Reducing computational time for FEM postprocessing through the use of feedforward neural networks

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ABSTRACT

With the recent surge in neural network usage, machine learning libraries have become more convenient to use and implement. In this paper we investigate the possibility of using neural networks in order to faster process displacements obtained from finite element calculation and replace existing post-processing procedures. The method is implemented on 2D finite elements for their relative ease of usage and manipulation. A speed up is observed in comparison to traditional methods of post-processing. Possible further applications of this method are also presented in this paper.