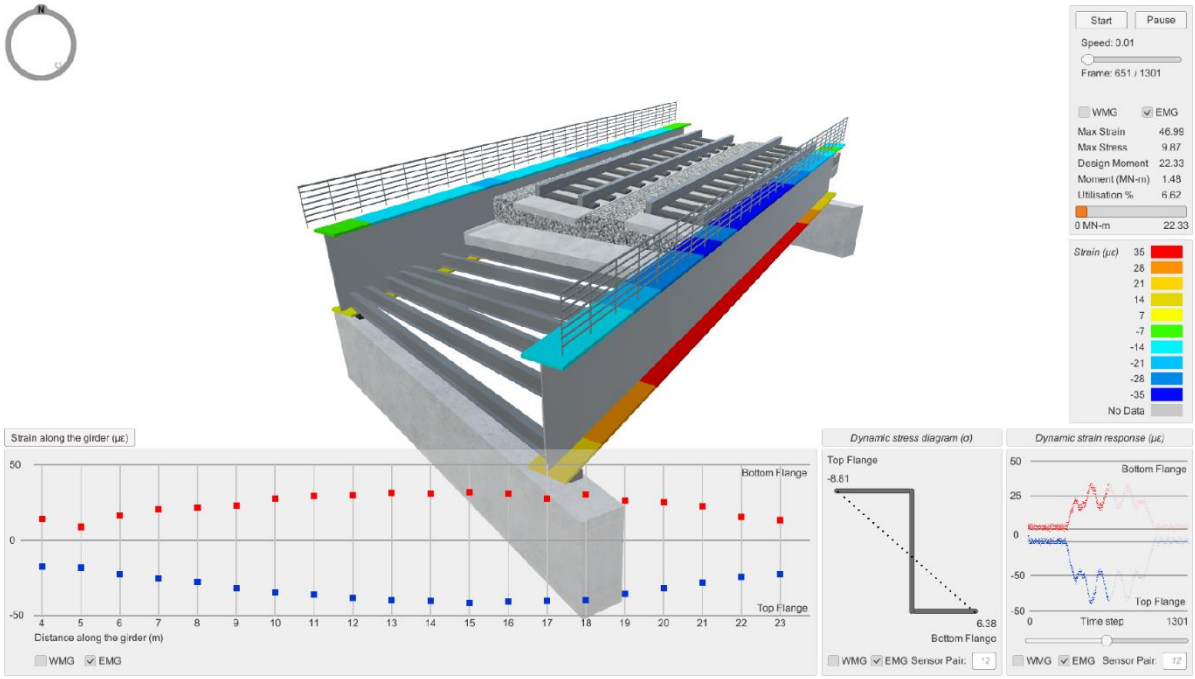
UWE Bristol's Dr Manuel Davila Delgado and author team win the 2019 J James R Croes Medal from the American Society of Civil Engineers

Dr Manuel Davila Delgado (far right) and Dr Ioannis Brilakis (far left) attend the awards ceremony to receive the 2019 J. James R. Croes Medal.

Dr Manuel Davila Delgado, Dr Liam Butler, Dr Ioannis Brilakis, Dr Mohammed Elshafie and Professor Campbell R. Middleton received the **2019 J. James R. Croes Medal.** The medal was awarded on 18 June in Atlanta (USA) by the American Society of Civil Engineers (ASCE) for the article: "Structural Performance Monitoring Using a Data-Driven and Dynamic BIM Environment", published in the May 2018 edition of the ASCE Journal of Computing in Civil Engineering.

The article presents an approach to develop data-driven Digital Twin systems for monitoring the structural performance of infrastructure assets in a dynamic manner. The article demonstrated this approach in a case study in which a steel rail bridge was instrumented with fibre optics sensors and modelled into a geometric Digital Twin. The sensor time series data were integrated with the geometry and used to monitor the structural performance of the bridge when trains pass along it. The prototype provides a dynamic indication of the load capacity used when trains cross the bridge.

Dr Manuel Davila Delgado said: "I am pleased that our seminal work on data-driven structural monitoring in a Digital Twin environment is being recognised. This award is evidence of the quality of our research, its practical value and high-impact contributions to engineering practice."



Graphical User Interface of the Dynamic BIM viewer (image featured, and further explained) in the award-winning paper.

Dr Ioannis Brilakis added: "This is the first robust implementation of fully connected Digital and Physical Twins, able to provide geometrically registered dynamic information about the physical asset to help decision makers make dynamic decisions."

About the J. James R. Croes Medal

The J. James R. Croes Medal was established by the ASCE in 1912. It is awarded to the authors who published a paper in any of the ASCE journals that makes a notable contribution to engineering research. The practical value of the research and its impact on engineering practice are essential considerations to award the medal. The J. James R. Croes Medal is the second highest honour bestowed by ASCE to a piece of academic work. It is named in honour of the first recipient of the Norman Medal, John James Robertson Croes, past President of ASCE. Past winners of the medal can be found here.

Reference

Davila Delgado, J. M., Butler, L., Brilakis, I., Elshafie, M., & Middleton, C. (2018). Structural Performance Monitoring Using a Dynamic Data-Driven BIM Environment. Journal of Computing in Civil Engineering, 32 https://doi.org/10.1061/(ASCE)CP.1943-5487.0000749