Multiple linear regression - Lesson overview

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Learning objectives:

- Implement multiple linear regression models using sklearn and statsmodels.
- Check for violations of multiple linear regression assumptions and interpret their implications.
- Visualise relationships between variables and residuals to identify patterns.
- Use diagnostic plots and statistical tests to assess the validity of regression models.

- Apply techniques to handle multicollinearity and influential outliers in regression analysis.
- Interpret regression model outputs and make informed decisions based on the results.



Vide



Knowledge questions



Examples



Exercise







Understanding multiple linear regression and its evaluation metrics is crucial, as it provides a powerful tool for uncovering relationships within data and making predictions.

Description

Multiple linear regression serves as the cornerstone for various advanced machine learning algorithms and statistical techniques, and is often used in fields such as finance, healthcare, marketing, and engineering.

In this lesson, we will cover the **fundamentals of multiple linear regression**, including its assumptions, implementation in Python using libraries like **sklearn** and **statsmodels**, and evaluation techniques. We'll explore how to check for **linearity**, **multicollinearity**, **independence**, **homoscedasticity**, **normality**, and **outliers** in regression models.



