



# ARTISTE2025

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## Keynote Speaker Bio



### José António Silva Carvalho Campos Matos

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Assistant Professor, with habilitation, at Department of Civil Engineering of the School of Engineering of University of Minho. Member of ISISE- Institute of Sustainability and Innovation in Structural Engineering, being the head of the Risk and Asset Management of Civil Infrastructures (RAmCI) cluster. He is also the current Director of the Mobility and Transportation HUB of Minho University (TMOB-HUB). Graduated in civil engineering in 2002, he obtained a master's degree in civil engineering structures in 2008 and a PhD in civil engineering in 2013, in the field of reliability and risk analysis of existing structures. Author or co-author of more than 350 publications in international conferences and journals, in the field of risk and resilience analysis, O&M of civil infrastructures, quality control procedures, among others. Jose C. Matos was also mentor/supervisor of many master, doctoral and post-doctoral students, and participated in more than twenty research projects, since 2013, attracting a fund larger than 8ME for the University of Minho. Particularly, important to enhance the coordination of COST Action TU1406, SIRMA INTERREG Atlantic, and more recently, NORISK Erasmus Mundus Joint Master. He is also member of several associations and policy makers, such as IABSE (currently Vice President, and Vice Chair of Commission 5), fib (Chair of Commission 8) and EuroStruct (ex-President and Founder).

### Keynote Title:

## How Artificial Intelligence could be used towards the sustainable Management of existing infrastructures

### Abstract

Artificial Intelligence (AI) can significantly enhance the sustainable management of existing infrastructures through various applications, including, among others: (i) Predictive Maintenance: AI algorithms analyse data to predict failures before they occur, reducing downtime and extending infrastructure lifespan while minimizing resource use; (ii) Multicriteria Optimization: AI models optimize the decisions concerning operation and maintenance of infrastructures, leading to reduced carbon footprints; (iii) Asset Monitoring and Inspection: Using AI-powered image and video analysis (e.g., drone, CCTV), infrastructure components like bridges, roads, and pipelines can be regularly inspected for damages or degradation, enabling timely repairs and extending their lifetime; and (iv) Integration with IoT and Big Data: Combining AI with IoT devices and large datasets enables real-time decision-making, proactive maintenance, and adaptive operations aligned with sustainability goals. By leveraging these AI-driven approaches, it is possible to manage infrastructure more sustainably, reducing environmental impact, and extending infrastructure lifespan—all while maintaining safety and efficiency.