

Insurance Charges

Problem Statement:

The problem statement for predicting insurance charges based on features like age, sex, BMI, children, smoker status, and charges

Dataset Information:

- Total number of rows :1338
- Total number of column:6
- Independent: age,sex,bmi,children,smoker
- Dependent: charges

Pre-Processing:

The dataset contains nominal categorical data like sex, smoker status, and region, with no ordinal features.

Final Model r2 value:

Regression Random Forest r2 value : 0.8815787856418197

All The Reacher Values (Screensdhort):

https://github.com/pranava007/AI_Insurence_Charges_Predict_ML/blob/main/ML%20Regression%20R2%20Value%20Assignment-1.pdf

Justify The Final Model:

The dataset consists of clearly defined input and output variables, making it suitable for machine learning. Since the output is numerical, this is a regression problem in supervised learning. I explored various algorithms, including multiple linear regression, support vector regression, decision tree regression, and random forest regression. After thorough evaluation, I achieved the best results using the random forest regression model.