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Polynomial Regression

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Polynomial Regression

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Polynomial Regression Quiz

Review Learning Objectives

Submit your assignment

Due Feb 25, 11:59 PM IST

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To Pass 60% or higher

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1. How can you evaluate the performance of a linear regression model in Scikit-learn?

1 / 1 point

- By calculating the Mean Squared Error (MSE) using the model's coefficients and input data.
- By comparing the predicted values with the actual target values using evaluation metrics such as MSE, R-squared (R2), etc.
- By using the transform() method with new input data and comparing the results with the actual target values.
- By comparing the model's intercept and coefficients with the expected values.
- Correct

Correct! You can evaluate the performance of a linear regression model by comparing the predicted values with the actual target values using evaluation metrics such as MSE, R-squared (R2), etc.

Try again

Your grade

100%

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2. What is the R-squared (R2) metric used for in linear regression evaluation?

1 / 1 point

- To measure the accuracy of the model's predictions in percentage.
- To evaluate how well the model's predictions fit the variance of the target variable.
- To calculate the Mean Squared Error (MSE) of the model's predictions.
- To measure the absolute error between the model's predictions and actual target values.
- Correct

Correct! R-squared (R2) is used to evaluate how well the model's predictions fit the variance of the target variable.

3. What is the assumption of linearity in linear regression?

1 / 1 point

- The dependent variable has a linear relationship with the independent variables.
- The errors (residuals) are normally distributed.
- The dependent variable is normally distributed.
- The residuals have constant variance (homoscedasticity).
- Correct

Correct! The assumption of linearity in linear regression states that the dependent variable has a linear relationship with the independent variables.

4. What does the assumption of independence mean in linear regression?

1 / 1 point

- The independent variables are not correlated with each other.
- The errors (residuals) are not correlated with each other, and each observation is independent of others.
- The dependent variable is not correlated with the independent variables.
- The residuals have constant variance (homoscedasticity).
- Correct

Correct! The assumption of independence in linear regression states that the errors (residuals) are not correlated with each other, and each observation is independent of others.

5. What is polynomial regression used for?

1 / 1 point

- To model linear relationships between the dependent and independent variables.
- To model nonlinear relationships between the dependent and independent variables using polynomial features.
- To perform feature scaling on the independent variables.
- To select the best subset of independent variables for the model.
- Correct

Correct! Polynomial regression is used to model nonlinear relationships between the dependent and independent variables using polynomial features.

6. What does the degree of polynomial features represent in polynomial regression?

1 / 1 point

- The number of independent variables in the model.
- The number of dependent variables in the model.
- The highest power of the independent variable(s) used in the model.
- The level of significance for the model coefficients.
- Correct

Correct! The degree of polynomial features represents the highest power of the independent variable(s) used in the model.

7. What is overfitting in the context of regression models?

1 / 1 point

- The model is too simple and fails to capture the relationship between variables.
- The model fits the training data too well, capturing noise and random variations instead of general patterns.
- The model is too complex and results in multicollinearity between variables.
- The model's residuals are not normally distributed.
- Correct

Correct! Overfitting occurs when the model fits the training data too well, capturing noise and random variations instead of general patterns.

8. What is the impact of overfitting on the performance of a regression model?

1 / 1 point

- Overfitting leads to a model that is too simple and underperforms on both the training and test data.
- Overfitting has no impact on the performance of a regression model.
- Overfitting leads to a model that is too complex and results in multicollinearity between variables.
- Overfitting leads to a model that performs very well on the training data but poorly on new, unseen data (test data).
- Correct

Correct! Overfitting leads to a model that performs very well on the training data but poorly on new, unseen data (test data).

