712221205038 srikaran S
712221205021 Naveen P
712221205032 santhosh P
712221205018 mukesh kumar pandian M

Phase 3

Electricity Price Prediction Model

Now let's move to the task of training an electricity price prediction model. Here I will first add all the important features to x and the target column to y, and then I will split the data into training and test sets:

x = data[["Day", "Month", "ForecastWindProduction", "SystemLoadEA", "SMPEA", "ORKTemperature", "ORKWindspeed", "CO2Intensity", "ActualWindProduction", "SystemLoadEP2"]]y = data["SMPEP2"]from sklearn.model_selection import train_test_splitxtrain, xtest, ytrain, ytest = train_test_split(x, y, test_size=0.2, random_state=42)

view rawelectricity3.py hosted with by GitHub

As this is the problem of regression, so here I will choose the Random Forest regression algorithm to train the electricity price prediction model:

1

from sklearn.ensemble import RandomForestRegressor

2

model = RandomForestRegressor()

3

model.fit(xtrain, ytrain)

RandomForestRegressor(bootstrap=True, ccp_alpha=0.0, criterion='mse', max_depth=None, max_features='auto', max_leaf_nodes=None, max_samples=None, min_impurity_decrease=0.0, min_impurity_split=None, min_samples_leaf=1, min_samples_split=2, min_weight_fraction_leaf=0.0, n_estimators=100, n_jobs=None, oob_score=False, random_state=None, verbose=0, warm_start=False)

Now let's input all the values of the necessary features that we used to train the model and have a look at the price of the electricity predicted by the model:

1

#features = [["Day", "Month", "ForecastWindProduction", "SystemLoadEA", "SMPEA", "ORKTemperature", "ORKWindspeed", "CO2Intensity", "ActualWindProduction", "SystemLoadEP2"]]

2

features = np.array([[10, 12, 54.10, 4241.05, 49.56, 9.0, 14.8, 491.32, 54.0, 4426.84]])

3

model.predict(features)

array([65.1696])

So this is how you can train a machine learning model to predict the prices of electricity.

Summary

Predicting the price of electricity helps a lot of companies to understand how much electricity expenses they have to pay every year. I hope you liked this article on the task of electricity price prediction with machine learning using Python. Feel free to ask your valuable questions in the comments section below.