

# Deep learning in SHM and beyond

Topic: Structural health monitoring and machine learning

**TITLE: Investigation of state-of-the-art machine learning solutions**

## RESEARCH BACKGROUND:

Several machine learning algorithms have been proposed in the field of structural engineering. Recently, the effort of the research community has been focused on moving from supervised methods to unsupervised methods. However, it is not clear (yet) if this decision will pay off.

## RESEARCH ACTIVITIES:

1. Literature review of state-of-the-art machine learning methods.
2. Implementation of supervised and unsupervised methods and performance evaluation through case studies in the field of structural engineering.
3. Investigation of pros and cons of supervised and unsupervised solutions and definition of guidelines for the future of artificial intelligence in structural engineering.

**METHODOLOGY:** Analytical – Numerical

**DURATION:** 7-9 months

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