

## **Abstract**

Concrete is the most widely used construction material throughout the *work â*. Extensive experiments are conducted every year to study the physical, mechanical, and chemical properties of concrete involving a hefty amount of money and time. This work focuses on the utilization of Machine Learning (ML) algorithms to predict various concrete properties for avoiding unnecessary experimentation

In this work, main and most important mechanical property of concrete namely, compressive strength is predicted by applying five different ML algorithms viz. Linear Regression, Support Vector Machine, Decision Tree, Random Forest, and Gradient Boosting models Further, these ML models were evaluated to identify the most suitable model that can reliably predict the compressive strength of concrete. It is observed that the decision tree is most suitable for prediction of compressive strength of concrete with an accuracy of 95.5%. Also, the two parameters which effected the compressive strength most are recycled coarse aggregate and ratio of water