

ABOUT THE COURSE

This course offers a solid foundation in Structural Health Monitoring (SHM), emphasising its role in risk management, reliability, and resilience (the "3R" framework). Aimed at infrastructure professionals, it blends theory with practical tools for assessing structural performance and safety. Key topics include risk and reliability quantification, direct and indirect SHM methods for damage detection, and data-driven decision-making across an asset's lifecycle. The course also uses case studies to illustrate real-world applications and ongoing challenges in SHM.

The course also explores data acquisition strategies and the vital role of sensing technologies. Attendees will gain a working understanding of sensor types, selection criteria, and deployment practices critical to any successful SHM implementation. Building on this, lectures also include a forward-looking examination of artificial intelligence for predictive and adaptive infrastructure monitoring. Specialised lectures address computer vision applications for

automated damage detection, as well as deep learning methods for early-age concrete strength monitoring using smart sensors and AI algorithms.

This course is ideal for structural inspection engineers, asset managers, and researchers seeking to understand and implement state-of-the-art SHM strategies.

WHO SHOULD ATTEND

Engineers and scientists involved in the design, operation and assessment of structural health monitoring (SHM) of engineering structures. **ATTENDANCE CERTIFICATES WILL BE GIVEN AFTER THE COURSE**

COST

The registration fee of the workshop will be £695 plus VAT (VAT UK Only) which includes course notes.

PAYMENT

Payments can be made by cheque (made payable to ASRANet Ltd.), cash or bank transfer. Please enquire for details.

CONTACT

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ONLINE SHM- Enabler of 3R (Risk, Resilience and Reliability)

24-25 February 2026



PROGRAMME

(All timings in GMT)

Thursday 24th February 2026

08:00-09:30	Lecture-1 Introduction to SHM and the 3R (risk, resilience and reliability) / SHM as enabler of 3R Dr. Donya Hajializadeh
09:30-09:45	BREAK
09:45-11:15	Lecture-2 Risk and Reliability quantification Dr. Donya Hajializadeh
11:15-11:45	LUNCH
11:45-13:15	Lecture-3 SHM methodologies and overview of direct and indirect approaches Dr. Donya Hajializadeh
13:15-13:30	BREAK
13:30-15:00	Lecture-4 SHM and Decision Making including case studies and future trends. Dr. Donya Hajializadeh

Thursday 25th February 2026

08:00-09:30	Lecture-5 Structural Health Monitoring: Data Acquisition and the Role of Sensing Dr. Jiping Bai
09:30-09:45	BREAK
09:45-11:15	Lecture-6 Machine Learning in Structural Health Monitoring Dr. Jiping Bai
11:15-11:45	LUNCH
11:45-13:15	Lecture-7 Advanced Computer Vision Techniques for Structural Health Monitoring (SHM) Dr. T Jothi Sarvanan
13:15-13:30	BREAK
13:30-15:00	Lecture-8 Deep Learning Techniques for Monitoring Early-Age Concrete Strength Dr. T Jothi Sarvanan

Dr Donya Hajializadeh



Dr Donya Hajializadeh is a chartered engineer and senior lecturer at the University of Surrey, with more than a decade of experience in industry- focused research in the areas of structure and infrastructure health monitoring, application of machine learning approaches in data-driven damage identification systems and risk, reliability and resilience-focused decision – making in transport infrastructure and systems. As project lead, co-investigator, technical lead / co-lead, and principal / co-supervisor, she has worked and successfully delivered over 50 commercial and research projects on time and on budget. She is an active member of several professional bodies, including the Institution of Civil Engineers, the Institution of Structural Engineers, the Institution of Engineers of Ireland and the Women’s Engineering Society.

Dr. Jiping Bai



Dr Bai is an Associate Professor in civil engineering at University of South Wales, UK. He has focused his research on sustainable construction materials, structural analysis and design to Eurocodes including steel and concrete structures. With over 20 years of experience in lecturing, consulting, and researching in the field of sustainable development and structural engineering, Jiping has specialised in sustainable construction via waste utilisation and recycling practices, analysis of structural durability through modelling approaches, and the evaluation and optimisation of quality standards. His research endeavours investigate the intricate dynamics among structural materials, their performance within structural systems, and their interactions within the surrounding environment.

Passionate about bridging academic research with industry practice, particularly through the integration of advanced technologies into engineering design and assessment, more recently, Dr Bai has expanded into developing intelligent systems that incorporate machine

learning for structural inspection and health monitoring, aiming to enhance the performance and lifespan of structures for a more sustainable and resilient built environment.

Dr. T Jothi Saravanan



Dr. T. Jothi Saravanan is an Assistant Professor at the Department of Civil Engineering, School of Infrastructure, Indian Institute of Technology Bhubaneswar, Odisha, INDIA. He obtained doctoral degree in Civil Engineering from The University of Tokyo, Japan in 2018 with Thesis Adjudged Excellent. Following his doctorate, Dr. Jothi Saravanan worked as JSPS Postdoctoral Fellow at the Institute of Advanced Sciences, Yokohama National University, Japan under Japan Society for the Promotion of Science. This fellowship program aims to foster international scientific collaboration in Japan. The sponsored research project focuses on computer vision-based structure monitoring and was funded

with a 2.4-million-yen grant-in-aid. Dr. Jothi Saravanan is a recipient of various fellowships / scholarships namely, Quick Recruitment Scientist (Fellow) by the CSIR, India in 2014- 15; Monbukagakusho: MEXT Scholarship by Govt. of Japan in 2015-2018; Visiting Scholar to University of Cambridge, UK in 2016.

Promising Young Structural Engineer Award- IAStructE National Awards 2023. Presently, Dr. Jothi has several ongoing R&D and sponsored industry projects. Dr. Jothi Saravanan's research focuses on structural health monitoring, structural dynamics, computer vision, deep learning, smart materials, UAV based visual inspection, augmented reality, digital twin, and infrastructure condition assessment. He has authored more than 12 book chapters, 45 journal papers, 42 conference papers and 2 technical reports. He serves on the Editorial Board of Scientific Reports (Springer Nature) and reviewer for various journals.