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## INVITATION TO CONTRIBUTE TOWARDS INTERNATIONAL CONFERENCE ON DIGITAL FUTURES & TRANSFORMATIVE TECHNOLOGIES (ICODT2)

College of Aeronautical Engineering (CAE) was established in 1965 as the pioneer of the Avionics and Aerospace Engineering Programs in Pakistan. Over the past six decades, the College has grown into a well-reputed institution, duly affiliated with National University of Sciences & Technology (NUST), and offers undergraduate degrees in Avionics and Aerospace Engineering and postgraduate degrees in Avionics, Electrical, Aerospace, Mechanical, Industrial & Manufacturing, Engineering Management, and Aviation Management disciplines.

CAE has been contributing significantly to Research & Development efforts in related disciplines of Sciences & Technology. To further augment these initiatives and promote a culture of collaboration, the College is hosting the 4<sup>th</sup> sequel of International Conference on Digital Futures and Transformative Technologies (ICoDT2) on 15 - 16 October 2024 at NUST Headquarters, Sector H-12, Islamabad. ICoDT2 is a flagship conference of NUST, technically co-sponsored by IEEE, and promises to be an international platform for cutting-edge research, knowledge exchange, and networking for Academia, Industry and Public Sector.

I am writing to request your esteemed organization's support by promoting active participation from researchers and engineers to partner through submission of their research in relevant fields. The details about the conference, including submission guidelines and deadlines, can also be accessed on <https://icodt2.cae.nust.edu.pk/>.

Best Regards,

24 April, 2024

  
(MUHAMMAD ASIM)  
Air Commodore  
Commandant CAE

*Addl Registrar Aecord*  
*3/5/24*

# International Conference on **DIGITAL FUTURES** and TRANSFORMATIVE TECHNOLOGIES

**15 & 16 October, 2024**

## CONFERENCE SCOPE

International Conference on Digital Futures and Transformative Technologies (ICoDT2) aims to provide a superior international forum for sharing knowledge and results in theory, methodology, and applications of Intelligent Systems. The Conference looks for significant contributions to all major fields of the Intelligent Systems in theoretical and practical aspects. The aim of ICoDT2 is to provide a platform to researchers and practitioners from both academia as well as industry to meet and share cutting-edge development in the field.

The conference is proudly hosted by National University of Sciences and Technology (NUST), Pakistan.

The conference invites contributions in the areas of Artificial Intelligence, Cyber Security, Embedded / IoT Systems, Flight Dynamics, Guidance, Navigation, Controls, Autonomous Systems, Materials, Structures, Propulsion, Turbo Machinery, and Space Technologies.

### Important Dates:

Abstract submission date:	04 May, 24
Full paper submission date:	14 Jun, 24
Notification of acceptance :	30 Jul, 24
Notification of 2nd Review:	14 Aug, 24
Final paper submission date:	30 Aug, 24
Conference registration:	15 Sep, 24

### 1. Artificial Intelligence

- Explainable AI (XAI)
- Federated Learning
- Adversarial Machine Learning
- Self-supervised learning
- Human-centered AI
- Model Compression
- Multimodal Interaction
- Digital Human
- Generative and Composite AI
- AI Applications
- Meta-learning
- Adaptive Reinforcement Learning
- Ensemble Learning
- AI for Aerospace, Propulsion and Advanced Structures

### 2. Information Security, Computing and Embedded / IoT Systems

- Security of Network Centric Aviation Systems
- IoT Security
- Embedded Systems Security
- Autonomous Security
- Cryptography
- Malware Analysis & Digital Forensics
- Network Security
- Cyber Threat Intelligence
- Android / iOS Security

### 2B. Computing and Embedded / IoT Systems

- Emerging Sensor Technologies, Networks and Applications
- Cyber Physical Systems / IoT
- Smart Sensors for Industry 4.0 and beyond
- Smart Dust & Edge Computing / Networking
- Neuromorphic Computing
- Robotic Process Automation
- AR / VR / XR / WebAR Systems

### 3. RF, Microwave and Radar Engineering

- Antenna Systems and Architectures
- Millimeter Wave Antennas
- MIMO Antennas
- RFID Tags, Antennas, Sensors and Systems
- Body Propagation, Effects of Biological Tissues on Propagation
- Microwave Filters, Reconfigurable Filters, Filters for 5G
- Microwave Active and Passive Devices
- Power Amplifiers, Power Dividers and Couplers
- Radar Signal Processing

### 4. Aero / Flight Dynamics, Guidance, Navigation, Controls (GNC) & Autonomous Systems

- Aircraft Dynamics, Performance, Stability, and Control
- Fluid-Structure Interactions
- Hypersonic - Aerothermodynamics
- Supersonic / Hypersonic Boundary Layer Transition
- Modeling and Simulations of Hypersonic Flows

- Transonic Buffet
- Shock Wave / Turbulent Boundary Layer Interactions
- Unmanned / Hypersonic Vehicles, Air Taxi / Air Mobility
- Guidance, Navigation and Controls (GNC)
- Swarm Formation
- Autonomous Flight Controls
- Launch Vehicle, Missile, and Projectile Flight Mechanics
- Missile and Trans-Atmospheric Vehicle Dynamics, Stability, and Control

### 5. Manufacturing, Material & Structures

- Manufacturing processes, materials and structure optimization
- Additive / Smart Manufacturing for Aerospace Applications
- Smart and Adaptive Materials: Design, Synthesis and Applications
- Structural Health Monitoring in Aerospace Vehicles
- Composite Materials: Mechanics, Modeling, and Applications
- Structural Dynamics and Aero Elasticity
- Aircraft Structural Design
- Emerging Trends in Non-Destructive Testing (NDT)
- Damage and Failure Analysis
- Qualification and Certification
- Computational Methods for Integrity Assessment and Optimization
- Quality & Reliability Engineering
- Reverse Engineering and Rapid Prototyping
- Computer Aided Manufacturing (CAM)

### 6. Propulsion, Turbomachinery and Space Technologies

- Turbomachinery Design and Performance Analysis
- Mathematical Modeling of Turbo-Machinery
- Combustion Analysis
- Heat Transfer Analysis of Turbo-Machinery
- Exhaust / Emission Analysis and Mitigation Techniques
- Compressor / Turbine Blade Performance Improvement
- Energetic and Exegetic Analyses of Engine Cycles
- Engine Knocking and Other Issues (Analysis and Mitigation Techniques)
- Novel Engine Cooling Techniques
- Electric Propulsion Systems
- Space Missions, Systems and Architecture
- Satellite Subsystem Design
- Systems and Technologies for CubeSats
- Electric Thrusters Designing
- Image and Signal Processing for Remote Sensing
- Space Security, Payload, Stability and Sustainability
- Satellite Constellation Design and Management
- Satellite Development and Manufacturing
- Remote Sensing Instruments and Sensors
- Rocket Engines and Rocket Propulsion
- Guidance, Navigation and Control of Satellite
- Global Navigation Satellite Systems (GNSS)