
Report on International Conference on Advances in Science, Engineering and Technology (ICASET-2024), held on 30 and 31 July 2024 Organized by Department of Computer Application

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Report

on

International Conference on Advances in Science, Engineering and Technology (ICASET-2024)

Organized by

Department of Computer Application

Integral University, Lucknow

Dates: 30 – 31 July 2024

Sponsored by: Uttar Pradesh Council of Science & Technology (UPCST)

The "International Conference on Advances in Science, Engineering, and Technology ICASET-2024" was organized by the Department of Computer Application, Integral University, Lucknow from 30th July – 31st July 2024 in the Central Auditorium, Integral University. The objective of the conference was to provide a common platform for innovative academicians and industrial experts working in the fields of sciences, engineering, and information technology. The Department of Computer Application has provided an excellent opportunity for researchers, developers, and students from institutions of repute involved in academics and industry both in India and abroad to exchange and share scientific innovations and information. Majorly, this was to help stimulate interdisciplinary dialogue, collaboration, and the development of actionable insights and strategies to address current and future challenges.

The two-day conference brought together over **130 participants** from various countries and states, including researchers, practitioners, and industry professionals. The conference received an overwhelming response, with **311 paper submissions** reviewed by

approximately 90 National and International renowned Researchers. Out of these, 170 papers were accepted, and 102 papers were registered for technical presentations. The technical sessions were divided into 16 parallel sessions.

Special Sessions: The conference featured three special sessions to explore emerging trends and applications in various fields.

1. **Advocating Technology in Learning Environments:** Dr. Geetika Nidhi from Department of Education, Integral University, and Dr. Shruti Kirti Rastogi from Babasaheb Bhimrao Ambedkar University, Lucknow.
2. **Emerging Trends in Network Communication:** Dr. Saumya Bansal from Bharati Vidyapeeth's Institute of Computer Applications and Management (BVICAM), Delhi.
3. **Scalable Machine Learning for Health Care:** Dr. Mukesh Kumar, Dr. Sartaj Singh, Dr. Heena Khanna from Lovely Professional University, Jalandhar.

Keynote Speakers and Sessions: The conference also included insightful keynote sessions by distinguished speakers, covering a range of advanced topics.

- **Dr. Mehmat Ali Silgu** (Bartın University, Turkey): *Artificial Intelligence Applications in Traffic Engineering.*
- **Dr. Mohammad Siddique** (Majan University, Oman): *Application of Deep Learning Models for Change Detection Using Sentinel-1 Images.*
- **Mr. Vijay Misra** (IBM Silicon Valley Lab, USA): *Data Lakehouse Evolution*
- **Dr. Muhammad Irfan** (Najran University, Saudi Arabia): *Fault Detection, Diagnosis and Control of Wind Turbines.*
- **Dr. Anu Sayal** (Taylor's University, Malaysia): *Inventory Control and Models of Inventory Management.*
- **Dr. Balaji Rao K** (HCLTech, Noida): *Online Signature Generation using GAN Networks and Verification using Siamese Network.*
- **Dr. Suman Lata Tripathi** (Lovely Professional University, Jalandhar): *FinFET for Analog Circuit Design*

Key Insights:

Day 1 (30th July 2024): Inaugural Session

The ICASET-2024 commenced with a ceremonious inaugural session, graced by the presence of esteemed dignitaries. The session began with the floral welcome of **Dr. Syed Nadeem Akhtar**, Honorable Pro-Chancellor; **Mr. Syed Firoj Adil Naqvi**, Chief Guest; **Prof. Karm Veer Arya**, Guest of Honor; **Prof. Balasubramanian Raman**, Special Guest; **Prof. Abdul Azeez Kadar Hamsa**, Dean, Engineering & IT and **Prof. Aqil Ahmad**, Advisor to

Chancellor. Following the floral welcome, the dignitaries graced the stage to light the ceremonial lamp, symbolizing the dispelling of darkness and the dawn of new knowledge.

Following the ceremonial lamp lighting, the inaugural session continued with a cordial welcome address delivered by Prof. Abdul Azeez Kadar Hamsa, Dean of the Faculty of Engineering and IT. Prof. Hamsa, expressed his enthusiasm for the future of the faculty and the University. Highlighting the significance of interdisciplinary collaboration in advancing research and innovation, he fostered a productive and forward-thinking environment for the conference. His address emphasized the significance of ICASET-2024 as a platform for knowledge exchange and the development of new ideas.

Prof. Aqil Ahmad, serving as the Advisor to the Chancellor, provided an insightful introduction to Integral University. He outlined the institution's notable accomplishments and its steadfast dedication to academic excellence and ingenuity. Prof. Ahmad emphasized the University's vision to cultivate a culture of research and interdisciplinary collaboration. His words highlighted the importance of such conferences in advancing the frontiers of science, engineering, and technology, as well as in building a robust academic community.

The Special Guest, Prof. Balasubramanian Raman, Professor & Head of the Department of Computer Science and Engineering at Indian Institute of Technology, Roorkee, delivered an informative address centered on the transformative technologies of quantum computing, video analytics, Artificial Intelligence, and Machine Learning. He highlighted the crucial role that these advancements play in the contemporary technological environment and their significance to the theme of ICASET-2024. His insights emphasized how these innovations are driving progress across various fields and underscored their potential to shape the future of both research and industry.

The Guest of Honour, Prof. Karm Veer Arya, Professor & Head of the Department of Computer Science and Engineering at Atal Bihari Vajpayee-Indian Institute of Information Technology & Management (ABV-IIITM), Gwalior, delivered a compelling address focusing on the changing role of technology in academia and industry. He discussed the critical importance of emerging technologies in shaping the future of information technology and management.

The Chief Guest, Mr. Syed Firoj Adil Naqvi, who holds the position of Deputy Director General at the National Informatics Centre, Government of India, shared his profound insights regarding the evolution of Information and Communication Technology (ICT). Drawing from his extensive experience, Mr. Naqvi discussed his pivotal role in the development of ICT infrastructure and the leadership of significant projects that have reshaped India's technological domain. He discussed the importance of keeping pace with technological advancements and expressed his commitment to continuing his journey of innovation and contributing on a global scale.

The Honorable Pro-Chancellor, Dr. Syed Nadeem Akhtar, delivered an insightful address focusing on the significance of cutting-edge technologies, specifically Machine Learning, and its pivotal role in the future of science and industry. He emphasized the importance of incorporating advanced technologies similar to those developed by DeepMind, highlighting their potential to revolutionize various sectors. Dr. Syed Nadeem Akhtar elaborated on the

importance of integrating these technologies into research and development to remain at the forefront of global innovation and competitiveness.

The session concluded with the presentation of mementos to the distinguished guests as a token of appreciation for their valuable contributions to the conference. This was followed by a vote of thanks delivered by Prof. Mohammad Faisal, Organizing Chair, ICASET-2024 & Head, Department of Computer Application.



Day 1 (30th July 2024): Keynote Lectures, Invited Talks and Technical Sessions

Following the formal proceedings, the conference proceeded to the keynote lecture titled "**Artificial Intelligence Applications in Traffic Engineering**" delivered virtually by Dr. Mehmet Ali Silgu, an Assistant Professor in the Transportation Division at Bartın University, Turkey. Dr. Silgu's lecture focused on the integration of AI in traffic engineering, exploring its potential to revolutionize traffic flow management, enhance safety, and improve overall

transportation systems. His talk provided valuable insights into how AI-driven technologies are being applied to solve complex challenges in traffic management.

The next invited talk on "**Application of Deep Learning Models for Change Detection Using Sentinel-1 Images**" was presented by Dr. Mohammad Siddique from Majan University College, Oman. Dr. Siddique provided an insightful overview of how deep learning models can be effectively utilized for detecting changes in satellite images, offering practical applications and research findings that greatly contributed to the conference's discussions on emerging technologies.

The conference then proceeded with an invited talk on "**Data Lakehouse Evolution**" delivered online by Mr. Vijay Mishra, who is part of the Data and AI Business Unit at IBM Silicon Valley Lab, California. He shared his extensive experience in the field of data storage and cloud technologies. Mr. Vijay discussed the evolution of data lakehouses, highlighting how they are transforming data storage and retrieval processes. His insights into the integration of AI within the Watson platform provided valuable perspectives on the future of data management and analytics.

The post-lunch session of the conference featured an invited talk by Dr. Muhammad Irfan from Najran University, Saudi Arabia, on "**Fault Detection, Diagnosis and Control of Wind Turbines: A Future Perspective of Renewable Energy Resources**". Dr. Irfan, an Associate Professor, shared his insights on the critical aspects of fault detection and control in wind turbines. He discussed the role of advanced technologies, such as AI and IoT, in enhancing the reliability and efficiency of renewable energy systems, making a significant contribution to the discussions on sustainable energy solutions.

The conference continued with an invited talk on "**Inventory Control and Models of Inventory Management**" delivered by Dr. Anu Sayal, a Senior Lecturer, at Taylor's Business School, Taylor's University, Malaysia. She provided valuable insights into the complexities of inventory management and the mathematical models that can optimize inventory control processes. Her talk highlighted the importance of effective inventory management in both academic and practical applications, contributing significantly to the exploration of advanced technologies in business and industry.

After Dr. Anu Sayal's insightful talk, the conference proceeded with four parallel technical sessions, held across Hall 1, Hall 2, Hall 3, and Hall 4. Each hall hosted six to seven paper presentations, where participants shared their research findings on various topics related to science, engineering, and technology. The sessions were well-attended and featured engaging discussions and valuable exchanges of ideas. Day 1 of the conference concluded with a networking session over high tea, allowing attendees to reflect on the day's events and connect with fellow researchers and professionals.



Day 2 (31st July 2024): Invited Talks and Technical Sessions

The second day of the conference began at 9:30 AM with two invited talks.

The first talk, delivered online by Dr. Balaji Rao K, Senior Technical Lead at HCL Technology, Noida, focused on **"Online Signature Generation using GAN Networks and Verification using Siamese Network"**. Dr. Rao shared his expertise in AI and Generative AI. His address provided a detailed exploration of how GAN networks can be used for generating online signatures and how Siamese Networks are utilized for verification, offering significant insights into the application of these advanced technologies in secure authentication systems.

Following the first talk, the second invited talk of the morning session was delivered by Dr. Suman Lata Tripathi, a distinguished Professor at Lovely Professional University, Jalandhar. Her presentation focused on **"FinFET for Analog Circuit Design"** where she explored the advancements and challenges in using FinFET technology for analog circuits. Drawing from

her extensive experience in microelectronics and VLSI design, Dr. Tripathi provided an in-depth analysis of FinFET's applications, highlighting its significance in modern electronic design.

Day 2 (31st July 2024): Invited Talk and Valedictory Function

After the morning technical sessions held across all four halls, the post-lunch session began with an invited talk by Dr. M.V. Reddy, delivered online from Nouveau Monde Graphite (Montreal, Canada). Dr. Reddy, a leading expert in materials science and energy storage technologies, focused on "**Advances in Materials for Energy Storage and Sustainability**". He discussed the latest developments in energy storage materials, highlighting their importance in achieving sustainable energy solutions. His talk provided valuable insights into the future of energy storage technologies, making a significant impact on the conference discussions.

After the technical sessions and the final invited talk, the valedictory function marked the conclusion of the conference. The session began with a floral welcome for the dignitaries, including Registrar, Professor Mohd Haris Siddiqui; Chief Guest, IPS Dr. Sanjay M. Tarade; Director of the Human Resource Development Centre (HRDC), Professor Syed Aqeel Ahmad; Controller of Examination & Dean of Sciences, Professor Abdul Rahman Khan; and the Dean, Professor Abdul Azeez Kadar Hamsa.

Dr. Tasneem Ahmed, Convener, ICASET-2024 delivered the welcome address and provided a comprehensive report on the two-day event.

This was followed by an address from Prof. Syed Aqeel Ahmad, Director, Human Resource Development Centre (HRDC). With his extensive background in civil engineering and transportation planning, Professor Ahmad shared valuable insights from his vast experience in academia and consultancy. His address emphasized the importance of continued innovation and collaboration in the field of engineering and technology.

Prof. Abdul Rahman Khan, Controller of Examination and Dean, Sciences at Integral University, delivered an insightful address focusing on the importance of academic integrity and excellence in the university's examination processes. He discussed the role of rigorous scientific research and innovation in advancing the university's academic standing. Professor Khan highlighted the critical need for maintaining high standards in both teaching and research, encouraging continued dedication to these values.

The Chief Guest, Dr. Sanjay M. Tarade, IPS, and Director General of Telecom for Uttar Pradesh Police, delivered a powerful address emphasizing the critical role of technology in modern law enforcement. Drawing from his extensive academic background in Mechanical Engineering, Cyber Security, and Cyber Law, Dr. Tarade highlighted the integration of advanced technologies like cyber security frameworks within policing. He shared insights on how these innovations are vital for enhancing public safety and law enforcement efficiency. He emphasized the importance of applying computer science, AI, and ML to real-world challenges. Furthermore, he encouraged the audience to actively seek out practical applications of these technologies in their surroundings, stressing that the true power of learning lies in its application. Dr. Tarade also inspired the attendees to keep the flame of

curiosity and learning alive, urging them to continuously explore and innovate within their fields to drive meaningful progress.

Prof. Mohd Haris Siddiqui, Registrar, Integral University, delivered an insightful address highlighting the university's commitment to academic excellence and quality campus life. He talked about the importance of a faculty-led learning environment and the advancements made under his leadership in academic administration and student support services. He encouraged the continued pursuit of excellence and innovation, stressing the vital role these play in shaping the future of the university and its students.

The valedictory session concluded with the presentation of mementos to the esteemed guests, as a gesture of appreciation for their contributions to the conference. This was followed by a heartfelt vote of thanks delivered by Dr. Farooq Ahmad, Assistant Professor and Organizing Secretary, ICASET-2024. Dr. Ahmad expressed gratitude to all the dignitaries, participants, and organizing team members for their efforts in making the conference a success. His closing remarks emphasized the significance of the collective contributions to the event's overall success.

The success of this conference was due to the dedication of our speakers, the enthusiasm of our attendees, and the support of our sponsors and partners. The two-day conference was skillfully coordinated and managed by **Prof. Mohammad Faisal, Organizing Chair and Head of the Department; Dr. Tasneem Ahmed, Convener; Dr. Shrish Bajpai, and Dr. Farooq Ahmad, Organizing Secretaries of ICASET-2024.**

Dr. Afreen Khan skillfully anchored the conference on both days, ensuring a smooth flow of events and engaging the audience with her eloquence.



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