



ICAIN-2025
International Conference on Artificial
Intelligence and Networking

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Organized by
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In association with
Indian Institute of Information Technology, Allahabad

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

SPECIAL SESSION ON

Recent Artificial Intelligence Applications and Research in Structural Health Monitoring

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SESSION DESCRIPTION:

This special session invites researchers, practitioners, and industry experts to explore how Artificial Intelligence (AI) is reshaping the way we monitor and maintain our built environment. With the increasing use of sensors in buildings, bridges, and other infrastructure, we're now generating more data than ever before. The challenge lies in making sense of it - and that's where AI, especially Machine Learning (ML) and Deep Learning (DL), is stepping in.

Artificial intelligence-based solutions are allowing us to go beyond traditional practice by having the capability to detect damage automatically, recognize cracks and spalls, quantify the severity of the same, and even calculate how long a building can be safely occupied. They are also allowing us to have more advanced capabilities like segmenting damaged structures in real time, assessing the impact of temperature on the response of structures, and simulating the response of buildings to natural hazards like earthquakes.

This session will offer an opportunity to share how AI is being used in real-world, everyday settings - whether it's having drones fly around checking out inaccessible buildings, or using computer vision models to identify early wear and tear. Presentations will cover a range of topics from semantic and instance segmentation, stiffness loss prediction, to intelligent decision-making for maintenance planning.

Although the use of AI in structural health monitoring is in its early stages, it is clear that we are only just beginning. This session will share the most recent advances and the thrilling future that lies ahead, driving us towards more proactive, intelligent, and resilient infrastructure systems.

RECOMMENDED TOPICS:

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

- **Building a Structural Health Monitoring Framework**
- **Capturing Structural Behavior: Sensors and Data Collection**
- **AI-Driven Vibration-Based Monitoring**
- **Vision-Based Monitoring Using AI**
- **Predicting Structural Responses to Major Earthquakes**
- **Current Challenges in Structural Health Monitoring**

SUBMISSION PROCEDURE:

Researchers and practitioners are invited to submit papers for this particular theme session on “**Recent Artificial Intelligence Applications and Research in Structural Health Monitoring**” on or before **20th July 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.icain-conf.com/downloads>. All submitted papers will be reviewed on a double-blind, peer-review basis.

NOTE: While submitting a paper in this special session, please specify [Session Name] at the top (Above Paper Title) of the first page of your paper.
