



7th International Conference on Data Analytics & Management (ICDAM-2026)

Date: 12th – 14th June, 2026

ORGANISED BY: London Metropolitan University, London, UK (Venue Partner)

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

SPECIAL SESSION ON

From Data to Decisions: AI Transforming Structural Monitoring

SESSION ORGANIZERS

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SESSION DESCRIPTION:

Civil infrastructure is an integral part of everyday life, which supports both basic human needs and complex social processes. From homes, roads, and shopping centers to large systems such as bridges, tunnels, and railways, these structures are the pillars of modern civilization. Concrete structures, although generally perceived to be strong and resilient, are not immune to deterioration and wear and tear with the lapse of time. Regular inspection and maintenance are thus imperative to make sure that their strength is not compromised and that they remain safe to use.

Various intrinsic and extrinsic factors like aging, mechanical loading, construction practice, material composition, temperature fluctuations, and weathering lead to progressive degradation in concrete structures. This degradation manifests itself most commonly in the form of surface defects like

cracking, blistering, scaling, and spalling. Among these, cracking and spalling are of particular importance as indicators of structural distress. Cracking may be due to shrinkage or thermal stress, and spalling, typically circular or oval in nature, takes place due to moisture penetration and internal pressure progressively leading to flaking off of the material.

Not only do these faults reduce the load-carrying capacity of the structure, but also the risk of catastrophic collapse. Even slight waviness on the surface, if left unchecked, can undermine the overall life of the infrastructure, with serious economic and safety consequences. Effective and periodic monitoring is therefore of utmost importance for the early detection of damage and for the long-term performance and durability of concrete structures.

RECOMMENDED TOPICS:

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

- Integrating IoT and AI for Proactive Infrastructure Health Monitoring
- Emerging Technologies for Early Detection of Structural Weaknesses
- Automation and Robotics in Surface Inspection of Built Infrastructure
- From Cracks to Collapse: Modeling the Life Cycle of Concrete Structures
- Strengthening Infrastructure Resilience through Smart Monitoring Systems
- Vision and Vibration-Based Methods for Structural Damage Detection

SUBMISSION PROCEDURE:

Researchers and practitioners are invited to submit papers for this special theme session on **[From Data to Decisions: AI Transforming Structural Monitoring] on or before [20th Feb, 2026]**. 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://icdam-conf.com/>. 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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