



International Conference on Data-Processing and Networking (ICDPN-2025)

Date: 7th – 8th November, 2025

ORGANISED BY : Institute of Technology and Business in České Budějovice,
Near Prague, Czech Republic, Europe (Venue).

***** **CALL FOR PAPERS** *****

SPECIAL SESSION ON

"Intelligent Data Systems and Resilient Network Security: Bridging AI and Cybersecurity"

SESSION ORGANIZERS:

1. Dr. Nikhil Kumar Marriwala

Associate Professor, Dept. of ECE
Kurukshetra University, Kurukshetra, India
Email: nmarriwala@kuk.ac.in
Phone number: 9416668482

2. Dr. Vinod Kumar Shukla

Amity University Dubai, UAE
Email: vshukla@amityuniversity.ae

3. Dr. Shruti Jain

Professor, Department of ECE
Jaypee University of Information Technology,
Waknaghat Distt. Solan, Himachal Pradesh, INDIA
shruti.jain@juitsolan.in

EDITORIAL BOARD: (Optional)

SESSION DESCRIPTION:

The rapid evolution of data-processing technologies and networking infrastructures has created unprecedented opportunities and challenges in managing large-scale, heterogeneous data while ensuring security, scalability, and efficiency. This special session at ICDPN-2025 aims to explore cutting-edge advancements in **AI-driven data analytics**, **secure network architectures**, and **next-generation protocols** that address the demands of modern applications such as IoT, Industry 4.0, and smart cities.

Key challenges include handling real-time data streams, ensuring privacy in distributed systems, mitigating cyber threats in networked environments, and optimizing energy-efficient computation.

This session will focus on novel methodologies, tools, and case studies that bridge the gap between theoretical innovations and practical implementations. Submissions are encouraged to highlight interdisciplinary approaches, including machine learning, blockchain, edge computing, and quantum-resistant cryptography, to solve pressing issues in data-processing and networking.

RECOMMENDED TOPICS:

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

- 1. AI/ML for Data Processing:**
 - Real-time analytics and predictive modeling.
 - Federated learning and privacy-preserving AI.
 - Explainable AI (XAI) in decision-making systems.
- 2. Secure Networking Architectures:**
 - Zero-trust frameworks for IoT/5G/6G networks.
 - Blockchain for decentralized trust management.
 - Post-quantum cryptography in network security.
- 3. Scalable Data Systems:**
 - Edge-cloud orchestration for low-latency processing.
 - Big data optimization in distributed environments.
 - Energy-efficient algorithms for green computing.
- 4. Emerging Applications:**
 - AI-driven cybersecurity threat detection.
 - Networking protocols for autonomous systems (drones, vehicles).
 - Data ethics, governance, and compliance in global networks.
- 5. AI-Augmented Network Automation and Adaptive Systems**
 - Dynamic resource allocation using reinforcement learning in software-defined networks (SDN).
 - Self-healing networks for fault prediction and automated recovery in 5G/6G ecosystems.
 - Intent-based networking (IBN) powered by natural language processing (NLP) and AI-driven policy enforcement.
- 6. Ethical AI and Human-Centric Network Design**
 - Bias detection and mitigation in AI-driven data pipelines.
 - Human-in-the-loop AI systems for collaborative decision-making in critical networks.
 - User-centric privacy controls and consent management in federated learning environments.

SUBMISSION PROCEDURE:

Researchers and practitioners are invited to submit papers for this special theme session on **[session name] on or before [30th MAY 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 <https://www.icdpn->

conf.com/Downloads. All submitted papers will be reviewed on a double-blind, peer review basis.

NOTE: While submitting paper in this special session, please specify [**Session Name**] at the top (above paper title) of the first page of your paper.

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