ARTIFICIAL INTELLIGENCE

MUR DM 118 - Identification, model updating and seismic retrofit of structures and infrastructures through AI

Funded By	MINISTERO DELL'UNIVERSITA' E DELLA RICERCA [P.iva/CF:97429780584] Politecnico di TORINO [P.iva/CF:00518460019]

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Context of the research activity	Use of AI techniques for the identification and model updating of digital twins of critical structures and infrastructures. Progetto finanziato nell'ambito del PNRR – DM 118/2023 - CUP E14D23001810006

Objectives	This research topic is focused on the use of AI techniques for the identification and model updating of digital twins of critical structures and infrastructures for the optimal design of retrofitting solutions to reduce their seismic vulnerability. Real-world data analysis (e.g. operational modal analysis) from monitoring systems can be used to process even in real time the state of critical structures and infrastructures, and thus quantify and possibly improve their resilience.

Skills and competencies for the development of the activity	According to the specific topic of the research activity, candidates should have a degree in civil engineering, environmental engineering and traffic or transportation engineering. Previous basic knowledge of code implementation with MATLAB and/or Python is advisable as well as advanced skills related to Open Application Programming Interface for the interoperability between code and FEM software including but not limited to the work done during the M.Sc. thesis.