





# **ICDAM-2025**

# 6<sup>th</sup> International Conference on Data Analysis and Management

**Organized by** London Metropolitan University, London, UK (Venue Partner) in association with

WSG University, Bydgoszcz, Poland, Europe

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Portalegre Polytechnic University, Portugal, Europe

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BPIT, GGSIPU, Delhi Date: 13<sup>th</sup> -14th June 2025

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SPECIAL SESSION ON Data-Driven Approaches in Biotechnology and Bioinformatics

**SESSION ORGANIZERS:** 

Dr. Dheeraj Chitara Department of Biotechnology, School of Sciences, JECRC University, Sitapura, Jaipur, India. Email: <u>dheerajchitara@outlook.com, dheeraj.chitara@jecrcu.edu.in</u>

Dr. Prashant Kumar Q-Line Biotech Private Limited, Lucknow, Uttar Pradesh, India. Email: <u>kumar.prashantbds@gmail.com</u>

### **EDITORIAL BOARD:**

Dr. Khem Chand Saini Department of Biotechnology, School of Sciences, JECRC University, Sitapura, Jaipur, India. Email: <u>khem.saini@jecrcu.edu.in</u>

Dr. Nidhi Verma Department of Biotechnology, School of Sciences, JECRC University, Sitapura, Jaipur, India. Email: <u>nidhi.verma@jecrcu.edu.in</u>

### **SESSION DESCRIPTION:**

The session on "Data-Driven Approaches in Biotechnology and Bioinformatics" aims to delve into the transformative role of data analytics and computational methodologies in advancing these dynamic fields. Emphasizing the integration of artificial intelligence (AI), machine learning (ML), big data analytics, and cloud computing, this session explores how these technologies are driving innovation and solving complex challenges in biotechnology and bioinformatics. Al and ML are revolutionizing bioinformatics by enabling the efficient analysis of vast genomic and proteomic datasets, predicting protein structures, and uncovering intricate biological interactions. Big data analytics plays a critical role in managing and interpreting the large-scale datasets generated by biotechnology research, while cloud platforms provide scalable and collaborative environments for data storage and analysis. Computational drug discovery, powered by machine learning, accelerates drug-target predictions, optimizes drug development pipelines, and supports the advancement of personalized medicine.

The session also explores how digital twin technology is creating virtual replicas of biological systems, offering new possibilities for personalized healthcare and therapeutic simulations. Next-generation sequencing (NGS), coupled with advanced data analytics and cloud computing, ensures precise genomic insights, enabling breakthroughs in clinical diagnostics and precision medicine. Blockchain technology ensures data security, integrity, and traceability for biological datasets, while addressing challenges like scalability and compliance. Additionally, IoT-enabled devices facilitate continuous monitoring of biological data, enhancing laboratory automation and remote diagnostics.

This session provides a comprehensive overview of data-driven innovations in biotechnology and bioinformatics, showcasing cutting-edge applications, addressing challenges, and highlighting future opportunities. Attendees will gain valuable insights into how these approaches are shaping the future of these fields, fostering collaboration and driving impactful advancements.

#### **RECOMMENDED TOPICS:**

Topics to be discussed in this special session include (but are not limited to) the following:

- 1. Artificial Intelligence and Machine Learning in Genomics
- 2. Big Data Analytics for Biotechnology Research
- 3. Cloud Computing in Bioinformatics
- 4. Computational Drug Discovery and Personalized Medicine
- 5. Next-Generation Sequencing (NGS) and Data Analytics
- 6. Digital Twin Technology in Biotechnology
- 7. Blockchain for Securing Biological Data
- 8. Internet of Things (IoT) in Real-Time Biological Data Monitoring
- 9. Integrating Omics Data through Advanced Analytics
- 10. Ethics, Privacy, and Challenges in Data-Driven Biotechnology

#### **SUBMISSION PROCEDURE:**

Researchers and practitioners are invited to submit papers for this special theme session on **Data-Driven Approaches in Biotechnology and Bioinformatics on or before 31 March 2025.** All submissions must be original and may not be under review by another publication. INTERESTED

AUTHORS SHOULD CONSULT THE CONFERENCE'S GUIDELINES FOR MANUSCRIPT SUBMISSIONS at <u>https://icdam-conf.com/downloads</u>. All submitted papers will be reviewed on a double-blind, peer-review basis.

**NOTE:** While submitting a paper in this special session, please specify **Data-Driven Approaches in Biotechnology and Bioinformatics** at the top (above paper title) of the first page of your paper.

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