate optimization and promoting**. His insights highlighted vaccination campaigns related introduction of the innovative concept of "**benign double analytics**", where analytics are seamlessly integrated into advertisements and utilized for targeting through **experimental design, analysis, and optimization**.

Prof. Manoj Kumar Tiwari

Prof. Manoj Kumar Tiwari (FNAE, FNASc, and FIISE) has been **Director, Indian Institute of Management, Mumbai** (Earlier known as **NITIE, Mumbai**) since November 2019. Under his leadership, the institute's rank has been improved to **9** from **29** in the **National Institutional Ranking Framework (NIRF)** ranking for Management. He receives the "**Most Influential Researcher Award**" in the **Operations and Supply Chain Management domain**. He is the Recipient of the **David F. Baker Distinguished Research Award (IIE, USA, 2023)** and the **Mahalanobis Distinguished Educator Award** from the **Operations Research Society of India (ORSI)**. His research and teaching interests include modeling the Manufacturing Processes and Operations analysis in Supply Chain Networks.



International Conference

He delivered a compelling talk on **Manufacturing Processes and Operations Analysis in Supply Chain Networks**. He explored the critical role of **optimizing manufacturing workflows and operational efficiency within modern supply chains**. His speech emphasized the integration of advanced technologies like **AI, IoT, and data analytics** to streamline production, reduce costs, and enhance responsiveness in global supply networks, while addressing the challenges of real-time decision-making and sustainability.

Mr. Sameer Abdul Azeez



Mr. Sameer Abdul Azeez is a mechanical engineer with post-graduation in Industrial Engineering & Management from **IIT Kharagpur**. His research interests include **sonar systems, structural dynamics, machine design, ergonomics, industrial engineering and systems engineering**. He highlights the effect of **socially-embedded technological innovations influenced the economic, cultural, social, and physical well-being of people** across the globe. However, the development of modern technology is deemed successful only when it addresses the core issues of sustainability too. This talk attempts to put together some of the perspectives in this aspect, drawing upon examples from around the world, as well as that in India. The way digital technologies have ensured sustainable designs through smart engineering of **waste management, water management, traffic management, green buildings** etc. are discussed.

He presented a thought-provoking talk on **Sustainable Future through Digital Technologies: Some Perspectives from around the World**. He explored some of the perspectives in digital technology, drawing upon examples from around the world, as well as that in India. The way digital technologies have ensured sustainable designs through smart engineering of waste management, water management, traffic management, green buildings etc. are discussed.

Dr. Bharat Bhushan

Dr. Bharat Bhushan brings in more than **twenty-five years** of experience in Manufacturing and Digital transformation. Currently, he is working as **Vice President (Projects, Engineering & Technology) & CIO at Tata Steel Downstream Products Limited**. He is a visiting faculty at XLRI Jamshedpur and IIM Sambalpur. Bharat has also authored a book titled '**Data Driven Techniques for Advances Process Monitoring**'. He has completed his **PhD in Advanced Data Analytics from University of Sydney**.



He delivered a comprehensive talk on **Data-Driven Techniques for Advanced Process Monitoring and Supervision: A System Approach**. He discussed how leveraging data analytics and machine learning can enhance the monitoring and supervision of complex processes across various industries. His presentation emphasized the importance of a systematic approach in integrating these technologies to improve efficiency, reduce downtime, and ensure quality control, showcasing practical applications and future trends in the field.

International Conference

Mr. Angshuman Bhattacharya

Angshuman Bhattacharya is working as **AI project Manager** for **Adani AI Labs** in Kolkata. He has completed his **MA** in Economics from **Jadavpur University**. He is expert in the area of data science and machine learning. His specialities include Customer Analytics, Demand Analytics, Sales Network Analytics, Advanced Statistical and Econometric Modeling, machine learning models, and recommendation engines.

He delivered an insightful presentation on the **Analytics and AI in Industry**. He discussed about recommendation engine, customer growth drive by recommendation, ML algorithm, and real-life case study of retail chain. He also highlighted customer churn analytics, customer lifecycle, and application of AI in industry using customer behaviour.



Prof. Pradip Kumar Ray

Prof. Pradip Kumar Ray is the Emeritus Professor of the Department of Industrial and Systems Engineering and Advisor of Vinod Gupta School of Management Indian Institute of Technology Kharagpur, India. He has industrial experience of 8 years from 1981-89 at **GEC of India Ltd, Kolkata** and **Teaching and research experience** of **34 years** from **1989 till today** at IIT Kharagpur. He is awarded by **IEA/Tsinghua Award** by International Ergonomics Association in 2023, **SRESA Life-Time Achievement Award 2024** by Society for Reliability and Safety.



His research and teaching interests include **Quality Engineering, Ergonomics and Human Factors Engineering, Healthcare Systems Management, Productivity Management, Engineering Asset/Materials and Operations Management, TPS-based Lean Engineering.**

He presented a compelling talk on **Ergonomic Design of Human-Product Interface in Healthcare Systems**. In this talk, details of a comprehensive evaluation system for human-product/process interface and a methodology for developing an automated system for monitoring and control of the design interfaces will be presented. A number of applications of improved interfaces including automated systems ensuring risk-free environment in healthcare worksystems will be discussed.

Prof. Biswajit Mahanty

System Dynamics Modeling: Archetypes to Strategy Development

Prof. Biswajit Mahanty is currently professor in the Department of Industrial and Systems Engineering, Indian Institute of Technology Kharagpur. He did his **M.Tech** and **PhD** in the department of **Industrial Engineering and Management, IIT Kharagpur** from the same Institute in 1989 and 1993, respectively. His academic and teaching interests are in the areas of **operations research, information systems, system dynamics, project management,**



He delivered an insightful speech on **System Dynamics Modeling: Archetypes to Strategy Development**. He explored the application of system dynamics in identifying common organizational behavior patterns, or archetypes, and their role in strategic decision-making. His presentation emphasized how these models help in understanding complex systems, predicting long-term outcomes, and crafting robust strategies to address challenges in business, policy-making, and beyond.

International Conference

Valedictory session

Valedictory session of **ICONIEA 2024** organized by **Industrial and Systems Engineering, IIT Kharagpur** with guest of honour **Prof. D.K. Pratihari** (Associate Dean ID & BTBS), and chief guest **Prof. R. N. Banerjee** (retd. professor of Dept of ISE, IIT Kharagpur). The conference has been a great success featuring **118 presentations and 9 keynote speeches** with active participation from industry and academia.



ICONIEA 2024

ICONIEA 2024

International Conference

International Conference on Safety, Health and Analytics-Driven Governance for Sustainable Development (SHADG 2024)

The Department of Industrial and Systems Engineering supported The Centre of Excellence in Safety Engineering and Analytics (CoESEA), IIT Kharagpur in organizing an International Conference on Safety, Health and Analytics-Driven Governance for Sustainable Development 2024 (SHADG 2024), held during Jan 29th – 30th, 2024 in hybrid mode at IIT Kharagpur. SHADG2024 was aimed to provide an inter and multi-disciplinary forum for knowledge sharing, dissemination, networking and international collaboration in fields of safety, health, sustainability, human factors and analytics-driven governance. The conference was organized in collaboration with academic partners such as Lulea University of Technology Sweden, TRIP Centre IIT Delhi, DART Lab IIT Madras, European University Cyprus, NIDM, and industry partners such as Tata Steel Ltd., Adani, SAIL, among few. The selected papers were considered for publication in the special issues of international journals published by Taylor & Francis and Springer. The main focus areas of the conference were manifested into following Tracks:-



Track: 1

Safety, Security and Analytics (SSA)

Track: 2

Reliability, Maintenance and Analytics (RMA)

Track: 3

Health, Epidemiology and Analytics (HEA)

Track: 4

Risk, Resilience, Sustainability and Analytics (RRSA)

Track: 5

Human Factors / Ergonomics and Analytics (HFEA) Track VI Analytics-Driven Governance (ADG).



Workshops and Webinar

Short Term certificate course on “Supply Chain Management and Logistics & Inventory Management” at School of Logistics, Agartala

In view of the needs of emerging opportunities in the field of **Supply Chain Management and Logistics**, two Three-day short-term courses on: (i) “**Supply Chain Management and Logistics**” from March 29th to 31st, 2024, (ii) “**Inventory Management**” from June 19th to June 21st, 2024 were conducted by the Department of Industrial and Systems Engineering (ISE), IIT Kharagpur at **Agartala**, Tripura through Continuing Education Programme (CEP), IIT Kharagpur. The course was sponsored by **School of Logistics, Communication and Waterways, SIPARD, AD Nagar, Agartala**. The candidates from various institutes and universities based in Tripura like National Institute of Technology Agartala, Tripura University participated. **Prof. S P Sarmah (principal convener)**, **Prof. J K Jha (co-convener)**, and **Prof. A Sharma (co-convener)** were the program coordinators from ISE department. The purpose of the course was to build a basic understanding of how supply chains can be efficiently and effectively managed in a competitive business environment. In addition to classroom teaching, the course also involved simulation exercises such as **Root-Beer-Distribution Game**, using **MS Excel** for supply chain decision-making problems.



Faculty Achievements

Prof. Jhareswar Maiti

Prof. Jhareswar Maiti, Head (ISE) and Chairman (CoE-SEA), has been appointed as Editorial Board Member of the journal 'Process Safety and Environmental Protection' a leading international journal published by Elsevier Science. Prof. Maiti's research interests include occupational safety and health analytics, quality analytics and virtual reality based accident modeling and simulation. He has been listed in the '**Top 2% Most Influential Scientists in the World 2023**' by **Stanford University**', in the field of '*Artificial Intelligence and Human Factors*' for the third consecutive year.



Prof. J. K. Jha

Prof. J. K. Jha, Associate Professor of ISE department, has been appointed as Editorial Board Member of the journal "**International Journal of Industrial Engineering: Theory, Applications and Practice**". Prof. Jha's research interest is mainly related to Operations Research, Statistical Decision Modeling, Facility Planning, Supply Chain Optimization and Logistics Planning.



Prof. Anand Jacob Abraham

Dr. Anand Jacob Abraham, Assistant Professor, Department of ISE, was awarded the **Best Paper prize award** in the **International Conference on Logistics, Supply Chain and Transportation (ICLST) 2024** held at NIT Calicut from May 22-24. The paper titled "**SINGLE RESOURCE CAPACITY CONTROL MODEL FOR HIDDEN CITY TICKETING**"; is authored by **Mr. S. Sai Narayan** and co-authored by Anand. The theme of the conference is "**INDUSTRIAL ENGINEERING AND MANAGEMENT**."



Prof. Sayak Roychowdhury



Prof. Sayak Roychowdhury has been recognized as the recipient of **best teaching feedback** from the students, for teaching a laboratory course in **Spring 2022-23** in the **50-100 student count category**. The course for which this feedback was given is titled "**Statistical Learning Laboratory**", which was offered for the first time in **Spring 2022-23**. This course was jointly taught by **Prof. Sayak Roychowdhury** and **Prof. Anand Jacob Abraham**.

NPTEL & Invited Lectures

Prof. Biswajit Mahanty

Prof. Biswajit Mahanty, Professor, Department of ISE, delivered a keynote lecture on "**System Dynamics Modeling: Archetypes to Strategy Development**" on the occasion of a Two-day workshop on "**Systems Dynamics Theory and Practice**" organized by the Department of IEOR at the Indian Institute of Technology Bombay, Mumbai, India on **5th and 6th February, 2024**.



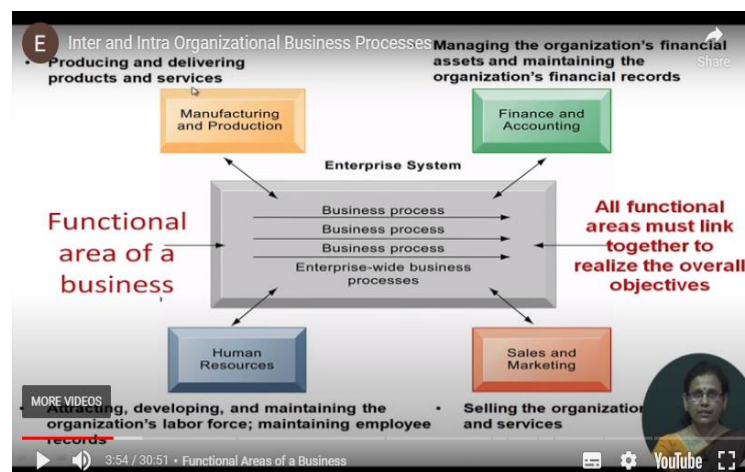
Systems Dynamics models complex systems using **feedback loops, stock and flow, and delays**. It helps analyze business, environmental, and social systems through **simulation tools** like Vensim. Applications include **policy design, supply chains, and sustainability** by predicting long-term system behavior and avoiding unintended consequences.

Prof. Mamata Jenamani



Prof. Mamata Jenamani, Professor, Department of ISE, delivered an NPTEL course on **Recommender Systems** from **Feb-Apr, 2024**. The course provides an excellent opportunity for students as well as industry personnel. Recommender systems have changed the way people find **products, information, and even other people**. Recommender systems discover information items (e.g., people, products) that are likely to be of interest to users. The proposed course aims to cover the following aspects of recommender system with a focus of developing such systems in **Web based environment**.

1. Theoretical foundations
2. Data preprocessing and preparation
3. Algorithms
4. Performance evaluation



Research & Consultancy Projects

Prof. J. K. Jha

Prof. J.K.Jha, Associate Professor in Department of ISE, bagged a project on the **‘DERIVING NEW NORMATIVE RATES FOR LOADING AND TRANSPORTATION OF COAL BY ESM TRANSPORT COMPANIES OF CIL SUBSIDIARIES’**. The project sponsoring agency is Coal India Ltd Kolkata. Consultant J.K.Jha and co-consultant is S.P.Sarmah and prof. B.Maity form the duration of september 2023 to january 2024



Prof. Akhilesh Kumar

Prof. Akhilesh Kumar, Associate Professor in Department of ISE, bagged a project on the **‘Digital Twins for Predictive Maintenance of Industrial Rotatory Equipment’** from the Department of Science and Technology (DST). The project is a part of an **AI & ML Technology Innovation Hub for Interdisciplinary Cyber-Physical Systems (ICPS)** established by the Indian Institute of Technology Kharagpur under the aegis of the **National Mission on Interdisciplinary Cyber-Physical Systems (NM- ICPS), DST, Government of India**.



The **primary objective** of this research is twofold:

- 1) to develop digital twins of physical assets and
- 2) to develop learning algorithms (Statistical and Machine Learning) that are required for identifying the onset of anomaly with reasonable lead time.

The **main deliverables** of this project are:

1. An end-to-end digital twin for generic rotatory equipment
2. Predictive maintenance 4.0 solution to predict the health of the assets and remaining useful life.

Inclusion of New Faculty Member

Prof. Subhajit Sidhanta

The department of ISE extends its warm welcome to **prof. Subhajit Sidhanta** for joining our faculty community. He joined as an Assistant Professor in the **Dept. of Industrial and Systems Engineering, IIT Kharagpur**, in **May 2024**. He previously worked as an **Assistant Professor** with the **CSE Departments at IIT Bhilai and IIT Jodhpur**. Subhajit completed his **postdoctoral research** at the **Distributed Systems Research Group at INESC-ID in Lisbon, Portugal**. He completed his Ph.D. from the **Department of Computer Science, Louisiana State University**. He also completed Research Intern at Research and Technology Centre at **Robert Bosch, India**. His research interests are **Distributed Storage Systems, Cloud Analytics, Parallel Processing**. He also had **4 years** industry experience in **Java, Databases, Web Development, Middleware** with **IBM and PWC, India**. The department looks forward to the contributions of Dr. Siddhanta will bring through his expertise and passion.



Student Spotlight

Shreya Das



Ms. Shreya Das, a 2nd-year student of the Department of **Industrial and Systems Engineering**, achieved a remarkable feat by winning **Gold** in the **women's basketball tournament** at **Parakram, IIT Dhanbad**'s prestigious sports fest. The event, held from **8th to 10th March**, saw intense competition from **10 teams** representing colleges from the **eastern part of India**. Shreya's exceptional skills and leadership on the court played a pivotal role in her team's victory. She is also a part of the **Inter-IIT Basketball team**, showcasing her dedication and talent in the sport. In recognition of her outstanding performance and contributions to the team's success, she was honored with the **Technology Students' Gymkhana Award for Best Performer** of the Team in **Basketball** for the year **2023-24**.



ISE Student

Publication Watch

Below is the list of publications appeared in journals and conference proceedings from the Department of ISE in 202-2024 (as of June 2024).

1. Sinha, P., Roychowdhury, S., & Tanaji, B. A. (2024, April). Customer Feedback Analysis Using Aspect Based Sentiment Analysis and Fuzzy Analytic Hierarchy Process. In 2024 IEEE 9th International Conference for Convergence in Technology (I2CT) (pp. 1-6). IEEE.
2. Paramanik, A. R., & Mahanty, B. (2023). A circular system for end-of-life tires under extended producer responsibility. *Materials and Manufacturing Processes*, 1-8.
3. Tanaji, B. A., & Roychowdhury, S. (2024). BWM Integrated VIKOR method using Neutrosophic fuzzy sets for cybersecurity risk assessment of connected and autonomous vehicles. *Applied Soft Computing*, 159, 111628.
4. Kakde, S. T., Roychowdhury, S., Bhosale, A. T., & Maiti, J. (2024). CPAN chart: A Novel Customer Perception Analysis System Using Natural Language Processing and Attribute Control Charting. *IEEE Transactions on Engineering Management*.
5. Sarkar, S., Paramanik, A. R., & Mahanty, B. (2024). A Z-Number Slacks-Based Measure DEA model-based framework for sustainable supplier selection with imprecise information. *Journal of Cleaner Production*, 140563.
6. Bagchi, S., Aditya, J. V., Kumari, S., Dhanraj, M., & Jenamani, M. (2023, December). A Machine Learning-based Approach for Automatic Grading and Quality Inspection of Indian Mangoes. In 2023 IEEE 2nd Industrial Electronics Society Annual On-Line Conference (ONCON) (pp. 1-8). IEEE.
7. Mukhopadhyay, S., Maji, R. N., & Sen, G. (2023, December). Prediction Model for Infectious Disease Outbreak Tree in Social Contact Networks. In 2023 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM) (pp. 1743-1747). IEEE.
8. Sahoo, S., Maiti, J., & Tewari, V. K. (2024). A framework to model contractors' hazard and risk exposure at process plants using unsupervised text mining. *Process Safety and Environmental Protection*, 183, 24-45.
9. Sahoo, S., Mukane, P., Maiti, J., & Tewari, V. K. (2024). A framework for process risk assessment incorporating prior hazard information in text mining models using chunking. *Process Safety and Environmental Protection*.
10. Gupta, S., Kumar, A., & Maiti, J. (2024). A critical review on system architecture, techniques, trends and challenges in intelligent predictive maintenance. *Safety Science*, 177, 106590.
11. Chakraborty, S., Nadar, R. A., & Tiwari, A. (2022). Designing a drone assisted sample collection and testing system during epidemic outbreaks. *Journal of Global Operations and Strategic Sourcing*, 15(2), 283-305.
12. Nair, R. B., Abraham, A., Kumar, K. R., & Sridharan, R. (2024). Optimal pricing decisions of centralized dual-channel supply chains in a duopoly: a study on the influence of competition structure. *Sādhanā*, 49(1), 1-20.
13. Menon, B. G., Sahadev, S., Mahanty, A., Praveensal, C. J., & Asha, G. (2023). Trivariate causality between economic growth, energy consumption, and carbon emissions: empirical evidence from India. *Energy Efficiency*, 16(5), 41.
14. Roy, C., Chowdhury, C. R., Misra, S., & Maiti, J. (2021). DQ-Map: Dynamic Decision Query Mapping for Provisioning Safety-as-a-Service in IoT. *IEEE Internet of Things Journal*, 9(4), 3150-3157.
15. Patra, T. D. P., & Jha, J. K. (2022). Bidirectional option contract for prepositioning of relief supplies under demand uncertainty. *Computers & Industrial Engineering*, 163, 107861.
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Publication Watch

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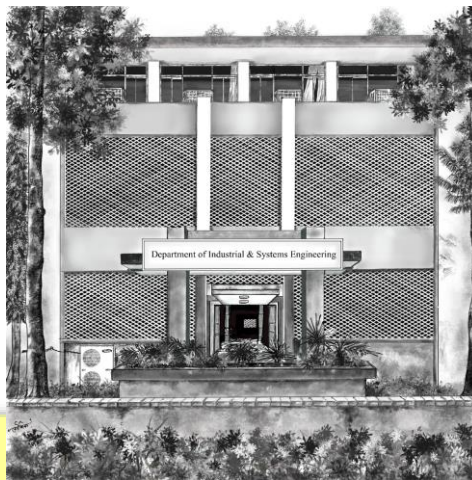
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