Concrete Strength Prediction using CNN

This AI/ML model predicts the **compressive strength** of concrete based on its composition using a **1D Convolutional Neural Network**.

Upload your Concrete dataset (CSV)

Drag and drop file here
Limit 200MB per file • CSV
Browse files

Concrete_Data.csv 56.9KB

Dataset uploaded successfully!

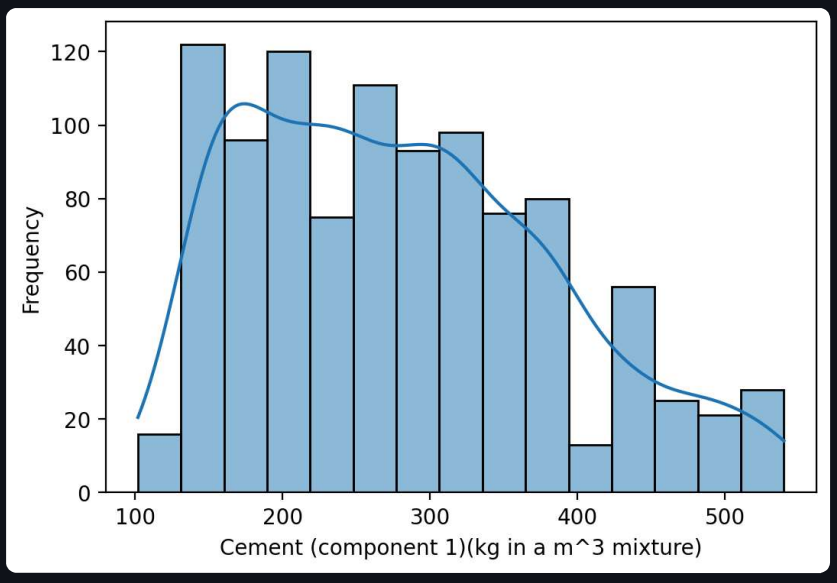
	Cement (component 1)(kg in a m^3 mixture)	Blast Furnace Slag (component 2)(kg in a m^3 mixture)	Fly Ash (component 3)(kg in a m^3 mixture)	Water (component 4)
0	540	0	0	
1	540	0	0	
2	332.5	142.5	0	
3	332.5	142.5	0	
4	198.6	132.4	0	

Data Insights

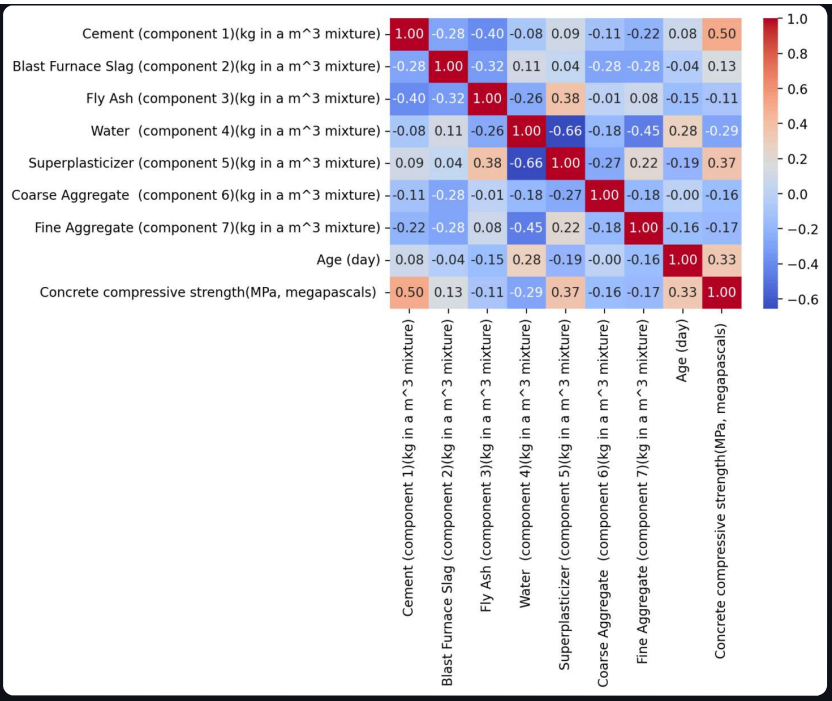
Select Target Column (Strength Column):

Cement (component 1)(kg in a m^3 mixture)

Target Column Distribution



Feature Correlation Heatmap



⏳ Training CNN model... Please wait (50 epochs)...

✅ Model trained successfully!

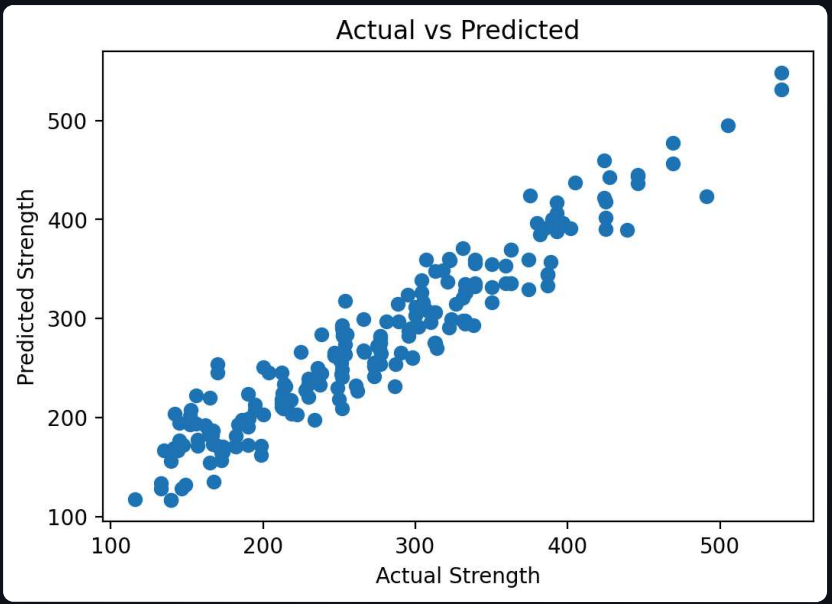
RMSE

26.897

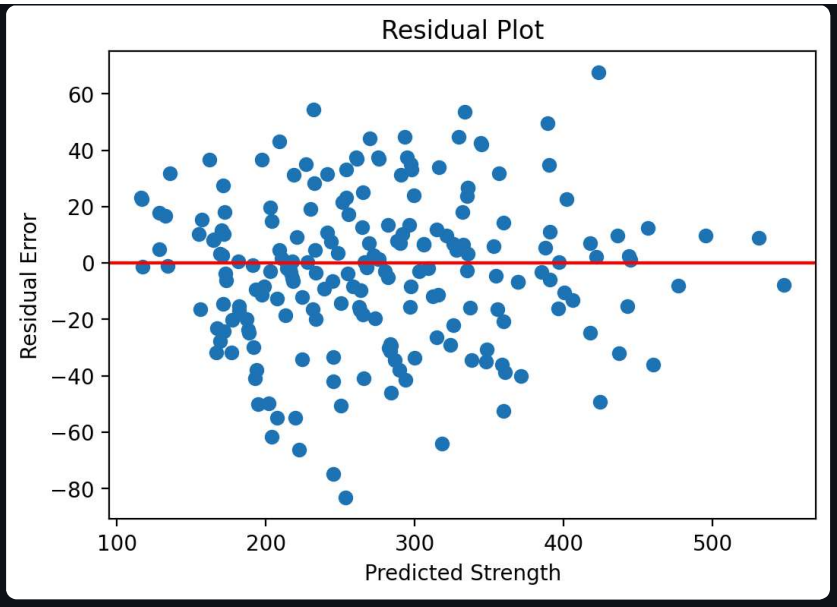
R^2 Score

0.912

🎯 Actual vs Predicted Strength



⚠️ Residual Error Plot



📊 Training Progress

🔍 Predict Custom Input

Blast Furnace Slag (component 2)(kg in a m^3 mixture)

73.90 − +

Fly Ash (component 3)(kg in a m^3 mixture)

54.19 − +

Water (component 4)(kg in a m^3 mixture)

181.57 − +

Superplasticizer (component 5)(kg in a m^3 mixture)

6.20 − +

Coarse Aggregate (component 6)(kg in a m^3 mixture)

972.92 − +

Fine Aggregate (component 7)(kg in a m^3 mixture)

773.58 − +

Age (day)

45.66 − +

Concrete compressive strength(MPa, megapascals)

35.82 − +

🚀 Predict Strength

🏗️ Predicted Concrete Strength: **286.02 MPa**