DAILY WORK REPORT TR-02

INFOWIZ

17 JUNE 2024

Day 10: Linear Regression

Summary: Today, we delved into linear regression, a fundamental technique in machine learning used for predicting continuous outcomes. We explored both the theoretical concepts behind linear regression and its practical implementation using Python with scikit-learn.

Key Learnings:

1. **Introduction to Linear Regression:**
    - Defined linear regression as a statistical method for modeling the relationship between dependent and independent variables.
    - Discussed its applications in predicting outcomes based on input features, such as predicting housing prices based on square footage and number of bedrooms.
2. **Implementation in Python:**
    - Preprocessed the dataset to handle missing values and categorical variables using Pandas.
    - Utilized scikit-learn's `LinearRegression` class to train the model on the preprocessed data.
    - Evaluated the model's performance using metrics like mean squared error (MSE) and coefficient of determination (R-squared).
3. **Practical Application:**
    - Applied linear regression to a real-world dataset, predicting housing prices based on various features.
    - Explored techniques for interpreting model coefficients and assessing feature importance in relation to the target variable.