

Tentative Outline

Special Thematic Issue for The Open Civil Engineering Journal

Title: **Advances in Computational Intelligence in Civil Engineering**

Guest Editors: Dr. Kanak Kalita

Aims & Scope:

With rapid advancement in computing power and development of numerical tools and scientific theories in the field of civil engineering, simple experiments can now be carried out in-silico. Accurate computational theories coupled with high-fidelity numerical procedures like finite element, meshless methods provide a viable alternative to expensive physical experiments. On the other, often limited number of physical experiments may be required to be carried out for either calibrating the numerical models or in cases when simulating real-life phenomena is intractable. In such cases, use of data-driven machine learning and artificial intelligence technologies can provide a balancing solution. On the other spectrum of the computational intelligence usage for civil engineering lies situations where an information overload is seen. Often too much data is collected in several situation like flow behaviour measurement, historical data of projects etc. Such situations can be tackled by the effective use of big data like technologies. The current special issue is addressed to the works focused on the effective use of advanced computational methods applied to the civil engineering problems. The issue specially aims to publish original research in the interdisciplinary area of high-end soft computing and civil engineering.

Keywords: Optimization, Metamodeling, Neural Networks, Structural Health Monitoring, Numerical Modeling

Subtopics:

In this thematic issue, we intend to consider the following topics. Potential topics include but not limited to (but application limited to civil engineering):

- Numerical analysis like FEM, XFEM, SFEM, meshfree methods etc.
- Metaheuristic algorithms in Civil Engineering
- Natural computing in Civil Engineering
- Machine learning for Civil Engineering
- Structural Health Monitoring by artificial intelligence
- Forecasting and predictive modelling
- Big Data in Civil Engineering and Management
- Probabilistic and fuzzy approaches

Schedule:

- Abstract submission deadline: **15/08/2020**
- Manuscript submission deadline: **30/11/2020**
- Peer Review Due: **15/12/2020**
- Revision Due: **15/01/2021**
- Announcement of acceptance by the Guest Editors: **31/01/2021**
- Final manuscripts due: **15/02/2021**
- Publication of the special issue: **March 2021**

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