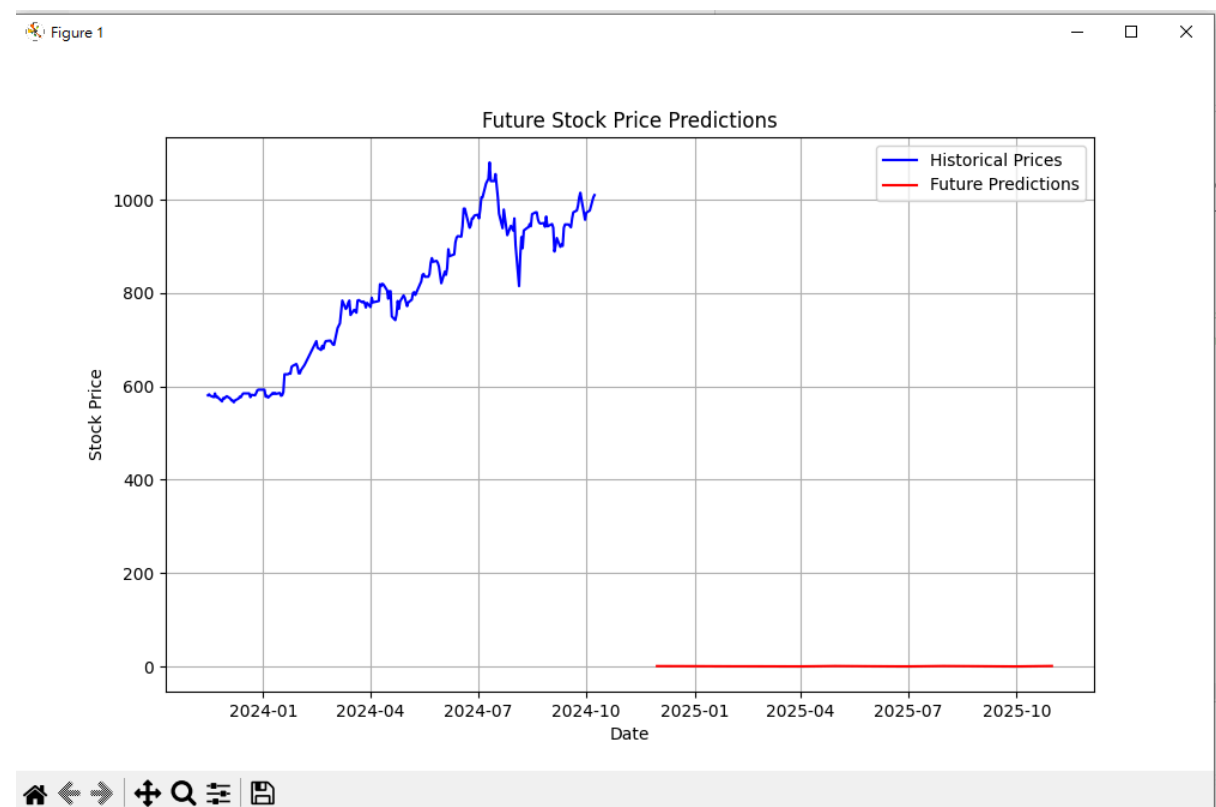


根據檔案2330-training.csv, 用python去 solve "auto regression" problem, 要照著 CRISP-datamining(DM)的步驟, 1.)將檔案2330-training.csv中的A column 當作附圖中的x軸 並標示年分, 2.)用檔案2330-training.csv中的B到G column各別代表的x1到x6當作"auto regression" problem中的輸入, 並預測出y軸, 也就是附圖的當日收盤價, 做出像附圖一樣的圖, 並要包含 1. feature selection 2. model evaluation 3. web implementation deployment 4. 預測未來12個月分別的收盤價並產生預測範圍的漏斗圖 (websim)

為甚麼我的預測圖中沒有2023年份的資料

為甚麼我的未來預測曲線(紅線)的部分是一條平行線, 並沒有顯示該有的曲折線



跑出來的圖示這樣的, 並沒有漏斗圖, 而且未來預測也在0元

```
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_squared_error
import matplotlib.pyplot as plt

# 讀取資料集
data = pd.read_csv('你的資料集.csv')

# 移除數字中的逗號, 並轉換為浮點數
data[['x1', 'x2', 'x3', 'x4', 'x5', 'x6']] = data[['x1', 'x2', 'x3', 'x4', 'x5', 'x6']].replace({',': ''},
regex=True).astype(float)

# 確保日期欄位為 datetime 格式
```

```

data['Date'] = pd.to_datetime(data['Date'], format='%m/%d/%Y')

# 定義自變量和應變量
X = data[['x1', 'x2', 'x3', 'x4', 'x5', 'x6']]
y = data['x1'] # 假設 'x1' 是目標變量, 根據你的需求可以調整

# 將資料集分割為訓練集和測試集
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

# 訓練模型
model = LinearRegression()
model.fit(X_train, y_train)

# 預測並評估模型
y_pred = model.predict(X_test)
rmse = mean_squared_error(y_test, y_pred, squared=False)
print(f'RMSE: {rmse}')

# 繪製結果圖
plt.figure(figsize=(10, 6))
plt.plot(data['Date'], data['x1'], color='blue', label='Historical Prices') # 繪製歷史資料

# 預測未來的12個月數據(假設每個月有一個觀測值)
future_dates = pd.date_range(start=data['Date'].iloc[-1] + pd.DateOffset(months=1),
                              periods=12, freq='M')
future_X = data[['x1', 'x2', 'x3', 'x4', 'x5', 'x6']].iloc[-1].values.reshape(1, -1) # 使用最新資料進行預測
future_predictions = []

# 進行未來12個月的預測
for _ in range(12):
    future_pred = model.predict(future_X)
    future_predictions.append(future_pred[0])
    # 這裡假設你會根據未來預測的值更新 x1 並進行下一步預測, 具體邏輯可以根據需求修改
    future_X[0][0] = future_pred[0] # 假設 x1 是你想要預測的未來數值

# 繪製未來預測
plt.plot(future_dates, future_predictions, color='red', label='Future Predictions')

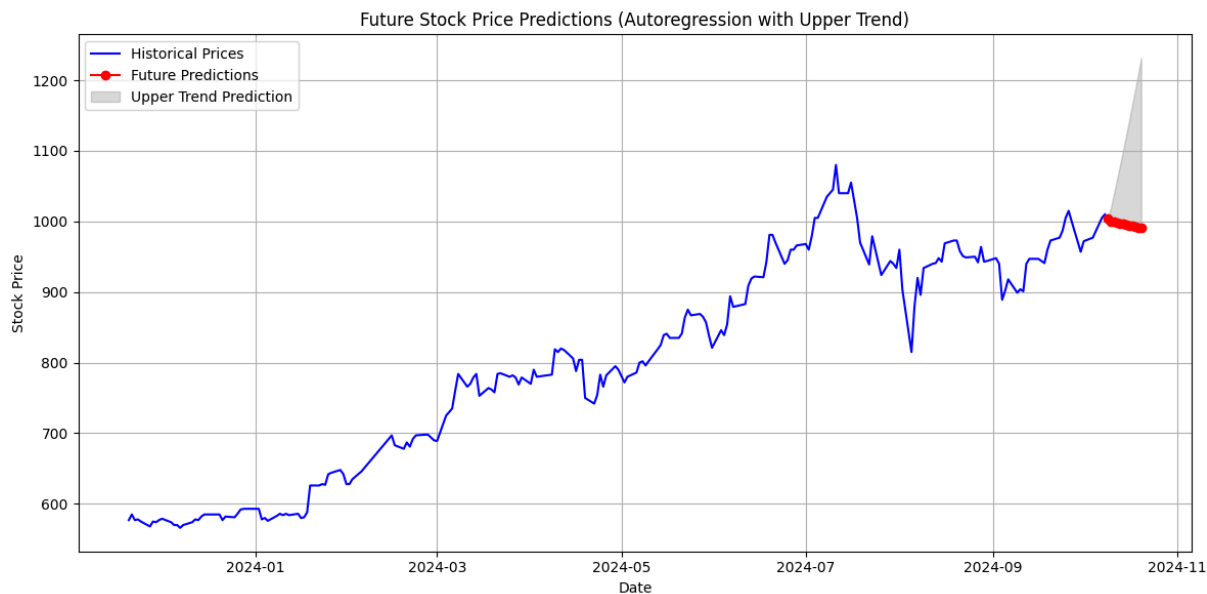
# 圖形標題和標籤
plt.title('Future Stock Price Predictions')
plt.xlabel('Date')
plt.ylabel('Stock Price')
plt.legend()

# 顯示圖表
plt.show()

```

help me with using Python to do a auto regression problem to predict the stock price here is my code:

i want to change the prediction part, i want the gray area become the upper trend prediction

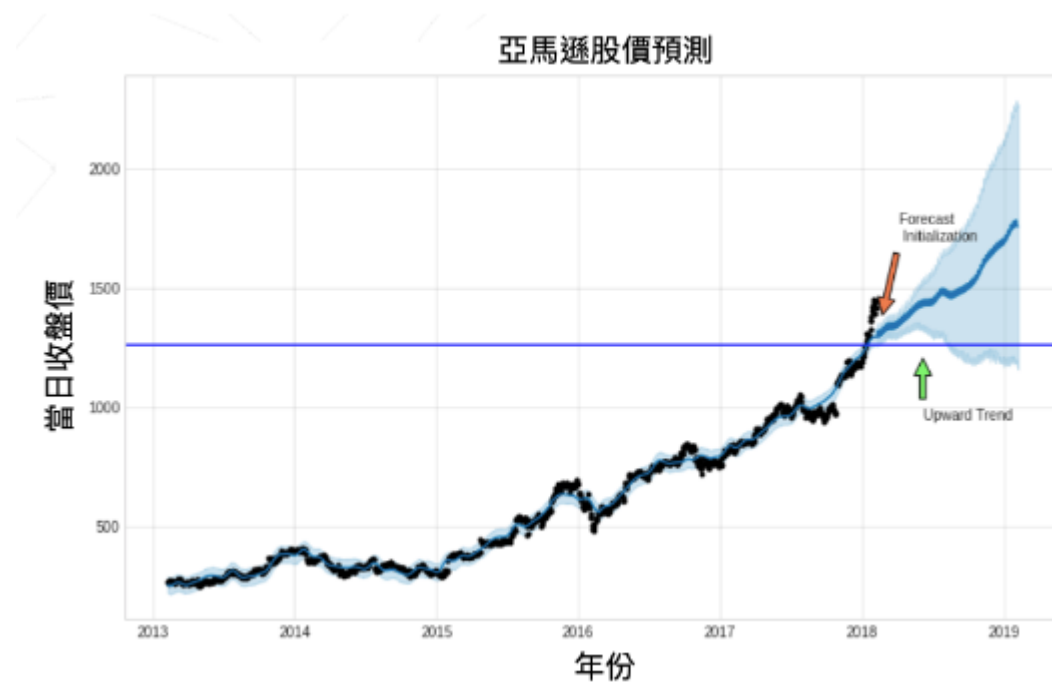
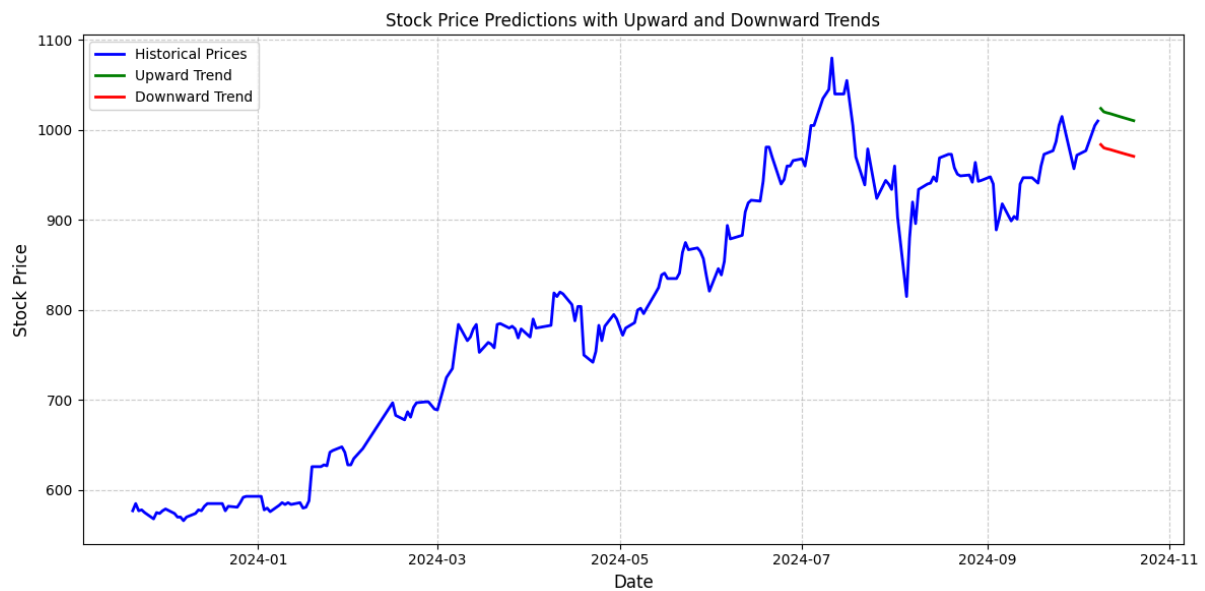


this is the result, but i want it looks like the second picture

can i have the upper trend like the second picture on my last question, which the upper trend is covered by the area of two prediction lines, one is the stock price rise line at the top and the second line is the downward stock price line at the bottom

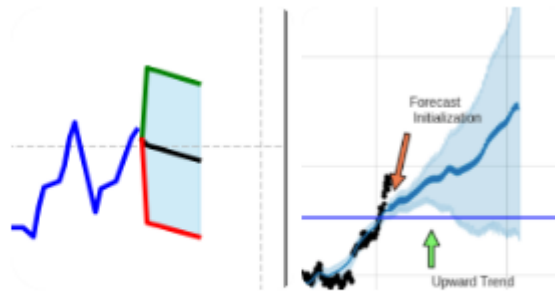
i want to change my question, i want 2 line after the historical line : 1. the upward trend 2. the downward trend

why the two line is straight , i want this two line be the prediction lines



this is the result, i want the green line looks like the tail part in second picture which green line(upward trend line) is the upper bound of the blue part of the tail part in second picture , and the red line(downward trend line) is the lower bound of the blue part of the tail part in second picture

i want the green、black、 red line start at the same start point after the historical line which is the initialization forecast



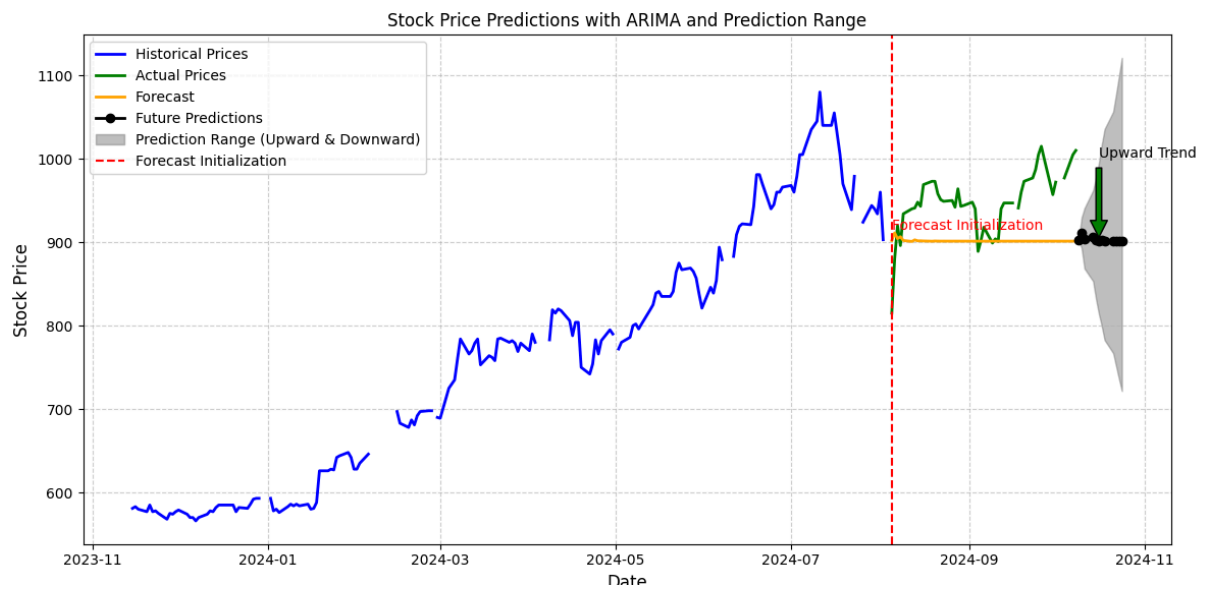
the 3 lines still don't look like this picture



2330 Training

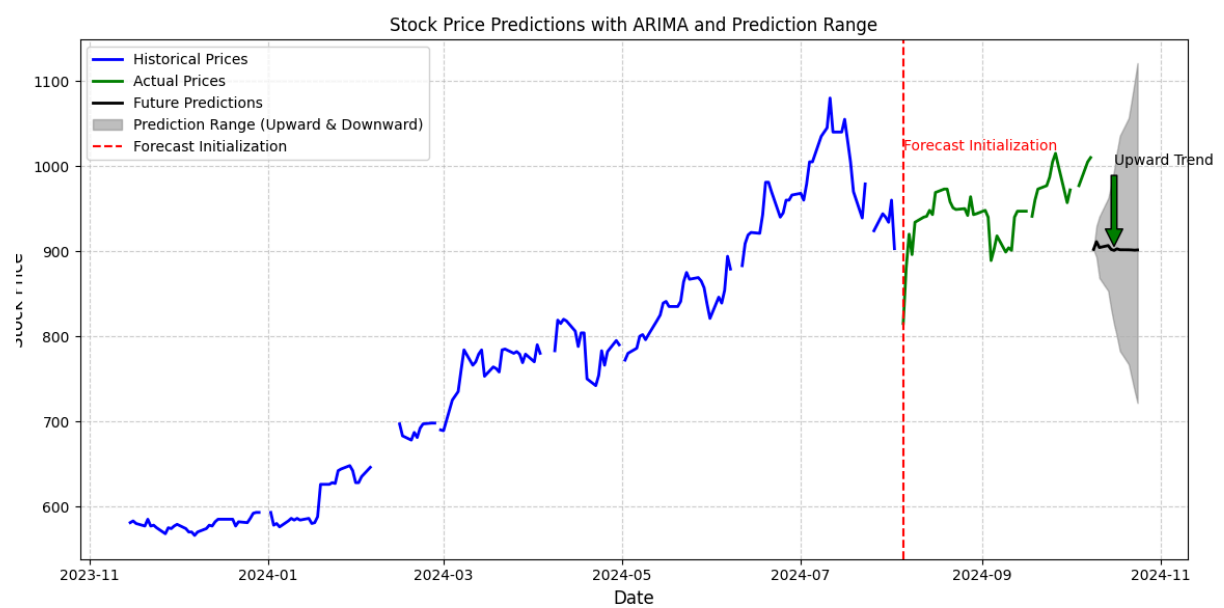
無法顯示視覺化

help me with using Python to do a auto regression problem to predict the stock price , i want the output picture looks like this with my data 2330-training.csv where the file path is /vs code/auto_regression/2330-training.csv. every features on the picture should be maintain in the picture



what's the difference between historical and actual price

i want to delete the forecast line(orange line) and change the future predicting line(black line with dots) into black line without dots



why the historical line and actual price line of my result have space interval

Can we try a different forecasting model?

Alternative Models:


1. **Exponential Smoothing (ETS):** This is a simple yet powerful model that adjusts for seasonality and trends. It is part of the **Holt-Winters** family of models.
2. **Prophet Model:** Developed by Facebook, Prophet is designed to handle time series data with daily observations and multiple seasonality, making it robust and easy to use for stock price predictions.
3. **Random Forest Regressor:** A tree-based ensemble model that can be applied to time series by creating lag features. While not a true time series model, it can still capture patterns when properly prepared.
4. **LSTM (Long Short-Term Memory):** A recurrent neural network architecture well-suited for time series forecasting. While more complex, it can capture long-term dependencies in the data.

Let's try the Facebook Prophet model.

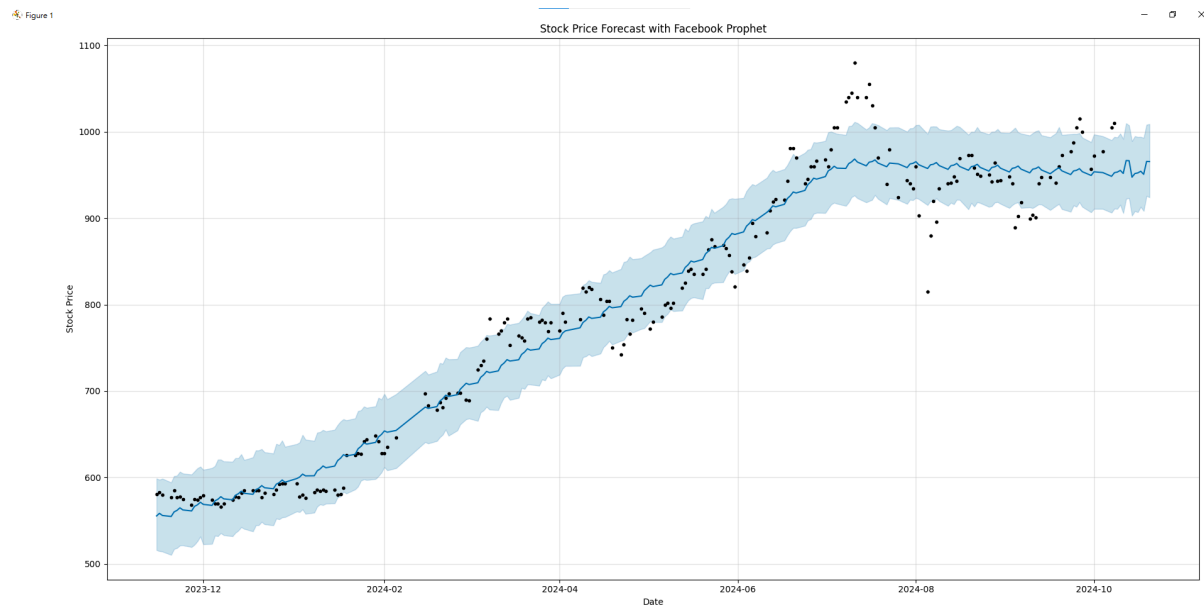
Steps:

1. **Install Prophet:** First, make sure you have the `prophet` package installed.

```
bash
```

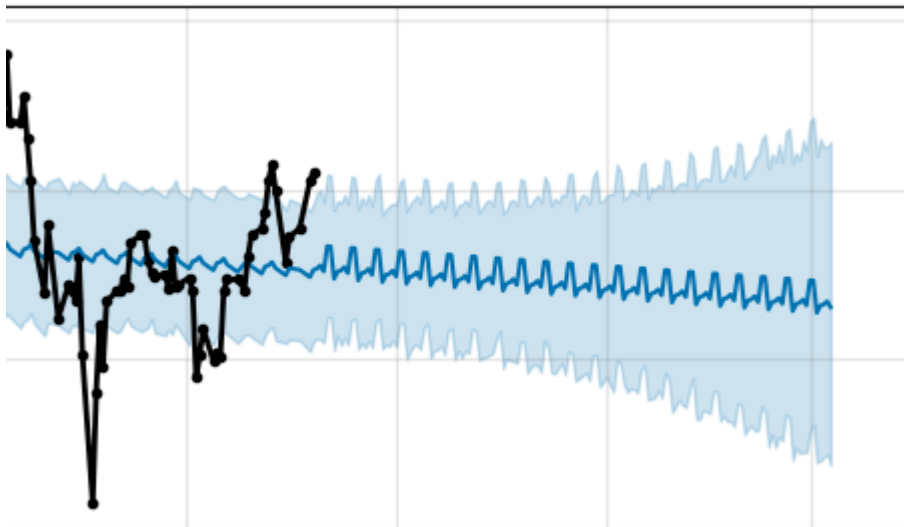
 複製程式碼

```
pip install prophet
```



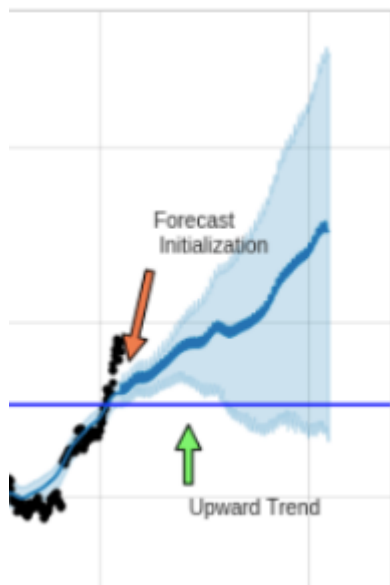
can you line all the black dots

i want to forecast 5 months after the data

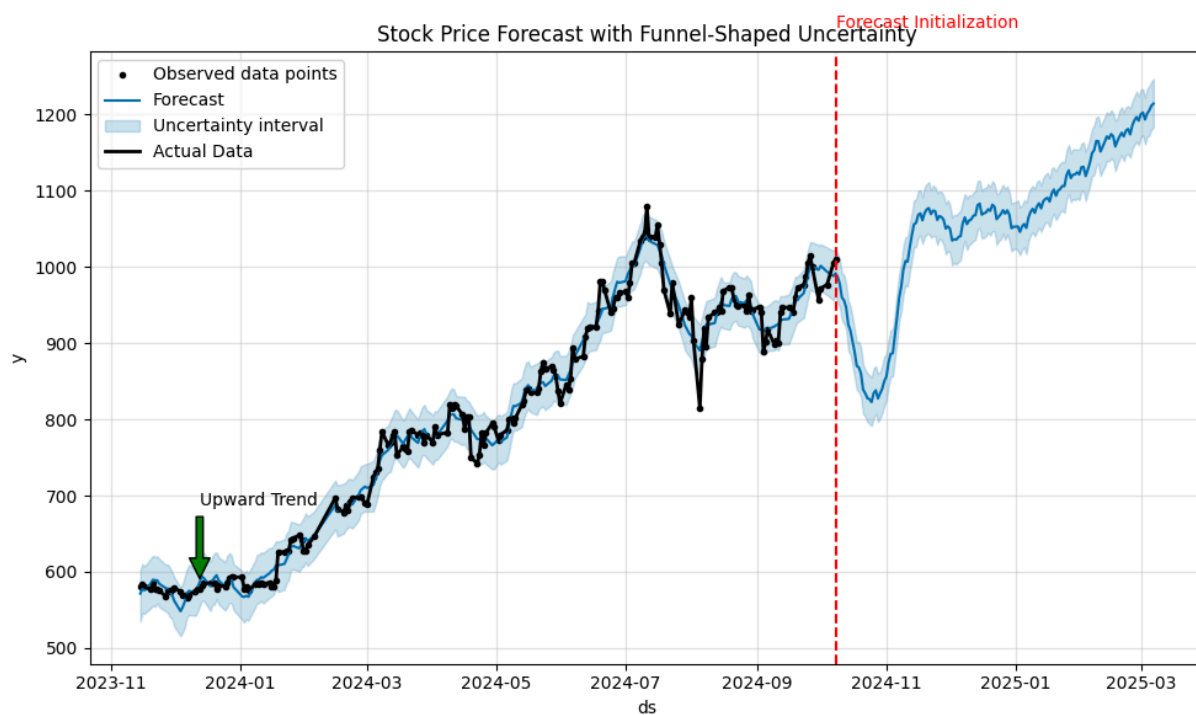


why the forecast part looks like the same

i want the uncertainty interval has the feature which the closer the time is to now, the prediction interval will be more convergent; conversely, the further the time is from now, the larger the prediction interval will be, indicating that the uncertainty will be higher.



i want the uncertainty looks like the funnel like this picture



this is my result, why the uncertainty interval doesn't have this feature :The closer the time is to now, the prediction interval will be more convergent; conversely, the further the time is from now, the larger the prediction interval will be, indicating that the uncertainty will be higher.

model = Prophet(interval_width=0.95, changepoint_prior_scale=0.5, uncertainty_samples=10) what's every parameters in the code

幫我用以上的code做一個web(html)讓使用者可以上傳他的檔案，並在下方加入一個輸入檔案的格式範例應該要是甚麼樣子

Stock Price Forecast


Upload your CSV file

選擇檔案

未選擇任何檔案

Upload and Forecast

Forecast Plot:

 Forecast Plot

Example File Format

Your CSV file should have the following columns:

```
Date,x1,x2,x3,x4,x5,x6
12/01/2020,500,520,510,530,540,550
12/02/2020,510,525,515,535,545,555
...
```

為甚麼無法產生圖片

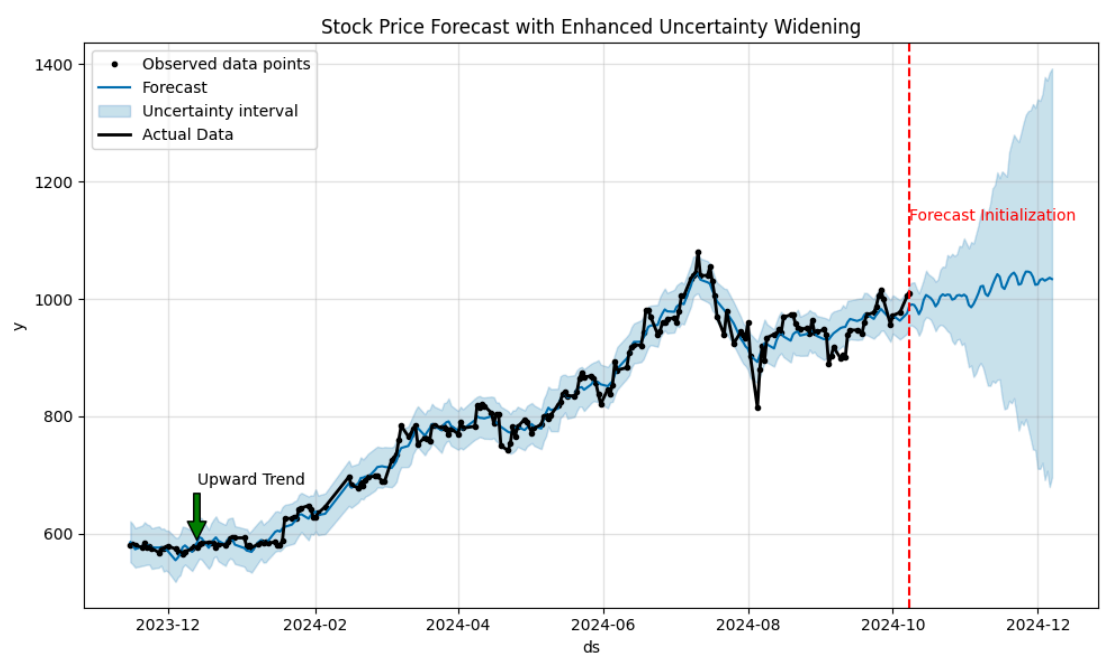
forecast_plot.png 圖片不存在

```
Debugger PIN: 118-767-170
127.0.0.1 - - [21/Oct/2024 17:53:46] "GET / HTTP/1.1" 200 -
17:53:51 - cmdstanpy - INFO - Chain [1] start processing
17:53:51 - cmdstanpy - INFO - Chain [1] done processing
Image saved at: static/uploads/forecast_plot.png
127.0.0.1 - - [21/Oct/2024 17:53:51] "POST / HTTP/1.1" 200 -
127.0.0.1 - - [21/Oct/2024 17:53:51] "GET /static/uploads/forecast_plot.png HTTP/1.1" 404
[]
```

根據最新的日誌輸出，圖片確實已經成功保存到 `static/uploads/forecast_plot.png`，但仍然無法顯示，並返回 404 錯誤。這意味著 Flask 無法正確提供該靜態文件。

幫我在網頁上加上使用者上傳的檔案名稱, 並顯示according to your data, here is the Forecast Plot: 並顯示預測圖片

Final Result:



檔案2330-training.csv

Stock Price Forecast

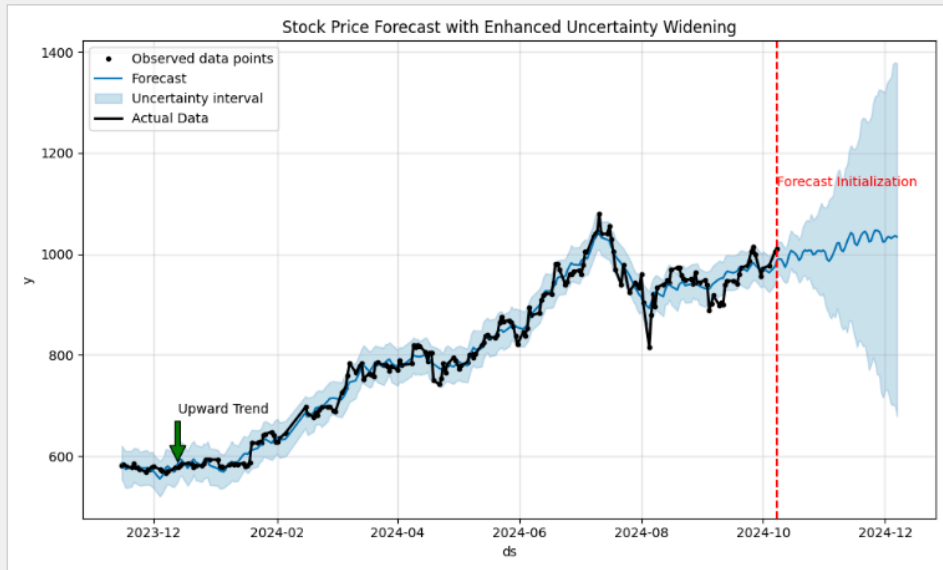
Upload your CSV file

選擇檔案 未選擇任何檔案

Upload and Forecast

Uploaded file: 2330-training.csv

According to your data, here is the Forecast Plot:



Example File Format

Your CSV file should have the following columns:

```
Date,x1,x2,x3,x4,x5,x6
12/01/2020,500,520,510,530,540,550
12/02/2020,510,525,515,535,545,555
...
```

檔案2331-training.csv

Stock Price Forecast

Upload your CSV file

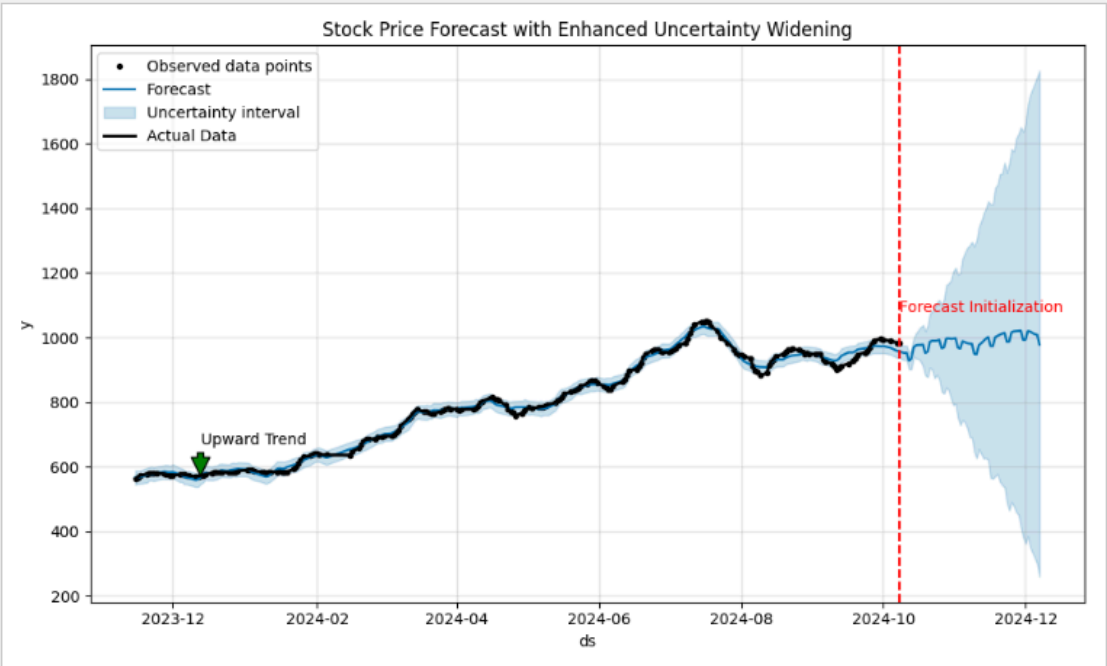
選擇檔案

未選擇任何檔案

Upload and Forecast

Uploaded file: 2331-training.csv

According to your data, here is the Forecast Plot:



Example File Format

Your CSV file should have the following columns:

```
Date,x1,x2,x3,x4,x5,x6
12/01/2020,500,520,510,530,540,550
12/02/2020,510,525,515,535,545,555
...
```