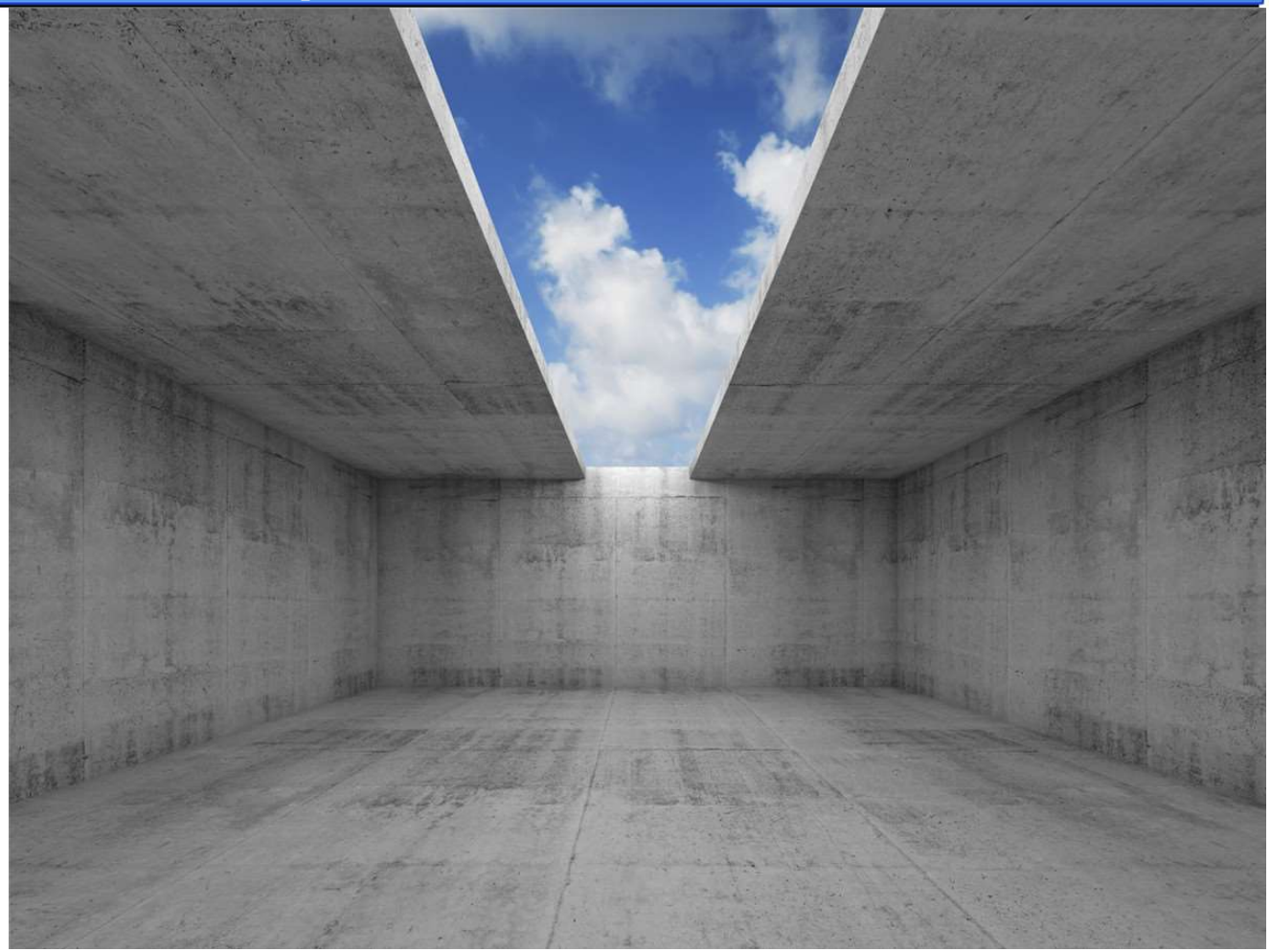
Combined cycle power plant performance prediction



Presented by
Artem Ramus

Background

Abstract:
Concrete is the most important material in civil engineering. The concrete compressive strength is a highly nonlinear function of age and ingredients.

Source:
Original Owner and Donor Prof. I-Cheng Yeh Department of Information Management Chung-Hua University, Hsin Chu, Taiwan 30067, R.O.C. e-mail:icyeh '@' chu.edu.tw TEL:886-3-5186511

Heysem Kaya, Department of Computer Engineering, Boğaziçi University, TR-34342, Beşiktaş, İstanbul, Turkey Email: heysem '@' boun.edu.tr

https://archive.ics.uci.edu/ml/datasets/Concrete+Compressive+Strength

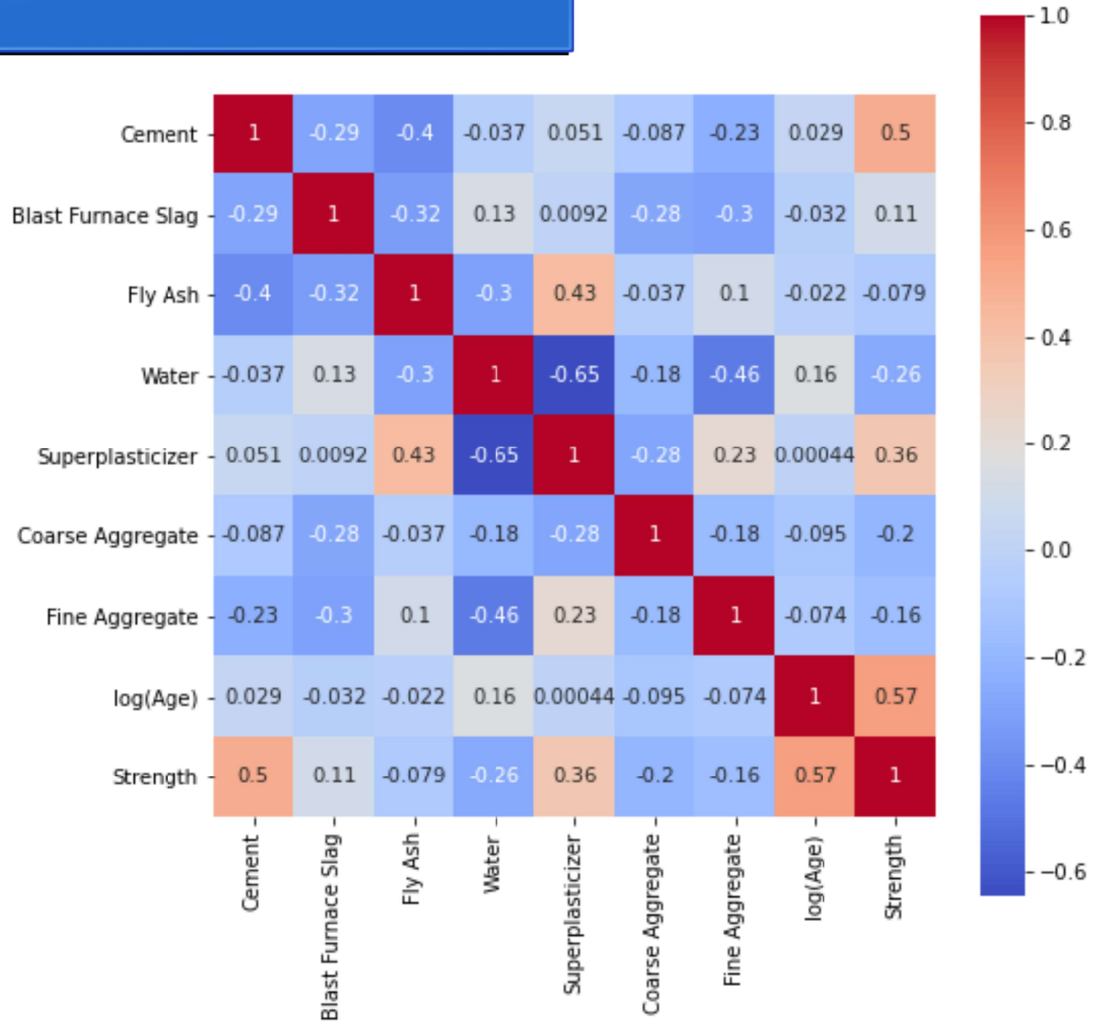
Introduction

Given are the variable name, variable type, the measurement unit and a brief description. The concrete compressive strength is the regression problem. The order of this listing corresponds to the order of numerals along the rows of the database.

Citation Request:
NOTE: Reuse of this database is unlimited with retention of copyright notice for Prof. I-Cheng Yeh and the following published paper:
I-Cheng Yeh, "Modeling of strength of high performance concrete using artificial neural networks," Cement and Concrete Research, Vol. 28, No. 12, pp. 1797-1808 (1998).

Methodology

- The data set is checked for duplicates, null values and homogeneous features.
- Data distribution is checked with histogram, distribution and box plots for skewness and outliers.
- Correlation between features was examined with a correlation matrix.



Performance of the Model

Performance of the following models was estimated based on Pearson coefficient:

- Random forest
- XGBoost

Summary and Conclusions

XGBoost regression gave best R square score of 92%, random forest - 90%

The end

Thank you for your attention!