

# GUNJAN

A Bi-annual newsletter of ABV-IIITM Gwalior

ज्ञानस्य उत्तम श्रोतं

January-June 2024 | ISSUE: 01/2024

### FROM THE DIRECTOR'S DESK =

It is my great pleasure to present this publication depicting the major activities of Atal Bihari Vajpayee- Indian Institute of Information Technology & Management Gwalior (ABV-IIITMG) in this half-yearly newsletter "Gunjan" (January-June 2024). This Institute, first in IIIT series and being an Institute of National Importance, fully financially supported by the Ministry of Education, GoI, is completing its 28th year of starting its academic program and fulfilling its mission and vision to excel the quality education, research, and its service to local, national, and international communities.



From the academic year 2023-24, the Institute has started two new BTech

Programs: Electrical & Electronics Engineering, and Mathematics & Scientific Computing in addition to our existing 4-year B.Tech. (Computer Science & Engineering), 5- year Integrated Post-Graduate (B.Tech. (IT) + MTech), 5-years Integrated Post-Graduate (BTech (IT) + MBA) with exit option of having only BTech (IT) after 4 years. Institute is also having excellent 2-year MBA, 2-year MTech program in 3 disciplines and full/part-time/QIP PhD program in number of disciplines. The institute has implemented the NEP2020 in its full sprit. The Institute has started several new initiatives for the benefits of the students such as branch change after first year, exit programs, summer terms for backlog students, internships, MOOC courses, minors along with major degrees, conversion from regular MTech to PhD, regular PhD to Part-time PhD, various scholarships to the UG/IPG students, etc.

During January to June 2024, Institute has achieved many milestones in academics, research and students' activities. Some of the highlights are:

- Constructions of a mini-health centre and a hostel of capacity 2x250 beds has started and expected to complete by June 2025.
- Selection of faculty is completed in June 2024 and new advertisement of faculty selection is done in June 2024. Faculty Research initiation grant up to 10 lakhs is given to newly joined (external) faculty members.
- Institute bags many sponsored & consultancy projects, organised Karyshalas, FDPs & Vertika from India and abroad.
- Following centres are/being established during this period: Rekhi Centre of Excellence for the Science of Happiness, Centre for Indian Knowledge System (IKS), Centre for Autonomous Systems (CAS), and Center for Biomedical Research (CBR).
- Revised course curriculum with contents is prepared and a print copy is given to all the faculty members.
- The alumni meet is organized during January 15-16, 2024, and foundation day celebration is celebrated on January 17, 2023.
- 2nd IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI-2024) was held during March 14-16, 2024.
- Two-day National seminar on National Conference on Climate Change and Renewable Energy Integration towards Net Zero during March 16-17, 2024.
- Twelve short term courses/FDP are organised during January to April 22, 2024.
- IEEE 2024 International Conference on Intelligent Signal Processing and Effective Communication Technologies (INSPECT-2024) will be held during December 7-8, 2024.

Our vision is to make our Institute a world-class educational centre of knowledge generation, acquisition and dissemination that will benefit society, and to educate and train people to work in fields where they will be valued both for their specialised knowledge and for their ability to research, communicate and solve problems.

#### **INSTITUTE ACTIVITIES & ACHIEVEMENTS**

#### Republic Day Celebration 2024

Republic Day marks the adoption of India's constitution and the country's transition to a republic on January 26, 1950. Every year, the celebrations marking the day feature spectacular military and cultural pageantry. In New Delhi, armed forces personnel march along the Kartavya Path in an elaborate display of military might. The epic show on Kartavya Path eclipses everything else happening across the country on this auspicious day. The Institute also celebrated the same on January 26, 2024, in front of Administrative Block with presence of faculties, students and staff.





#### 5-Days Self-Sponsored Online Short-Term Course

Hands-on on Machine Learning and Deep Learning (Module-1) primarily focuses on the data characteristics, statistical and visual analysis, feature analysis and reduction, and machine learning models: classification, regression, clustering, and reinforcement with practical hands-on using real-world applications intermingled with the theoretical concepts in the sessions. It was held during January 29 to February 2, 2024. Prof P K Singh, Dr Wilfred W Godfrey, and Dr Santosh Singh Rathore were the coordinators of the event.

#### Indo-German joint collaborative workshop

Indo-German joint collaborative workshop on Information Centric Network for Resilient Smart Urban Infrastructure 2024 was held on February 23, 2024, in the Department of IT. In conclusion, resilient smart urban infrastructure represents a transformative approach to city development, leveraging technology to build sustainable, safe, and adaptable urban environments capable of meeting the challenges of the 21st century. The event organizer was Prof KK Pattanaik.





#### **Workshop on Startup Eco-System**

A Workshop on the Startup Ecosystem aims to provide entrepreneurs, investors, and professionals with insights and practical knowledge about creating, growing, and sustaining startups. Such a workshop typically covers various aspects of the startup ecosystem, including ideation, funding, scaling, and networking. It was held during March 2-4, 2024, in the Dept. of Management Studies. Prof M Patwardhan, Dr Arun Kumar coordinated the event.



A SERB Sponsored High-End Worksop (Karyashala) on Recent Trends in Antenna Design and Technology for Next Generation Communication Ecosystem was held in the Department of EEE during March 4-10, 2024. Dr Rakesh Chowdhury, Dr Pinku Ranjan, Dr Somesh Kumar and Dr Sandesh Jain coordinated the event.



#### The pledge-taking ceremony on Mera Phela Vote Desh Ke Liye

"Mera Phela Vote Desh Ke Liye" translates to "My First Vote for the Nation" in English. This phrase is often used in campaigns to encourage first-time voters to participate in the electoral process, emphasizing the importance of their vote in shaping the future of the country. The pledge-taking ceremony was held on March 6, 2024, at the Institute campus.

#### International Women's Day

International Women's Day (IWD) is celebrated on March 8th every year. It is a global day recognizing the social, economic, cultural, and political achievements of women. The day also marks a call to action for accelerating gender parity. Significant activities often include rallies, conferences, art exhibitions, and online campaigns. The Institute followed the tradition and celebrated it with a passion and the faculties, and the students attended the same festival.



#### International conference IATMSI-2024

An international conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI-2024), was held during March 14-16, 2024, in Department of EEE. This conference served as a prestigious platform and facilitated the dissemination of cutting-edge advancements across a spectrum of disciplines, including communication, IT-enabled management, and industrial electronics applications such as health, energy, VLSI, smart transportation, biomedical science, agriculture, AI applications, robotics, defence, technology policies, and allied domains.

#### **National Conference on Climate Change**

A National Conference on Climate Change and Renewable Energy Integration Towards Net Zero was held on March 16, 2024. The National Conference on Climate Change typically involves discussions, presentations, and workshops focused on various aspects of climate change, including scientific research, policy making, mitigation strategies, and adaptation techniques. Participants often include scientists, policymakers, activists, business leaders, and educators. Prof Rajendra Sahu was the coordinator of the event.



#### **CAR Initiative Talk**

The CAR initiative talks on Exploration of analog circuit design and development life cycle by Prashant Admane (Group Technical Manager), HCL, was held on March 31, 2024. The main objective of exploring analog circuit design can vary depending on your interests and goals. Many faculty members and students attended the talk.



#### TIIC Sponsored 2 Days Workshop on Microelectronics Technologies

Prof Manisha Pattanaik, Dr Gaurav Sharma, Dr Biswabandhu Jana, and Dr I A Ansari organized a workshop on Next Generation Communication and Microelectronics Technologies for Biomedical Applications. The duration of the event was April 6-7, 2024. A Workshop on Microelectronics Technologies typically covers a wide range of topics related to the design, fabrication, and applications of microelectronic devices and circuits. This workshop is essential for engineers, researchers, and students interested in advancements in semiconductor technology and its practical applications.

## $Workshop \, on \, Emerging \, Topics \, of \, Computer \, Vision \,$

A TIIC sponsored Workshop on Emerging Topics of Computer Vision typically focuses on the latest advancements and trends in the field of computer vision. These workshops provide a platform for researchers, practitioners, and students to discuss recent developments, share their findings, and explore future directions. The Institute organized a workshop on the same topic during April 20-21, 2024, and Dr Sunil Kumar, Dr Rahul Kala, Dr Veena Anand, Dr M Shukla, and Dr Anjali were the coordinators of the workshop.



#### Workshop on Next-Generation Communication and Microelectronic Technologies

A TIIC sponsored workshop on Next-Generation Communication and Microelectronic Technologies was organized by Dr Gaurav Sharma, Dr B Jana, Dr I A Ansari, and Prof M Pattanaik during May 4-5, 2024 in the Department of EEE. The workshop on Next-Generation Communication and Microelectronic Technologies focuses on the latest advancements and innovations in the fields of communication systems and microelectronics. This workshop is essential for professionals, researchers, and students involved in telecommunications, electronics, and related fields.



# **Emerging Technologies and Challenges in Robotics and Autonomous Systems**

A Workshop on Emerging Technologies and Challenges in Robotics and Autonomous Systems focuses on the latest advancements, innovations, and the complex challenges faced in the fields of robotics and autonomous systems. This workshop aims to bring together researchers, engineers, practitioners, and students to discuss cutting-edge developments and foster collaboration. The workshop was organized by Dr D K Dewangan, Dr W Wilfred Godfrey, and Dr Rahul Kala during May 18-19, 2024, in the Centre for Autonomous Systems.



#### Awareness campaigns and disseminating information on three new Criminal Laws

Awareness campaigns and disseminating information on three new Criminal Laws Friday was held on May 10, 2024. The Director of Central Academy of Police Training, Bhopal, spoke on three new legislations, i.e., Bhartiya Nyay Samhita-2023, Bhartiya Nagrik Surakha Samhita-2023, and Bharatiya Sakshya Adhiniyam, 2024.



#### 7-Days Self-Sponsored Hybrid Mode Workshop

A 7days self-sponsored hybrid mode workshop on Chip Design Flow: Behavioural to Layout was held during May 16-22, 2024. The motive of the event was to teach the basics of the chip design to engineers, academicians and industry personals. Dr Gaurav Kaushal, department of EEE organized the event

#### Collaborative Optimization in Autonomous Vehicles Using Blockchain and Emerging Technologies

Optimization algorithms can streamline processes, enhance decision-making, and minimize resource waste, increasing efficiency and cost savings. Blockchain, on the other hand, empowers secure and transparent data exchange, promotes decentralized trust, and increases security. The TIIC sponsored workshop was organized during May 17-18, 2024, and the coordinators of the event were Prof PK Singh, Dr Amrendra Singh Yadav, and Dr Deepak Kumar Dewangan.

# Workshop on Multivariate Data Analysis for Engineering Science and Management

A TIIC Workshop on Multivariate Data Analysis for Engineering Science and Management was organized by Department of Engineering Sciences during May 20-22, 2024. A Workshop on Multivariate Data Analysis for Engineering Science and Management would focus on the application of statistical and mathematical techniques to analyze and interpret complex datasets with multiple variables. This type of workshop is valuable for professionals and researchers in fields such as engineering, science, and management, where data-driven decision-making is crucial. Dr Ajay Kumar, and Dr Pragya Shukla were the coordinators of the event.





#### Hands-on Workshop on Cutting Edge Technologies

A Workshop on Advancements in Medical Image Analysis focuses on the latest techniques, technologies, and applications in the field of medical imaging. This workshop brings together researchers, clinicians, and industry professionals to discuss cutting-edge developments and foster collaboration in improving diagnostic and treatment processes through advanced image analysis. Dr Sunil Kumar, Dr B Jana, Dr N Punn, Dr I A Ansari, and Prof M Bhattacharya were the coordinators of the event. The workshop was held during May 25-26, 2024, at the Centre for Biomedical Research.

#### The Inauguration of Happiness Centre

The inauguration of Happiness Centre is opened at ABV-IIITM Gwalior on June 4, 2024, with MoU signing between two organization. Expert talk by Prof Satinder Singh Rekhi, the founder of R Systems and a founding member of the World Happiness Foundation, will be delivering an institute lecture at ABV-IIITM Gwalior. Dr Rekhi's talk, titled Who's running your life – you or your monkey brain promises to be an insightful exploration into the workings of our minds and the pursuit of happiness.

#### World Environment Day 2024

World Environment Day (WED) is celebrated annually on 5 June and encourages awareness and action for the protection of the environment. The Institute celebrated the same on June 5, 2024. The planation drive was the main event during the day





#### **International Visitors**

Prof. Dariusz Wrzosek, Director and Professor at Institute of Applied Mathematics and Mechanics, University of Warsaw Poland, and Prof. Marta Wrzosek visited ABV-IIITM Gwalior on May 2024.

#### International Yoga Day 2024

The celebration of 'Yoga Mahotsav 2024' widely known as International Yoga Day 2024 took place on Friday, June 21, 2024, marking the 10th anniversary of this globally recognized event. The International Day of Yoga aims to promote yoga for health, spiritual growth, and global peace, and the main event is being held under the leadership of PM Modi at Sher-i-Kashmir International Conference Centre (SKICC), Srinagar. The Institute also celebrated it with the same spirit.





#### Hands-on on Signal Processing using Machine Learning

A Hands-on on Biomedical Signal and Audio Signal Processing using Machine Learning was held on June 25, 2024, in the Department of EEE. The objective of signal processing using machine learning is to leverage the strengths of ML algorithms to enhance traditional signal processing tasks, enabling more accurate, adaptive, and efficient systems across various domains and applications. The event organizers were Dr I A Ansari, Dr Vinal Patel, Dr Binod Prasad, Dr Pragya Swami, and Dr Gaurav Sharma.

#### AICTE sponsored programme on Data Science and Quantum Computing

Department of Engineering Sciences awarded with the AICTE sponsored programme on Data Science and Quantum Computing. Such an AICTE-sponsored program would not only contribute to the academic and research landscape in India but also prepare students and faculty to be at the forefront of technological advancements in Data Science and Quantum Computing globally. It would aim to bridge the gap between academia and industry, fostering a robust ecosystem of innovation and learning.

#### **Joining of New Faculty Members**

Dr. Gaurav Pandey (Department of EEE), Dr. Anuwedita Singh (Department of ES), Dr. Rashmi Ranjan Behera (Department of MS), have joined the institute in their respective department as faculty members.







# **Joining of New Staff Members**Dr. Rajeev Kumar (Medical Offi

Dr. Rajeev Kumar (Medical Officer) & Gopal Singh Jadon (Deputy Registrar / Deputy Librarian) have joined the institute during the period of January-June 2024.





#### **PhD Awarded**

| S.N. | Name of PhD Scholar    | Thesis Title  |
|------|------------------------|---|
| 1    | Ms. Charu Goyal        | Linking High-Performance Human Resource Practices and Organizational<br>Outcomes in Service Sector in India                 |
| 2    | Ms. Aishwarya Gupta    | Multi-UAV Deployment and Trajectory Planning for NOMA Enabled<br>Wireless Networks  |
| 3    | Ms. Chetanya Singh     | Identification and Validation of Digital Assistant Acceptance Model in Online Shopping                                      |
| 4    | Mr. Anurag Singh Tomar | Robust Face Super-Resolution through Deep Learning Techniques   |
| 5    | Mr. Vaibhav Agarwal    | Modeling e-Consumer's Behavioral Intentions in ambit of Multi-Stage<br>Shopping Experience in Online Food Delivery Services |
| 6    | Mr. Umashankar Samal   | Enhancing Software Reliability Models: Fault Removal Efficiency and Strategies for Optimal Release                          |



## **FACULTY ACHIEVEMENTS**

#### **Publications**

- 1. Behera, R.R., Rath, C.S., Acharya, A.K., Subhrajyoti, T., Acharya, S., Kumar, R. Integrating 5E Model with Planned-Incidental Grammar Teaching Approach to enhance grammar competency of eighth-grade Odia medium school students, in a time-sensitive manner (2024) Asian-Pacific Journal of Second and Foreign Language Education, 9 (1).
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- 4. Mangal, S., Misra, O.P., Dhar, J. Modeling infectious respiratory diseases considering fear effect and latent period (2024) Results in Control and Optimization, 16.
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- 7. Bouda, H., Allouch, C., El Allali, Z., Kant, K. Numerical solution of eigenvalue problems for a compact integral operator with Green's kernels (2024) Advances in Operator Theory, 9 (3).
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- 12. Devi, R., Agrawal, A., Dhar, J., Misra, A.K. Forecasting of Indian tourism industry using modeling approach (2024) MethodsX, 12.
- 13. Kandpal, M., Keshari, N., Yadav, A.S., Yadav, M., Barik, R.K. Modelling of blockchain based queuing theory implementing preemptive and non-preemptive algorithms (2024) International Journal of System Assurance Engineering and Management, 15 (6), pp. 2554-2570.
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- 69. Samal, U., Kumar, A. Empowering software reliability: Leveraging efficient fault detection and removal efficiency (2024) Quality Engineering.
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- 108. Sharma, G., Mallik, R.K., Pandey, N., Singh, A. Effect of Interfering Transmitter on the Secrecy of Diffusive Molecular Timing Channels (2024) IEEE Transactions on Communications, pp. 1-1.
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- 110. Sharma, G. On the Effect of Flow and Degradation on Hitting Rate of Mobile Nano Sensors in Diffusive Molecular Communication Systems (2024) WSEAS Transactions on Biology and Biomedicine, 21, pp. 75-82.
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- 131. Ashapurna Samantray, Ashapurna Samantray 1 Rashmi Ranjan Behera, Effectiveness of ICT-integrated pedagogy on pre-service teachers' teaching competence in mathematics, 9, 2024, vol. 9, 2024, pp. 1401188.

#### **Invited Talks**

- 1. Dr Debanjan Sadhya delivered an expert lecture in Workshop on Recent Trends in Cyber Security Technologies at ABV-IIITM Gwalior, India on 14.02.2024.
- 2. Dr Deepak Kumar Dewangan delivered an expert lecture on the topic Road Scene Understanding for Autonomous Vehicle Systems using AI techniques under the theme of the Workshop on Artificial Intelligence and Machine Learning (AIML) held at Amity University, Gwalior during 15-16 April 2024.
- 3. Dr Deepak Kumar Dewangan delivered talk on Driving Behavior Analysis of Intelligent Vehicle system for Lane Detection Using Vision-Sensor in the National Conference on Recent Advancement & Innovation in Computer Science and Information Technology (NCRAICSIT-24) on April 27, 2024.
- 4. Dr Deepak Kumar Dewangan delivered an expert lecture on the topic Road Scene Understanding under the theme of the TIIC sponsored workshop at Department of Computer Science and Engineering, ABV-IIITM Gwalior (Physical Mode) on May 17, 2024.
- 5. Dr Deepak Kumar Dewangan delivered an expert talk on the topic Future of Transportation: Autonomous Vehicle Systems held at Kanpur Institute of Technology, Kanpur (Online Mode) on 23.05.2024.
- 6. Dr Deepak Kumar Dewangan delivered an expert lecture on the topic Scene Perception for Autonomous Vehicle Systems under the theme of the TIIC sponsored workshop during May 24-25, 2024.
- 7. Dr Deepak Kumar Dewangan delivered an expert lecture on the topic Introduction to Python Programming under the theme of Applied Data Analytics: A Practical Approach at the Department of Information Technology on June 12, 2024.
- 8. Dr Narinder Singh Punn delivered an expert lecture with hands-on on Explainable AI: Bridging the AI decisions



- and human trust at Advancements in Medical Image Analysis: Theory and Hands-on Workshop on Cutting Edge Technologies sponsored by TIIC Centre for Biomedical Research, ABV-IIITM Gwalior.
- 9. Dr Narinder Singh Punn delivered an expert lecture hosted by the IEEE computer society PSIT student chapter and Department of Basic Sciences and Humanities at our esteemed institution, Pranveer Singh Institute of Technology-Kanpur.
- 10. Dr Narinder Singh Punn delivered a guest lecture series on "Big Data Analytics" at ITB Police, MHA, Shivpuri.
- 11. Dr Vinal Patel delivered Expert talk on Applications of Signal Processing for the Development of Wearables for Disabled and Elderly under the KARYASHALA Scheme funded by SERB at IIT Patna.
- 12. Dr Vinal Patel delivered Expert talk on Audio Wearable Technology Using Microphone Arrays at Pandit Deendayal Energy University, Gujarat.
- 13. Dr Purnendu Mishra delivered Talk entitled Unveiling Nature's Patterns: Reaction-Diffusion Systems and Pattern Formation in International Workshop on Mathematical Models and Methods in Life Sciences (M3LS 2024), on May 13, 2024, ABV-IIITM Gwalior.
- 14. Dr Anuraj Singh delivered a plenary talk at Workshop on Recent Trends in Biomathematics and Dynamical System, Bifurcation, Chaos and Numerical Methods, Department of Mathematics Mahadevananda Mahavidyalaya Barrackpur, Kolkata during February 07-13, 2024.
- 15. Dr Anuraj Singh delivered a plenary talk at Workshop on Recent Development of Mathematical Sciences on Biological and Dynamical Systems with Fuzzy and Fractional Environments, Department of Mathematics, Mahadevananda Mahavidyalaya Barrackpur, Kolkata during June 19-29, 2024.
- 16. Dr Sunil Kumar delivered an expert talk on Convolutional Neural Network 5-Days Self-Sponsored Online Short-Term Course on Hands-on on Machine Learning and Deep Learning (Module-1) on January 2, 2024.
- 17. Dr Sunil Kumar delivered an expert talk on RNN/LSTM Concepts and Hand-on Seven days self-Financed FDP on Multi-Criteria Decision-Making with Machine Learning Techniques in Management Research (MDML-TiMR) on February 9, 2024.
- 18. Dr Sunil Kumar delivered an expert talk on CNN fundamentals on 2 Days Workshop on Emerging Topics of Computer Vision and Multimedia on April 19, 2024.
- 19. Dr Sunil Kumar delivered an Expert talk on ICT Technologies: Introduction to Advances in Data-Driven AI/ML/DL to Agriculture in Advance Management Development Programme on Agriculture 4.0: Challenges and Implications of ICT on February 23, 2024.
- 20. Dr Saumya Bhadauria delivered an expert talk on Malware Analysis in Cyber Physical Systems in Workshop CyberTEA: Cybersecurity Trends and Emerging Applications, at IIIT Sri City on January 6, 2024.
- 21. Dr Vivek Tiwari delivered talk on Hands-on medical expenses prediction using linear regression, 2-days Workshop on Artificial Intelligence and Machine Learning (AIML) scheduled held on April 15-16, 2024.
- 22. Dr Vivek Tiwari delivered talk on Data acquisition in Agriculture, One-week MDP on Advance Management Development Programme on Agriculture 4.0: Challenges and Implications of ICT, February 23-27, 2024.
- 23. Dr Vivek Tiwari delivered talk on Linear Regression: a method for predictive analytics, One-week SERB Sponsored High-End Workshop on Recent Trends on Applied Machine Learning for Speech and Bio-Signal Processing, January 02-07, 2024.
- 24. Dr Rahul Kala delivered talk on Week-long course on Robot Motion Planning at NIT Mizoram, March 25-30, 2024.
- 25. Dr Rahul Kala delivered a talk on Autonomous Mobile Robots at VIT Bhopal on February 9, 2024.
- $26. \quad Dr\,Rahul\,Kala\,delivered\,a\,talk\,on\,Learning-based\,Robotics\,at\,IIIT\,Allahabad\,on\,February\,17,2024.$
- 27. Dr Rahul Kala delivered Lectures on Demo: Robot Operating System and Learning-based Robotics for Autonomous Navigation at JNTUH Hyderabad on February 28, 2024.
- 28. Dr Rahul Kala delivered talk on Startups and IPR in Robotics at RJIT on February 22, 2024.
- 29. Dr Rahul Kala delivered talk on Envisioning innovative robotic solutions for Viksit Bharat at the National Science Day at ITM Gwalior, sponsored by NCSTC, Delhi and MPCST Bhopal on February 28, 2024.
- 30. Dr Rahul Kala delivered talks at the TIIC sponsored workshop by the Departments of Information Technology on April 19, 2024, Computer Science on May 18, 2024, and Centre for Autonomous Systems on May 25, 2024.
- 31. Dr Santosh Singh Rathore delivered talk in seven-day self-financed Faculty Development Programme (FDP) on Multi-Criteria Decision-Making with Machine Learning Techniques in Management Research (MDML-TiMR 2024) scheduled from February 9-15, 2024.
- 32. Dr Santosh Singh Rathore delivered talk in Five-day Advanced Management Development Program on Innovations in Digital Financial Inclusion & Risk Management, funded by the Ministry of MSME, Government of India, from March 06-10, 2024.
- 33. Dr Santosh Singh Rathore delivered talk in Workshop titled Collaborative Optimization in Autonomous Vehicles Using Blockchain and Emerging Technologies.



- 34. Dr K V Arya delivered expert lecture as resource person in NEP 2020 Orientation and Sensitization Programme at UGC Malaviya Mission Teacher Training Centre (MMTTC), Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.) during May 01-10, 2024.
- 35. Dr K V Arya delivered keynote speech in International Conference on Artificial Intelligence: Challenges, Opportunities, and its impact on Society-2024 (ICAI-2024) on April 26-27, 2024, Bareilly India.
- 36. Dr K V Arya delivered expert Lecture as resource person in NEP 2020 Orientation and Sensitization Programme" at UGC Malaviya Mission Teacher Training Centre (MMTTC), Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.) during March 13-22, 2024.
- 37. Dr K V Arya delivered expert lecture as resource person in 1st NEP 2020 Orientation and Sensitization Programme at UGC Malaviya Mission Teacher Training Centre (MMTTC), at LNIPE, Gwalior, during January 01-10, 2024.
- 38. Dr K V Arya delivered Expert Lecture on Building Effective Teaching-Research Links at the Curriculum Level in Faculty Induction Program (Gurudakshta) by UGG- Malaviya Mission Teacher Training Centre of Pt. Ravishankar Shukla University, Raipur on January 22, 2024.
- 39. Dr Amrendra Singh Yadav delivered a talk in 7-day High-End Workshop/Karyashala workshop on Collaborative Optimization in Autonomous Vehicles Using Blockchain and Emerging Technologies; organized by DST/SERB, ABV-IIITM Gwalior on May 17-18, 2024.
- 40. Dr Amrendra Singh Yadav delivered an invited Keynote Speaker talk at IEEE sponsored conference on Blockchain and Its Applications organized by BNCET Lucknow, India, on February 15-16, 2024.
- 41. Dr Amrendra Singh Yadav delivered an invited talk on Two-day Offline Workshop on Collaborative Optimization in Autonomous Vehicles Using Blockchain and Emerging Technologies organized by ABV-IIITM Gwalior on May 17-18,2024.
- 42. Dr Manoj Kumar Dash delivered lecture as Resource Person on Application of Multivariate Analysis in Engineering Research Organised by Department of Engineering Sciences on May 21, 2024.
- 43. Dr Manoj Kumar Dash delivered lecture as Resource Person in a five-day Management Development Programme (M.D.P.) on Agriculture 4.0 Challenges and I.C.T. sponsored by M.S.M.E. on March 27, 2024.
- 44. Dr Manoj Kumar Dash Lecture Delivered as Resource Person in Faculty Coordinator Faculty Development Program on Multi-Criteria Decision-Making with Machine Learning Techniques in Management Research from February 9 February 15, 2024
- 45. Dr Manoj Kumar Dash delivered lecture as Resource person in the Faculty Development Program on H.R. Analytics from January on February 3, 2024.
- 46. Dr Manoj Kumar Dash delivered lecture as Resource Person in five days management development programme (M.D.P.) on Startup and Innovation sponsored by M.S.M.E. at ABV-Indian Institute of Information Technology and Management Gwalior on December 21, 2023.

#### **Projects Awarded**

- 1. Dr Jeevaraj S obtained a Core Research Grant titled Linking Psycho-Social Conditions of People and the Effects of Pandemics: Reference to COVID-19 Situations in India as a CO-PI with Dr Rajesh Rajagopal, Assistant Professor, IIM Tiruchirappalli (PI). Duration: 2024-2027, Budget: 25 Lakhs (approx.).
- 2. Dr Praveen Kumar Singya, received, DST-SERB sponsored Training and Skill Internship (VRITIKA) on Design and Analysis of Multi-hop and Mesh Hybrid Networks for High-rate Reliable B5G Communication"" under Accelerate Vigyan Scheme during the financial year 2024-25.
- 3. Dr Vinal Patel (PI) and Dr Gaurav Sharma (Co-PI) awarded by DRDO Project entitled Development of multireference active noise cancellation headset for clearer communication under an extremely noisy environment of flight operation, Budget: 30.04 Lakhs.
- 4. Dr Rahul Kala, awarded as Co-PI entitled Turning Tragedy of the Commons ToC into Emergent Cooperative Behavior ECB for Automated Vehicles at Intersections with Meta-Learning jointly funded by DST and NSF, in collaboration with University of Wisconsin-Madison, IIT Jammu, and IIIT Allahabad.
- 5. Dr Amrendra S. Yadav received project from IHUB NTIHAC FOUNDATION, IIT Kanpur (Sponsored by DST), Budget: 18,15,840INR.
- 6. Dr Manoj Kumar Dash received a project on Capacity Building Program on Design and Entrepreneurship Ministry of Education, Budget: 54 Lakhs INR for Five Years. Project Co P.I.: Dr Manoj Kumar Dash, PI: Prof Anurag Srivastava.
- 7. Dr Manoj Kumar Dash received a TIDE 2.0 Project, Meity, Received 4th Instalment: 18,49,777 INR, Re-release: 9,91,079,INR.
- 8. Dr Manoj Kumar Dash received a consultancy project on Development of Marathwada Centre for Economic



- Development, Budget: Rs 10 INR.
- 9. Dr Ajay Kumar received a project on Development of a self-updated recommendation system incorporating risk factors for tourism industry using time series models, Budget 6,15,000 INR.
- 10. Dr Vinay Singh received a project on the use-case analysis of Blockchain technology in Textile Quality Management An Exploratory Study, Budget 5,55,000 INR.

#### **Academic Outreach Activity**

- 1. Dr Jeevaraj S is Editing the special issue (as a sole guest editor) titled Various Generalizations to Fuzzy sets and Their Applications in Engineering and Management on the SCI indexed journal "Mathematics" published by MDPI (Impact factor: 2.4).
- 2. Dr Narinder Singh Punn Contributed as a judge in "Suryodaya IT Fest", Cyber Scindia, Computer Society of the Scindia School with theme of the event as "Empowering Innovations".
- 3. Dr Purnendu Mishra served as Convener International Wonvener of 3 Day workshop on "" Mathematical Models and Methods in Life Sciences (M^3LS 2024), 13-15 May 2024.
- 4. Dr Purnendu Mishra Invited Prof. Dariusz Wrzosek, Professor and Director of Institute of Applied Mathematics and Mechanics, University of Warsaw Poland (1 Week Visit to ABV-IIITM Gwalior, 13-17 May 2024).
- 5. Dr Purnendu Mishra Invited Prof. Marta Wrzosek, Professor at Faculty of Biology, University of Warsaw Poland for expert lecture at Centre of Biomedical Research ABV-IIITM Gwalior".
- 6. Dr Shashikala Tapaswi organized FDP on "Recent Trends in Cyber Security Technologies (RTCST-2024)", held during February 12-16, 2024.
- 7. Dr Vivek Tiwari, Member, Member, Board of Study (Computer Science and Engineering), IIIT Bhagalpur, Bihar.
- 8. Dr Vivek Tiwari, Member, Member, Board of curriculum (Computer Science), Central University, Himanchal Pradesh
- 9. Dr Rahul Kala Co-organized TIIC sponsored workshop by the Centre for Autonomous Systems entitled Emerging Technologies and Challenges in Robotics and Autonomous Systems during May 24-25, 2024.
- 10. Dr Rahul Kala Co-organized TIIC sponsored workshop by the Department of Information Technology entitled ""Emerging Topics of Computer Vision and Multimedia"" (19 20 April 2024)
- 11. Dr Rahul Kala, Interview at Episode 265 entitled ""India's Artificial Intelligence & Robotic Industry Igniting a Silent Revolution Rahul Kala"" at The ONE's Changing the WORLD (14th April 2024).
- 12. Karm Veer Arya, Editorial Acitivity: Proc. of 7th ASRES International Conference on Intelligent Technologies (ICIT-2022)", in series Lecture Notes on Networks and Systems, Vol. 685, 2023, Springer. ISBN: 978-981-99-1912.
- 13. Dr Amrendar Yadav organized 2-Day Workshop on Collaborative Optimization in Autonomous Vehicles Using Blockchain and Emerging Technologies, 17 to 18 May 2024, ABV-IIITM Gwalior, TIIC.
- 14. Dr Manoj Kumar Dash organized Five-day Management Development Programme (M.D.P.) on Digital Finance Inclusing and Risk Management sponsored by M.S.M.E. at A.B.V.- Indian Institute of Information Technology and Management Gwalior. 07-11 March 2024.
- 15. Dr Manoj Kumar Dash organized Five-day Management Development Programme (MDP) on Agriculture 4.0 Challenges and I.C.T. sponsored by M.S.M.E. at A.B.V.- Indian Institute of Information Technology and Management Gwalior, 23-27 March 2024.
- 16. Dr Manoj Kumar Dash organized Faculty Development Program on Multi-Criteria Decision-Making with Machine Learning Techniques in Management Research 9-15 February 2024.
- 17. Dr Manoj Kumar Dash organized Faculty Development Program on H.R. Analytics January 28 to February 3, 2024.
- 18. Dr Manoj Kumar Dash (Co-Coordinator) organized National Conference on Climate Change and Renewable Energy Integration towards Net Zero, 16th and 17th March 2024.
- 19. Dr Manoj Kumar Dash served as Chief Editor for the quarterly publication of our Marathwada Center for Economic Development (M.C.E.D.).
- 20. Dr Narinder Singh Punn achieved best paper award for our paper published in the IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI).
- 21. Dr Anuraj Singh was selected as a member of the Indian National Young Academy of Science for the term from February 2024 to February 2029.

#### **Patents**

- 1. Sanjay Kumar Singh, Debanjan Sadhya, Anshul Sharma, Ravi Shankar Singh, Kundan Kumar, Rishav Singh, A Method and System for Identifying Cattle by Combining Unique Identification of Owner and Cattle, Patent No 539076, Patent Granted.
- 2. Somanath Pradhan, Vinal Patel, Nithin V George, An Apparatus for Cancelling Acoustic Feedback and A Method Thereof, Patent No 507174, Patent Granted.
- 3. Somanath Pradhan, Vinal Patel, Nithin V George, An Acoustic Feedback Cancellation System For Assistive



- Listening Device and Method Thereof, Patent No 537601, Patent Granted.
- 4. Shrivishal Tripathi, Divyansh Kushwaha, Deepanshu Pratik, Shivanshu Kumar Prajapati, Manoj Kumar Majumder, Vivek Tiwari, Anurag Singh, Sresha Yadav, Muneendra Ojha Title of Invention: System and Method for Determining Body Temperature using Smartphone Coupled with USB Thermal Camera, Patent, Patent No 473301, Patent Granted.
- 5. Vivek Tiwari, Ramjeevan Singh Thakur, Basant Tiwari, Ratnesh K. Dubey, Internet of Things Based Self Adaptive & Monitoring System for Agricultural Using Mobile Computing Device, Patent No 533560. Nam
- 6. Dr K V Arya Patent Granted: Design Patent Title "Bee-catcher Drone (339083-001)" granted on 04/04/2024 by The Patent Office, Government of India. Patent Granted.

#### **Invited Experts' Talks**

- 1. Title: Expert Talk on Exploring Enhanced Python Learning with CodeFobe, on Friday, May 24, 2024. Speaker: Sahil Sharma, Co-Founder and CEO of CodeFobe. Sahil is an alumnus of NSIT Delhi.
- 2. Cyber Crime Emerging Trends; Challenges & Use of open-source tools for Investigations, April 12, 2024. Speaker: Shri. Gurucharan Singh (Faculty Member Cyber Crime, Central Detective Training institute, Bureau of Police Research & Development, Chandigarh.
- 3. Title: Introduction to Deep Learning with Practical Experience, 12 February 2024. Speaker: Dr Puneet Gupta, currently working as an Assistant Professor in the Department of Computer Science and Engineering, Indian Institute of Technology, Indore.
- 4. Title: Navigating Complexity: Routing Problems and the Golden Routes of the Real World, on October 18, 2024. Speaker: Dr Sarang Kapoor, currently working with Locus Tech as a Lead Data Scientist.

#### STUDENTS' ACTIVITIES =

#### Annual cultural festival Aurora 2024

Aurora 2024, an annual cultural festival, promises a vibrant celebration of arts, music, dance, and cultural heritage. It typically features a variety of events, including performances by artists, workshops, food stalls, and exhibitions. Each year, the festival aims to bring together diverse communities to celebrate cultural diversity and creativity. It was celebrated for three days starting from March 15, 2024. Dr Somesh Kumar was the coordinator of the event.



#### PLACEMENT EVENTS @ ABV-IIITM GWALIOR



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#### **INSTITUTE IN NEWS**



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