import pandas as pd

import seaborn as sns

import matplotlib.pyplot as plt

file\_path = 'data.csv'

data = pd.read\_csv(file\_path)

correlation\_matrix = data.corr()

plt.figure(figsize=(10, 8))

sns.set(style="white")

sns.heatmap(correlation\_matrix, annot=True, cmap="coolwarm", fmt=".2f", linewidths=.5)

plt.title('Correlation Heatmap')

plt.show()

import numpy as np

import pandas as pd

from statsmodels.tsa.stattools import adfuller,kpss

from statsmodels.tsa.vector\_ar.vecm import coint\_johansen

data = pd.read\_csv('data.csv')

for i in range(12):

temp = data.iloc[:, i]

window\_size = 4000

temp = temp.ewm(span=window\_size).mean()

data.iloc[:, i] = temp

data = data.values

adf = []

p = []

result = coint\_johansen(data, det\_order=0, k\_ar\_diff=1)

print(f'Eigenvalues: {result.eig}')

print(f'Trace Statistics: {result.lr1}')

print(f'Critical Values (90% confidence level): {result.cvm}')

import os

import keras.layers

import pywt

import tensorflow

from keras.layers import Input, Dense, LSTM, Conv1D, Dropout, Bidirectional, Multiply

from keras.models import Model

from keras.layers import Input

import keras.backend as K

from matplotlib import pyplot as plt

from sklearn.metrics import r2\_score, mean\_absolute\_error, mean\_absolute\_percentage\_error, mean\_squared\_error

import tensorflow as tf

from tensorflow.python.keras.callbacks import EarlyStopping

from attention\_utils import get\_activations

from keras.layers.merging.concatenate import concatenate

from keras.layers.merging.add import add

from keras.layers.merging.multiply import multiply

from keras.layers.merging.subtract import subtract

from keras.layers.merging.average import average

from keras.layers.merging.maximum import maximum

from keras.layers.merging.minimum import minimum

from keras.layers.merging.dot import dot