عنوان مقاله:

The Artificial Intelligence Usage in Estimating the Compressive Strength of Fiber-Reinforced Concrete

محل انتشار:

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خلاصه مقاله:

The assessment of the compressive strength of fiber-reinforced concrete through the implementation of cutting-edge algorithms and the utilization of advanced machine learning algorithms is experiencing a surge in popularity within the realm of construction due to its heightened mechanical attributes and resistance to cracking. By incorporating steel fibers into the amalgamation of concrete, the concrete specimen showcases an ameliorated response after cracking and an enhanced transfer of stress. This paper conducted a comprehensive review of utilizing different machine learning (ML) techniques and artificial intelligence (AI) methods to predict the mechanical properties and the optimized mixture design of steel fiber reinforced concrete (SFRC) specimens. The outcomes showed that the proposed AI and ML techniques have significant effects on the realm of construction as they furnish more efficient and precise approaches for assessing the mechanical properties of SFRC and result in savings in both cost and time for construction projects, while simultaneously enhancing the structural performance and durability of SFRC specimens.

کلمات کلیدی:

Steel Fiber Reinforced Concrete (FRC)،Machine Learning Techniques،Mechanical Properties،Material Usage

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