```
!pip install requests beautifulsoup4 pandas
```

```
Requirement already satisfied: requests in /usr/local/lib/python3.11/dist-packages (2.32.3)
Requirement already satisfied: beautifulsoup4 in /usr/local/lib/python3.11/dist-packages (4.13.4)
Requirement already satisfied: pandas in /usr/local/lib/python3.11/dist-packages (2.2.2)
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.11/dist-packages (from request
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.11/dist-packages (from requests) (3.10)
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.11/dist-packages (from requests) (2.
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.11/dist-packages (from requests) (20
Requirement already satisfied: soupsieve>1.2 in /usr/local/lib/python3.11/dist-packages (from beautifulsoup4) (2
Requirement already satisfied: typing-extensions>=4.0.0 in /usr/local/lib/python3.11/dist-packages (from beautif
Requirement already satisfied: numpy>=1.23.2 in /usr/local/lib/python3.11/dist-packages (from pandas) (2.0.2)
Requirement already satisfied: python-dateutil>=2.8.2 in /usr/local/lib/python3.11/dist-packages (from pandas) (
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.11/dist-packages (from pandas) (2025.2)
Requirement already satisfied: tzdata>=2022.7 in /usr/local/lib/python3.11/dist-packages (from pandas) (2025.2)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.11/dist-packages (from python-dateutil>=2.8.2-
```

```
!pip install yfinance
```

1. Data Preparation

- Web scraping exchange rate data and save to a certain format.

```python
import requests
from bs4 import BeautifulSoup
import pandas as pd
from datetime import datetime


class CurrencyMonitor:
    def __init__(self):
        self.fetch_exchange_rate()

    # update the url for the corresponding currency rate page, this only scraping CAD and CNY
    def fetch_exchange_rate(self):
        url = "https://g.co/finance/CAD-CNY"
        print("Fetching...")
        #headers = {}
        response = requests.get(url)
        if response.status_code == 200:
            soup = BeautifulSoup(response.text, 'html.parser')
            soup_format = soup.prettify()
            #holders = soup.find_all('div', class_='YMlKec fxKbKc')
            div_element = soup.find('div', {'data-source':'CAD', 'data-target':'CNY'})
            print(div_element)
            if div_element:
                # print(div_element)
                last_price = div_element.get('data-last-price')
                last_market_timestamp = div_element.get('data-last-normal-market-timestamp')
                unix_timestamp = int(last_market_timestamp)
                last_timestamp_converted = datetime.fromtimestamp(unix_timestamp).strftime('%Y-%m-%d %H:%M:%S')
                print(f"The last price is: {last_price} for date: {last_timestamp_converted}")
                return(last_timestamp_converted, last_price)
            else:
                print("No matching element")
        # In case if you want to output the reponse to a separate file instead showing in terminal, uncomment be
        # print("Writing to the text file response.txt...")
        # f = open('response.txt', 'w')
        # f.write(soup_format)
        # f.close()
```

```
CurrencyMonitor()
```

```
Fetching...
<div data-entity-type="3" data-last-normal-market-timestamp="1754626464" data-last-price="5.2274519999999995" da
The last price is: 5.2274519999999995 for date: 2025-08-08 04:14:24
<__main__.CurrencyMonitor at 0x7b7cebde9950>
```

```python
#google page only has real time data, need to go to yahoo finance for historical data
import yfinance as yf

# Get last 6 months of daily data
df = yf.download("CADCNY=X", start="2025-02-01", end="2025-08-01", interval='1d')
df = df[['Close']]
df.reset_index(inplace=True)
df.columns = ['Date', 'Rate']

df.to_csv("cad_cny_history.csv", index=False)
print(df.tail())
```

```
/tmp/ipython-input-3523705728.py:5: FutureWarning: YF.download() has changed argument auto_adjust default to Tru
  df = yf.download("CADCNY=X", start="2025-02-01", end="2025-08-01", interval='1d')
[*********************100%***********************]  1 of 1 completed          Date      Rate
122 2025-07-25  5.243906
123 2025-07-28  5.220485
124 2025-07-29  5.226109
125 2025-07-30  5.209860
126 2025-07-31  5.190529
```

```python
df.head()
```

	Date	Rate
0	2025-02-03	4.883466
1	2025-02-04	4.989753
2	2025-02-05	5.010937
3	2025-02-06	5.078317
4	2025-02-07	5.093781

2. Model Forecasting

A. Using prophet: An open-source time series forecasting tool developed by Meta. It is a Bayesian statistical modelin.

- https://facebook.github.io/prophet/docs/quick_start.html

```
!pip install prophet
```

```python
from prophet import Prophet

# Load data
df = pd.read_csv('cad_cny_history.csv')
df = df[['Date', 'Rate']]
df.columns = ['ds', 'y']  # ds:datestamp, y:target value

# Model
model = Prophet()
model.fit(df)

# Forecast
future = model.make_future_dataframe(periods=14) #forecast 14 days
forecast = model.predict(future)

# Plot
fig = model.plot(forecast)
```

```
INFO:prophet:Disabling yearly seasonality. Run prophet with yearly_seasonality=True to override this.
INFO:prophet:Disabling daily seasonality. Run prophet with daily_seasonality=True to override this.
DEBUG:cmdstanpy:input tempfile: /tmp/tmpba5dfjsc/lbv2uetk.json
DEBUG:cmdstanpy:input tempfile: /tmp/tmpba5dfjsc/3u7upw6b.json
DEBUG:cmdstanpy:idx 0
DEBUG:cmdstanpy:running CmdStan, num_threads: None
DEBUG:cmdstanpy:CmdStan args: ['/usr/local/lib/python3.11/dist-packages/prophet/stan_model/prophet_model.bin', '
04:16:07 - cmdstanpy - INFO - Chain [1] start processing
INFO:cmdstanpy:Chain [1] start processing
04:16:07 - cmdstanpy - INFO - Chain [1] done processing
INFO:cmdstanpy:Chain [1] done processing
```
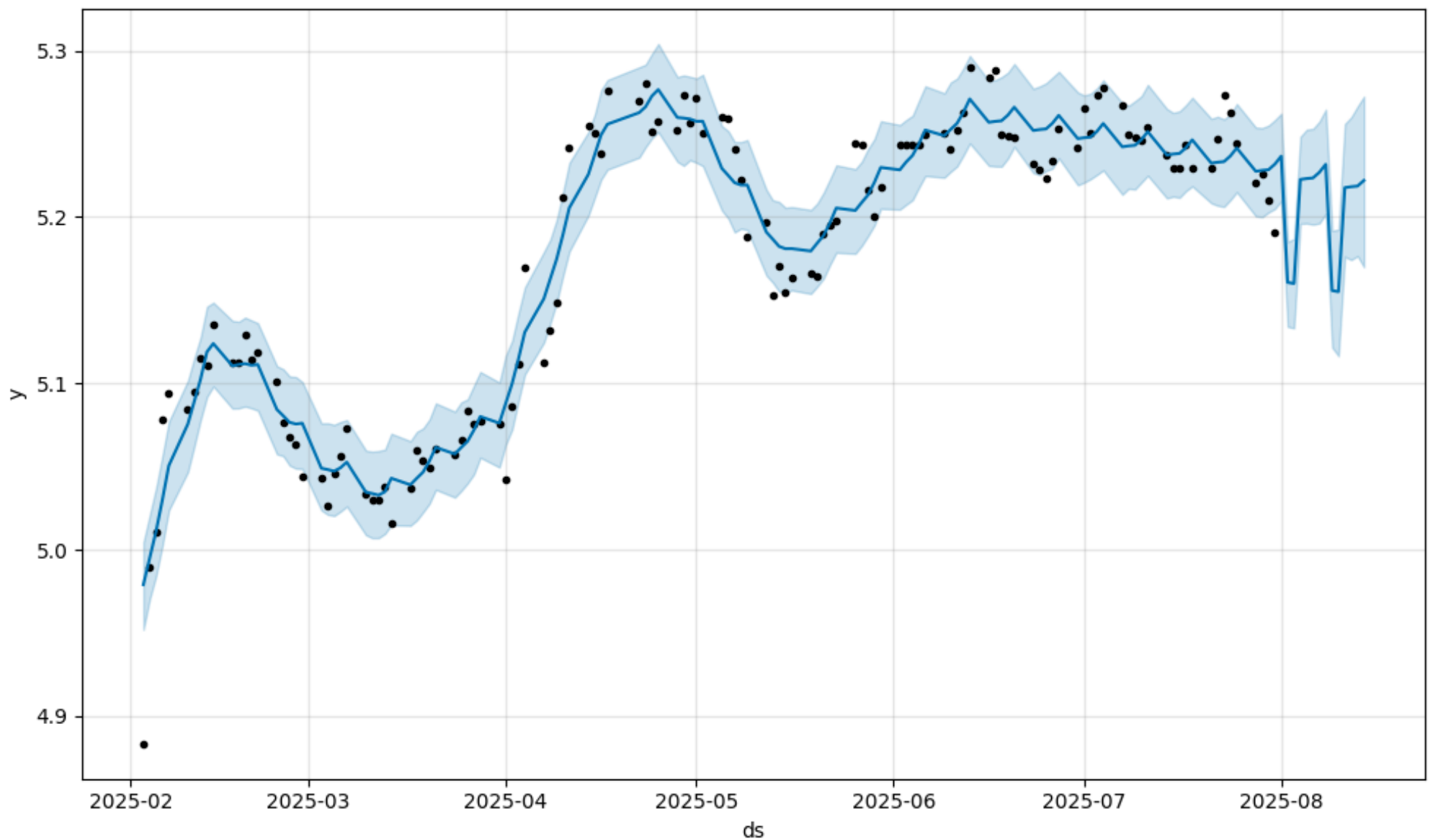
```
forecast_14 = forecast[['ds', 'yhat', 'yhat_lower', 'yhat_upper']]
print(forecast_14)
```

```
            ds      yhat  yhat_lower  yhat_upper
0   2025-02-03  4.979065    4.952071    5.004572
1   2025-02-04  4.995211    4.970576    5.021063
2   2025-02-05  5.011180    4.984458    5.037397
3   2025-02-06  5.030143    5.002914    5.056876
4   2025-02-07  5.050540    5.023828    5.077102
..         ...       ...         ...         ...
136 2025-08-10  5.155130    5.116527    5.192476
137 2025-08-11  5.217662    5.176187    5.256011
138 2025-08-12  5.218215    5.174286    5.260028
139 2025-08-13  5.218591    5.176561    5.266522
140 2025-08-14  5.221961    5.169978    5.272417

[141 rows x 4 columns]
```
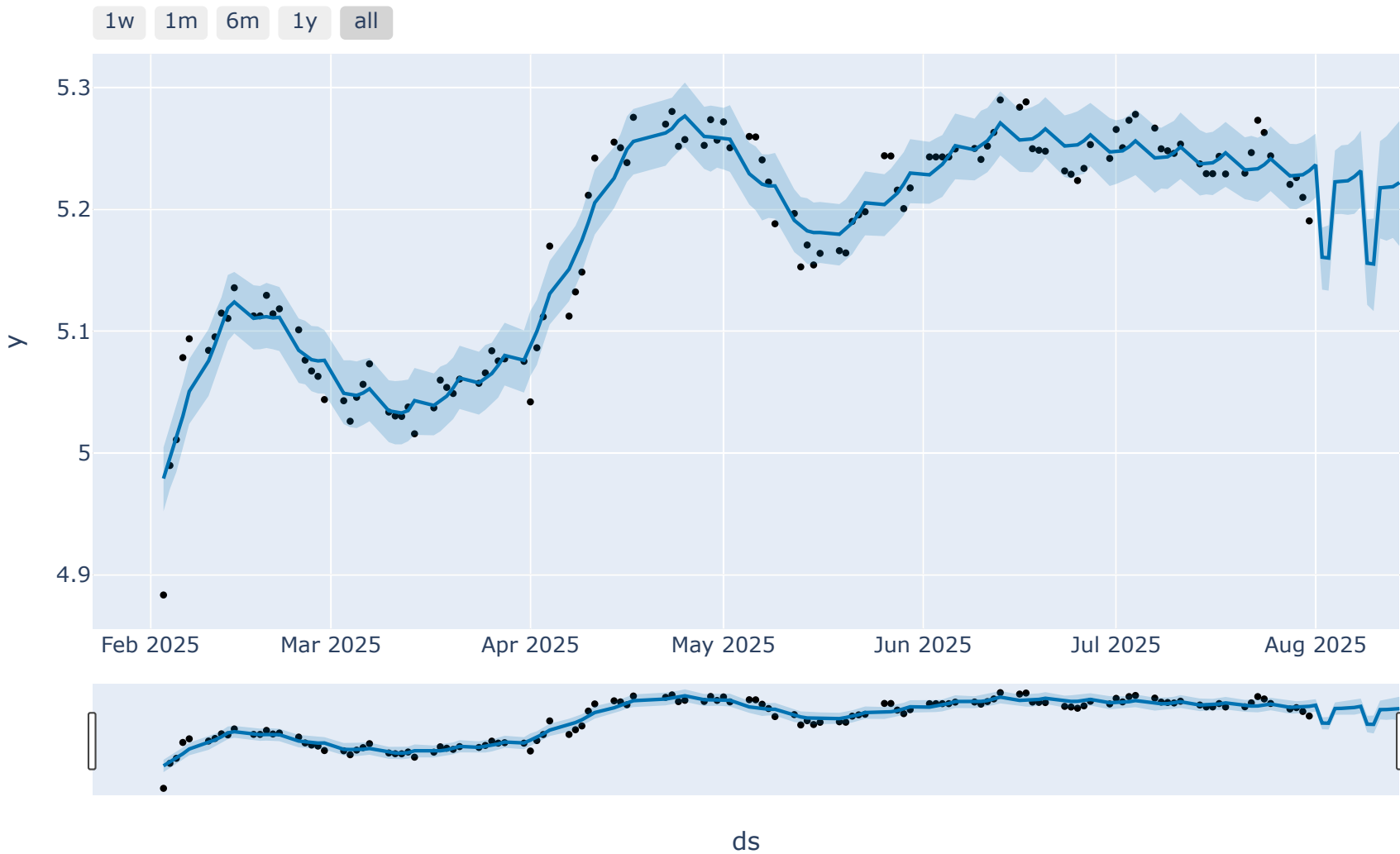
```
fig2 = model.plot_components(forecast)
```
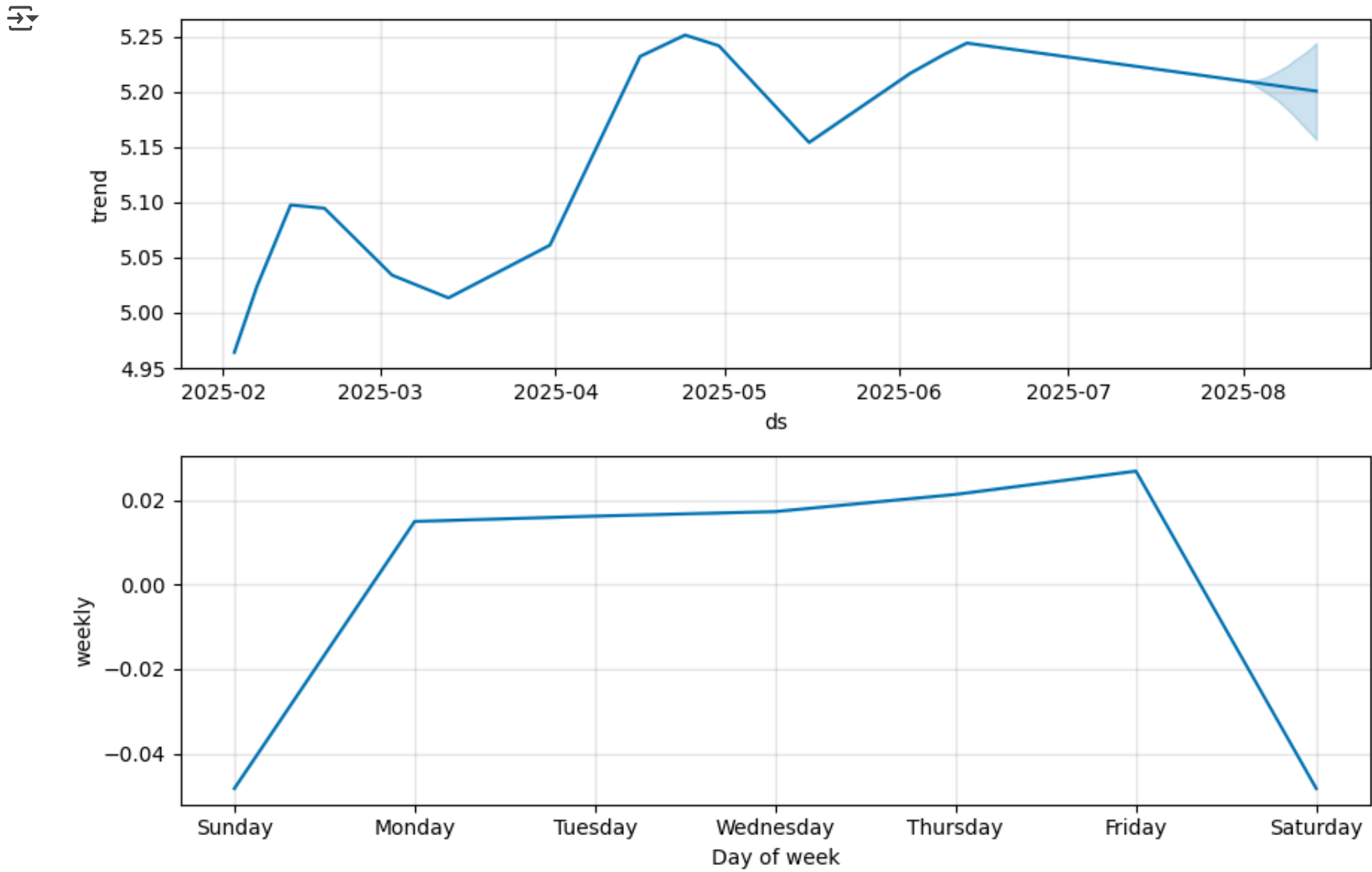
```
# Interactive figure
from prophet.plot import plot_plotly, plot_components_plotly

plot_plotly(model, forecast)
```

⤵


```
start_rate = forecast['yhat'].iloc[-14-1]
end_rate = forecast['yhat'].iloc[-1]
rate_change = end_rate - start_rate
trend = "increase" if rate_change > 0 else "decrease" if rate_change < 0 else "remain stable"

start_day = forecast['ds'].iloc[-14-1]
end_day = forecast['ds'].iloc[-1]

summary = (
    f"The CAD to CNY exchange rate is forecasted to {trend} by "
    f"{abs(rate_change)/start_rate*100:.2f}% over the next 14 days, "
    f"from {start_rate:.4f} to {end_rate:.4f} for date: {start_day} to {end_day}."
)

print("Prediction Summary:")
print(summary)
```

⤵ Prediction Summary:
    The CAD to CNY exchange rate is forecasted to decrease by 0.19% over the next 14 days, from 5.2318 to 5.2220 for

B. Using ARIMA

- see separate notebook

C. Using LSTM/RNN/Transformer

- see separate notebook

∨ 3. Using LLM to explain insights of generated prediction results

```
# Install Hugging Face Transformers & Datasets
!pip install transformers accelerate bitsandbytes huggingface_hub
```

```
Requirement already satisfied: transformers in /usr/local/lib/python3.11/dist-packages (4.55.0)
Requirement already satisfied: accelerate in /usr/local/lib/python3.11/dist-packages (1.9.0)
Collecting bitsandbytes
  Downloading bitsandbytes-0.46.1-py3-none-manylinux_2_24_x86_64.whl.metadata (10 kB)
Requirement already satisfied: huggingface_hub in /usr/local/lib/python3.11/dist-packages (0.34.3)
Requirement already satisfied: filelock in /usr/local/lib/python3.11/dist-packages (from transformers) (3.18.0)
Requirement already satisfied: numpy>=1.17 in /usr/local/lib/python3.11/dist-packages (from transformers) (2.0.2
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.11/dist-packages (from transformers) (2
Requirement already satisfied: pyyaml>=5.1 in /usr/local/lib/python3.11/dist-packages (from transformers) (6.0.2
Requirement already satisfied: regex!=2019.12.17 in /usr/local/lib/python3.11/dist-packages (from transformers)
Requirement already satisfied: requests in /usr/local/lib/python3.11/dist-packages (from transformers) (2.32.3)
Requirement already satisfied: tokenizers<0.22,>=0.21 in /usr/local/lib/python3.11/dist-packages (from transform
Requirement already satisfied: safetensors>=0.4.3 in /usr/local/lib/python3.11/dist-packages (from transformers)
Requirement already satisfied: tqdm>=4.27 in /usr/local/lib/python3.11/dist-packages (from transformers) (4.67.1
Requirement already satisfied: psutil in /usr/local/lib/python3.11/dist-packages (from accelerate) (5.9.5)
Requirement already satisfied: torch>=2.0.0 in /usr/local/lib/python3.11/dist-packages (from accelerate) (2.6.0+
Requirement already satisfied: fsspec>=2023.5.0 in /usr/local/lib/python3.11/dist-packages (from huggingface_hub
Requirement already satisfied: typing-extensions>=3.7.4.3 in /usr/local/lib/python3.11/dist-packages (from huggi
Requirement already satisfied: hf-xet<2.0.0,>=1.1.3 in /usr/local/lib/python3.11/dist-packages (from huggingface
Requirement already satisfied: networkx in /usr/local/lib/python3.11/dist-packages (from torch>=2.0.0->accelerat
Requirement already satisfied: jinja2 in /usr/local/lib/python3.11/dist-packages (from torch>=2.0.0->accelerate)
Collecting nvidia-cuda-nvrtc-cu12==12.4.127 (from torch>=2.0.0->accelerate)
  Downloading nvidia_cuda_nvrtc_cu12-12.4.127-py3-none-manylinux2014_x86_64.whl.metadata (1.5 kB)
Collecting nvidia-cuda-runtime-cu12==12.4.127 (from torch>=2.0.0->accelerate)
  Downloading nvidia_cuda_runtime_cu12-12.4.127-py3-none-manylinux2014_x86_64.whl.metadata (1.5 kB)
Collecting nvidia-cuda-cupti-cu12==12.4.127 (from torch>=2.0.0->accelerate)
  Downloading nvidia_cuda_cupti_cu12-12.4.127-py3-none-manylinux2014_x86_64.whl.metadata (1.6 kB)
Collecting nvidia-cudnn-cu12==9.1.0.70 (from torch>=2.0.0->accelerate)
  Downloading nvidia_cudnn_cu12-9.1.0.70-py3-none-manylinux2014_x86_64.whl.metadata (1.6 kB)
Collecting nvidia-cublas-cu12==12.4.5.8 (from torch>=2.0.0->accelerate)
  Downloading nvidia_cublas_cu12-12.4.5.8-py3-none-manylinux2014_x86_64.whl.metadata (1.5 kB)
Collecting nvidia-cufft-cu12==11.2.1.3 (from torch>=2.0.0->accelerate)
  Downloading nvidia_cufft_cu12-11.2.1.3-py3-none-manylinux2014_x86_64.whl.metadata (1.5 kB)
Collecting nvidia-curand-cu12==10.3.5.147 (from torch>=2.0.0->accelerate)
  Downloading nvidia_curand_cu12-10.3.5.147-py3-none-manylinux2014_x86_64.whl.metadata (1.5 kB)
Collecting nvidia-cusolver-cu12==11.6.1.9 (from torch>=2.0.0->accelerate)
  Downloading nvidia_cusolver_cu12-11.6.1.9-py3-none-manylinux2014_x86_64.whl.metadata (1.6 kB)
Collecting nvidia-cusparse-cu12==12.3.1.170 (from torch>=2.0.0->accelerate)
  Downloading nvidia_cusparse_cu12-12.3.1.170-py3-none-manylinux2014_x86_64.whl.metadata (1.6 kB)
Requirement already satisfied: nvidia-cusparselt-cu12==0.6.2 in /usr/local/lib/python3.11/dist-packages (from to
Collecting nvidia-nccl-cu12==2.21.5 (from torch>=2.0.0->accelerate)
  Downloading nvidia_nccl_cu12-2.21.5-py3-none-manylinux2014_x86_64.whl.metadata (1.8 kB)
Requirement already satisfied: nvidia-nvtx-cu12==12.4.127 in /usr/local/lib/python3.11/dist-packages (from torch
Collecting nvidia-nvjitlink-cu12==12.4.127 (from torch>=2.0.0->accelerate)
  Downloading nvidia_nvjitlink_cu12-12.4.127-py3-none-manylinux2014_x86_64.whl.metadata (1.5 kB)
Requirement already satisfied: triton==3.2.0 in /usr/local/lib/python3.11/dist-packages (from torch>=2.0.0->acce
Requirement already satisfied: sympy==1.13.1 in /usr/local/lib/python3.11/dist-packages (from torch>=2.0.0->acce
Requirement already satisfied: mpmath<1.4,>=1.1.0 in /usr/local/lib/python3.11/dist-packages (from sympy==1.13.1
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.11/dist-packages (from request
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.11/dist-packages (from requests->transform
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.11/dist-packages (from requests->tra
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.11/dist-packages (from requests->tra
Requirement already satisfied: MarkupSafe>=2.0 in /usr/local/lib/python3.11/dist-packages (from jinja2->torch>=2
Downloading bitsandbytes-0.46.1-py3-none-manylinux_2_24_x86_64.whl (72.9 MB)
                                         72.9/72.9 MB 14.0 MB/s eta 0:00:00
Downloading nvidia_cublas_cu12-12.4.5.8-py3-none-manylinux2014_x86_64.whl (363.4 MB)
                                         363.4/363.4 MB 5.6 MB/s eta 0:00:00
Downloading nvidia_cuda_cupti_cu12-12.4.127-py3-none-manylinux2014_x86_64.whl (13.8 MB)
                                         13.8/13.8 MB 122.4 MB/s eta 0:00:00
Downloading nvidia_cuda_nvrtc_cu12-12.4.127-py3-none-manylinux2014_x86_64.whl (24.6 MB)
                                         24.6/24.6 MB 66.9 MB/s eta 0:00:00
Downloading nvidia_cuda_runtime_cu12-12.4.127-py3-none-manylinux2014_x86_64.whl (883 kB)
                                         883.7/883.7 kB 53.9 MB/s eta 0:00:00
Downloading nvidia_cudnn_cu12-9.1.0.70-py3-none-manylinux2014_x86_64.whl (664.8 MB)
                                         664.8/664.8 MB 1.3 MB/s eta 0:00:00
Downloading nvidia_cufft_cu12-11.2.1.3-py3-none-manylinux2014_x86_64.whl (211.5 MB)
                                         211.5/211.5 MB 4.7 MB/s eta 0:00:00
Downloading nvidia_curand_cu12-10.3.5.147-py3-none-manylinux2014_x86_64.whl (56.3 MB)
                                         56.3/56.3 MB 14.0 MB/s eta 0:00:00
Downloading nvidia_cusolver_cu12-11.6.1.9-py3-none-manylinux2014_x86_64.whl (127.9 MB)
                                         127.9/127.9 MB 7.9 MB/s eta 0:00:00
Downloading nvidia cusparse cu12-12.3.1.170-py3-none-manylinux2014 x86 64.whl (207.5 MB)
```

```
Downloading nvidia_cusparse_cu12-12.5.1.170-py3-none-manylinux2011_x86_64.whl (207.5 MB)
                                      ────────────────── 207.5/207.5 MB 6.0 MB/s eta 0:00:00
Downloading nvidia_nccl_cu12-2.21.5-py3-none-manylinux2014_x86_64.whl (188.7 MB)
                                      ────────────────── 188.7/188.7 MB 7.7 MB/s eta 0:00:00
Downloading nvidia_nvjitlink_cu12-12.4.127-py3-none-manylinux2014_x86_64.whl (21.1 MB)
                                      ────────────────── 21.1/21.1 MB 104.7 MB/s eta 0:00:00
Installing collected packages: nvidia-nvjitlink-cu12, nvidia-nccl-cu12, nvidia-curand-cu12, nvidia-cufft-cu12, n
  Attempting uninstall: nvidia-nvjitlink-cu12
    Found existing installation: nvidia-nvjitlink-cu12 12.5.82
    Uninstalling nvidia-nvjitlink-cu12-12.5.82:
      Successfully uninstalled nvidia-nvjitlink-cu12-12.5.82
  Attempting uninstall: nvidia-nccl-cu12
    Found existing installation: nvidia-nccl-cu12 2.23.4
    Uninstalling nvidia-nccl-cu12-2.23.4:
      Successfully uninstalled nvidia-nccl-cu12-2.23.4
  Attempting uninstall: nvidia-curand-cu12
    Found existing installation: nvidia-curand-cu12 10.3.6.82
    Uninstalling nvidia-curand-cu12-10.3.6.82:
      Successfully uninstalled nvidia-curand-cu12-10.3.6.82
  Attempting uninstall: nvidia-cufft-cu12
    Found existing installation: nvidia-cufft-cu12 11.2.3.61
    Uninstalling nvidia-cufft-cu12-11.2.3.61:
      Successfully uninstalled nvidia-cufft-cu12-11.2.3.61
  Attempting uninstall: nvidia-cuda-runtime-cu12
    Found existing installation: nvidia-cuda-runtime-cu12 12.5.82
    Uninstalling nvidia-cuda-runtime-cu12-12.5.82:
      Successfully uninstalled nvidia-cuda-runtime-cu12-12.5.82
  Attempting uninstall: nvidia-cuda-nvrtc-cu12
    Found existing installation: nvidia-cuda-nvrtc-cu12 12.5.82
    Uninstalling nvidia-cuda-nvrtc-cu12-12.5.82:
      Successfully uninstalled nvidia-cuda-nvrtc-cu12-12.5.82
  Attempting uninstall: nvidia-cuda-cupti-cu12
    Found existing installation: nvidia-cuda-cupti-cu12 12.5.82
    Uninstalling nvidia-cuda-cupti-cu12-12.5.82:
      Successfully uninstalled nvidia-cuda-cupti-cu12-12.5.82
  Attempting uninstall: nvidia-cublas-cu12
    Found existing installation: nvidia-cublas-cu12 12.5.3.2
    Uninstalling nvidia-cublas-cu12-12.5.3.2:
      Successfully uninstalled nvidia-cublas-cu12-12.5.3.2
  Attempting uninstall: nvidia-cusparse-cu12
    Found existing installation: nvidia-cusparse-cu12 12.5.1.3
    Uninstalling nvidia-cusparse-cu12-12.5.1.3:
      Successfully uninstalled nvidia-cusparse-cu12-12.5.1.3
  Attempting uninstall: nvidia-cudnn-cu12
    Found existing installation: nvidia-cudnn-cu12 9.3.0.75
    Uninstalling nvidia-cudnn-cu12-9.3.0.75:
      Successfully uninstalled nvidia-cudnn-cu12-9.3.0.75
  Attempting uninstall: nvidia-cusolver-cu12
    Found existing installation: nvidia-cusolver-cu12 11.6.3.83
    Uninstalling nvidia-cusolver-cu12-11.6.3.83:
      Successfully uninstalled nvidia-cusolver-cu12-11.6.3.83
Successfully installed bitsandbytes-0.46.1 nvidia-cublas-cu12-12.4.5.8 nvidia-cuda-cupti-cu12-12.4.127 nvidia-cu
```

```
from huggingface_hub import notebook_login
notebook_login()
```

- Code below reference to: https://huggingface.co/meta-llama/Llama-2-7b-chat-hf

```
from huggingface_hub import login
login(new_session=False)
```

```
summary = "The CAD to CNY exchange rate is forecasted to decrease by 0.19% over the next 14 days, from 5.2318 to 5.2
```

```python
# Use a pipeline as a high-level helper
from transformers import pipeline

pipe = pipeline("text-generation", model="meta-llama/Llama-2-7b-chat-hf")

prompt = f"""You act a financial analyst, here is a exchange rate prediction made by a python project,
         Please take a look at the result {summary}, and provide more insightful explainations.
         """

messages = [
    {"role": "user", "content": prompt},
]
pipe(messages)
```

Loading checkpoint shards: 100%   2/2 [00:00<00:00, 1.91it/s]

```
Device set to use cuda:0
---------------------------------------------------------------------------
OutOfMemoryError                          Traceback (most recent call last)
/tmp/ipython-input-36575242.py in <cell line: 0>()
      2 from transformers import pipeline
      3
----> 4 pipe = pipeline("text-generation", model="meta-llama/Llama-2-7b-chat-hf")
      5
      6 prompt = f"""You act a financial analyst, here is a exchange rate prediction made by a python project,

                            ‹› 11 frames

/usr/local/lib/python3.11/dist-packages/torch/nn/modules/module.py in convert(t)
   1327                     memory_format=convert_to_format,
   1328                 )
-> 1329             return t.to(
   1330                 device,
   1331                 dtype if t.is_floating_point() or t.is_complex() else None,

OutOfMemoryError: CUDA out of memory. Tried to allocate 86.00 MiB. GPU 0 has a total capacity of 14.74 GiB of
which 82.12 MiB is free. Process 52947 has 14.66 GiB memory in use. Of the allocated memory 14.52 GiB is
allocated by PyTorch, and 13.30 MiB is reserved by PyTorch but unallocated. If reserved but unallocated memory
is large try setting PYTORCH_CUDA_ALLOC_CONF=expandable_segments:True to avoid fragmentation.  See
documentation for Memory Management  (https://pytorch.org/docs/stable/notes/cuda.html#environment-variables)
```

```python
from transformers import AutoTokenizer, AutoModelForCausalLM
import torch

model_name = "meta-llama/Llama-2-7b-chat-hf"  # change to any model you want

tokenizer = AutoTokenizer.from_pretrained(model_name)
model = AutoModelForCausalLM.from_pretrained(model_name)

messages = [
    {"role": "user", "content": "Who are you?"},
]

inputs = tokenizer.apply_chat_template(
    messages,
    add_generation_prompt=True,
    tokenize=True,
    return_dict=True,
    return_tensors="pt",
).to(model.device)

outputs = model.generate(**inputs, max_new_tokens=40)
print(tokenizer.decode(outputs[0][inputs["input_ids"].shape[-1]:]))
```

model.safetensors.index.json: 100%	26.8k/26.8k [00:00<00:00, 608kB/s]	
Fetching 2 files: 100%	2/2 [07:47<00:00, 467.59s/it]	
model-00001-of-00002.safetensors: 100%	9.98G/9.98G [07:47<00:00, 56.6MB/s]	
model-00002-of-00002.safetensors: 100%	3.50G/3.50G [05:15<00:00, 6.42MB/s]	
Loading checkpoint shards: 0%	0/2 [00:00<?, ?it/s]	

> the session crashed after using all available GPUs. So will try using Hugging Face Ingerence API call.

Using Inference API instead of local GPUs

- code reference for inference API: https://huggingface.co/meta-llama/Meta-Llama-3-8B-Instruct?inference_api=true&inference_provider=novita&language=python&client=openai

```python
import os
os.environ['HF_TOKEN'] = ''
```

```python
prompt = f"""You act a financial analyst, here is a exchange rate prediction made by a python project,
        Please take a look at the result {summary}, and provide more insightful explainations.
        """
```

```
import os
from huggingface_hub import InferenceClient

client = InferenceClient(
    provider="novita",
    api_key=os.environ["HF_TOKEN"],
)

completion = client.chat.completions.create(
    model="meta-llama/Meta-Llama-3-8B-Instruct",
    messages=[
        {
            "role": "user",
            "content": prompt
        }
    ],
)

print(completion.choices[0].message)
```

ChatCompletionOutputMessage(role='assistant', content="**Exchange Rate Forecast Analysis**\n\nThank you for prov

```
print(completion.choices[0].message['content'])
```

Exchange Rate Forecast Analysis

Thank you for providing the exchange rate prediction model output. As a financial analyst, I'll review the resul

Key Findings:

1. **CAD to CNY Exchange Rate Decrease:** The model predicts a decrease in the CAD to CNY exchange rate by 0.19
2. **Forecasted Exchange Rate:** The forecasted exchange rate for CAD to CNY on 2025-08-14 is 5.2220, down from
3. **Timeframe:** The prediction is made over a 14-day period, which is a relatively short-term forecast.

Insights:

1. **Market Sentiment:** The predicted decrease in the CAD to CNY exchange rate suggests a slightly bearish mark
2. **Risk Management:** For investors and businesses with exposure to the CAD to CNY exchange rate, a 0.19% dec
3. **Economic Indicators:** To further understand the drivers behind this forecast, it's crucial to examine eco
4. **Monitoring and Re-evaluation:** Given the relatively short-term nature of the forecast, it's essential to

Recommendations:

1. **Continuously Monitor Exchange Rates:** Keep a close eye on the CAD to CNY exchange rate and any changes in
2. **Assess Economic Indicators:** Examine economic indicators for both Canada and China to better understand t
3. **Consider Hedging Strategies:** If you have exposure to the CAD to CNY exchange rate, consider implementing
4. **Re-evaluate the Forecast:** Regularly re-evaluate the forecast as more data becomes available to refine the

By taking these steps, you can make more informed decisions and better manage the risks associated with exchange