```
!pip install pytrends
```

```
Requirement already satisfied: pytrends in
/usr/local/lib/python3.11/dist-packages (4.9.2)
Requirement already satisfied: requests>=2.0 in
/usr/local/lib/python3.11/dist-packages (from pytrends) (2.32.3)
Requirement already satisfied: pandas>=0.25 in
/usr/local/lib/python3.11/dist-packages (from pytrends) (2.2.2)
Requirement already satisfied: lxml in /usr/local/lib/python3.11/dist-
packages (from pytrends) (5.4.0)
Requirement already satisfied: numpy>=1.23.2 in
/usr/local/lib/python3.11/dist-packages (from pandas>=0.25->pytrends)
(2.0.2)
Requirement already satisfied: python-dateutil>=2.8.2 in
/usr/local/lib/python3.11/dist-packages (from pandas>=0.25->pytrends)
(2.9.0.post0)
Requirement already satisfied: pytz>=2020.1 in
/usr/local/lib/python3.11/dist-packages (from pandas>=0.25->pytrends)
(2025.2)
Requirement already satisfied: tzdata>=2022.7 in
/usr/local/lib/python3.11/dist-packages (from pandas>=0.25->pytrends)
(2025.2)
Requirement already satisfied: charset-normalizer<4,>=2 in
/usr/local/lib/python3.11/dist-packages (from requests>=2.0->pytrends)
(3.4.2)
Requirement already satisfied: idna<4,>=2.5 in
/usr/local/lib/python3.11/dist-packages (from requests>=2.0->pytrends)
(3.10)
Requirement already satisfied: urllib3<3,>=1.21.1 in
/usr/local/lib/python3.11/dist-packages (from requests>=2.0->pytrends)
(2.4.0)
Requirement already satisfied: certifi>=2017.4.17 in
/usr/local/lib/python3.11/dist-packages (from requests>=2.0->pytrends)
(2025.4.26)
Requirement already satisfied: six>=1.5 in
/usr/local/lib/python3.11/dist-packages (from python-dateutil>=2.8.2-
>pandas>=0.25->pytrends) (1.17.0)
```

Installing necessary libraries

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
import pytrends
import plotly.express as px
from pytrends.request import TrendReq
import time
```

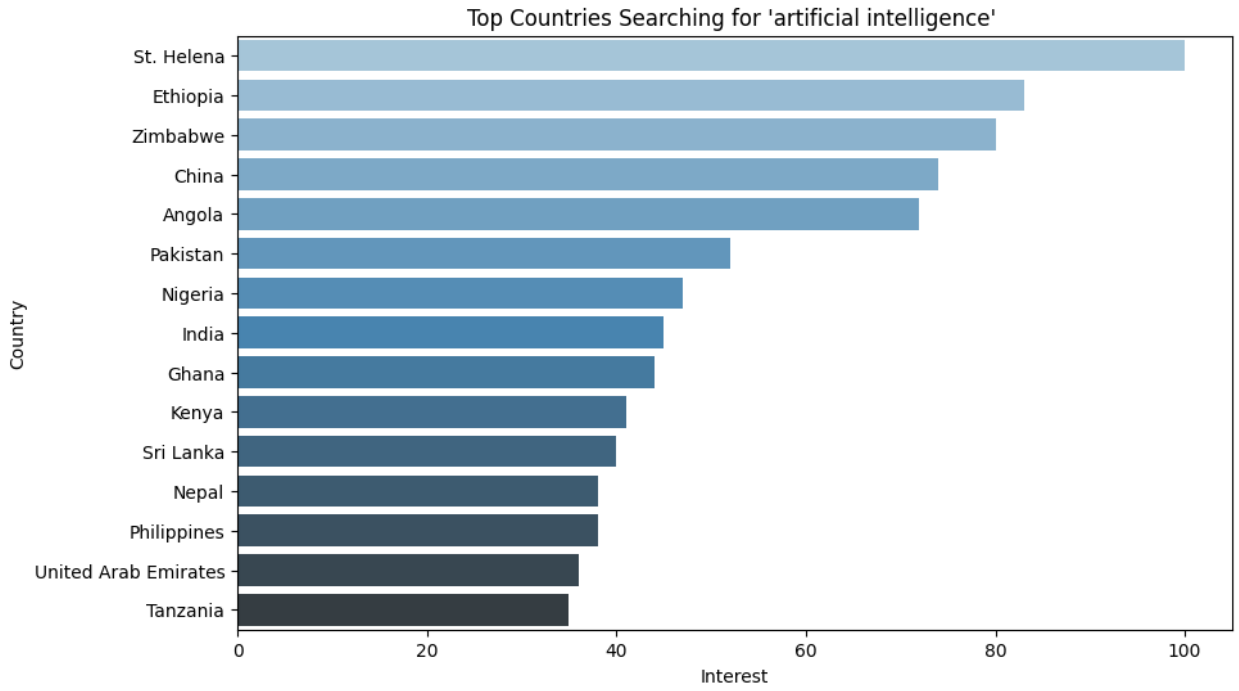
setup for pytrends library

```
pytrends = TrendReq(hl='en-US', tz=360)
keywords="artificial intelligence"

pytrends.build_payload(kw_list=[keywords],cat=0,timeframe='today 12-
m',geo='',gprop='')

time.sleep(5)  # Wait for 5 seconds (adjust as needed)

# Fetch and process region data
region_data = pytrends.interest_by_region()
region_data = region_data.sort_values(by=keywords, ascending=False)
region_data=region_data.head(15)
```

TOP 15 Countries with user given keyword

```
plt.figure(figsize=(10, 6))
sns.barplot(y=region_data.index,
x=region_data[keywords],palette="Blues_d")
plt.xlabel('Interest')
plt.ylabel('Country')
plt.title(f"Top Countries Searching for '{keywords}' ")
plt.show()
```

```
<ipython-input-71-64e5dd796edf>:2: FutureWarning:


Passing `palette` without assigning `hue` is deprecated and will be
removed in v0.14.0. Assign the `y` variable to `hue` and set
`legend=False` for the same effect.
```



Showcasing World Map

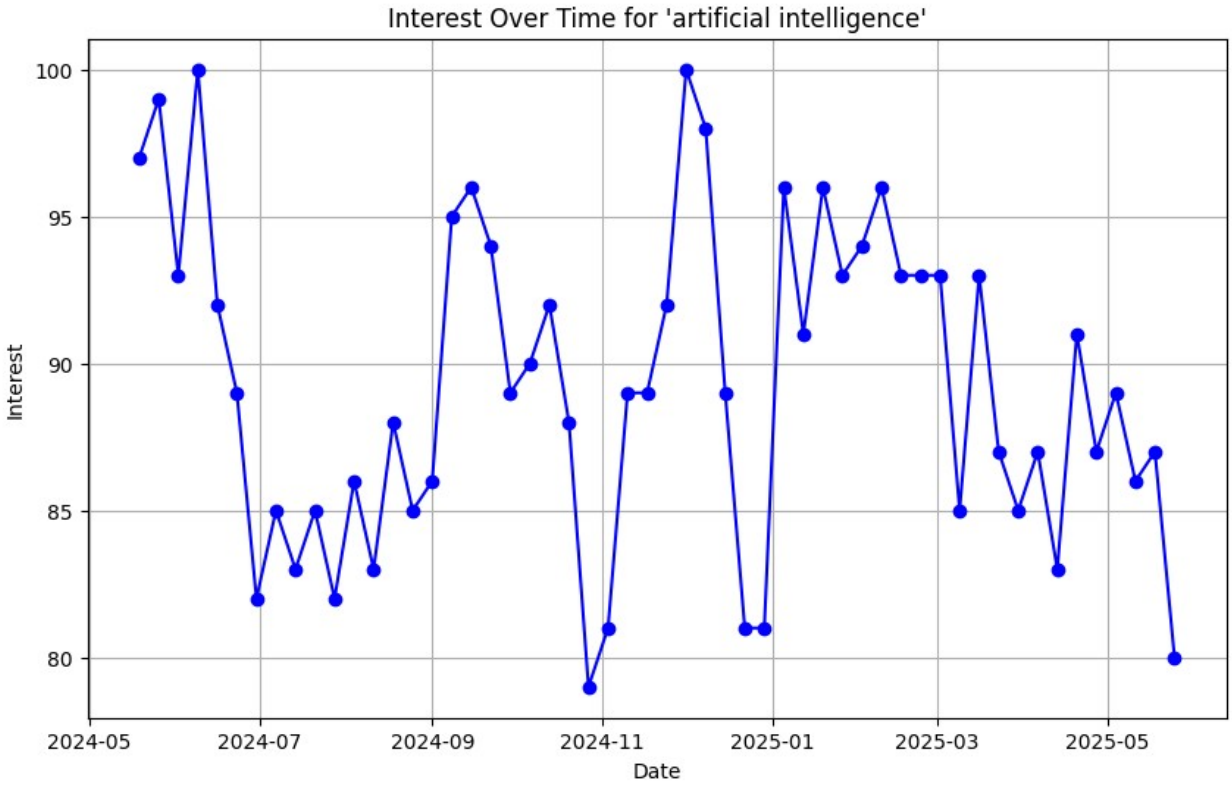
```
# WORLD MAP

# Reset the index and rename the index column to 'geoName'
region_data = region_data.reset_index()

fig=px.choropleth(region_data,
                  locations='geoName', # Use the correctly named
'geoName' column for locations
                  locationmode='country names',
                  color=keywords,
                  title=f"Search Interest for '{keywords}' by
country",
                  color_continuous_scale='Reds')
fig.show()
```

Interest Over time of last one year for user given keyword

```
time_df=pytrends.interest_over_time()
```

```
/usr/local/lib/python3.11/dist-packages/pytrends/request.py:260:
FutureWarning:
```

```
Downcasting object dtype arrays on .fillna, .ffill, .bfill is
deprecated and will change in a future version. Call
result.infer_objects(copy=False) instead. To opt-in to the future
behavior, set `pd.set_option('future.no_silent_downcasting', True)`


plt.figure(figsize=(10, 6))
plt.plot(time_df.index, time_df[keywords], marker='o', linestyle='-',
color='b')
plt.xlabel('Date')
plt.ylabel('Interest')
plt.grid(True)
plt.title(f"Interest Over Time for '{keywords}'")

Text(0.5, 1.0, "Interest Over Time for 'artificial intelligence'")
```

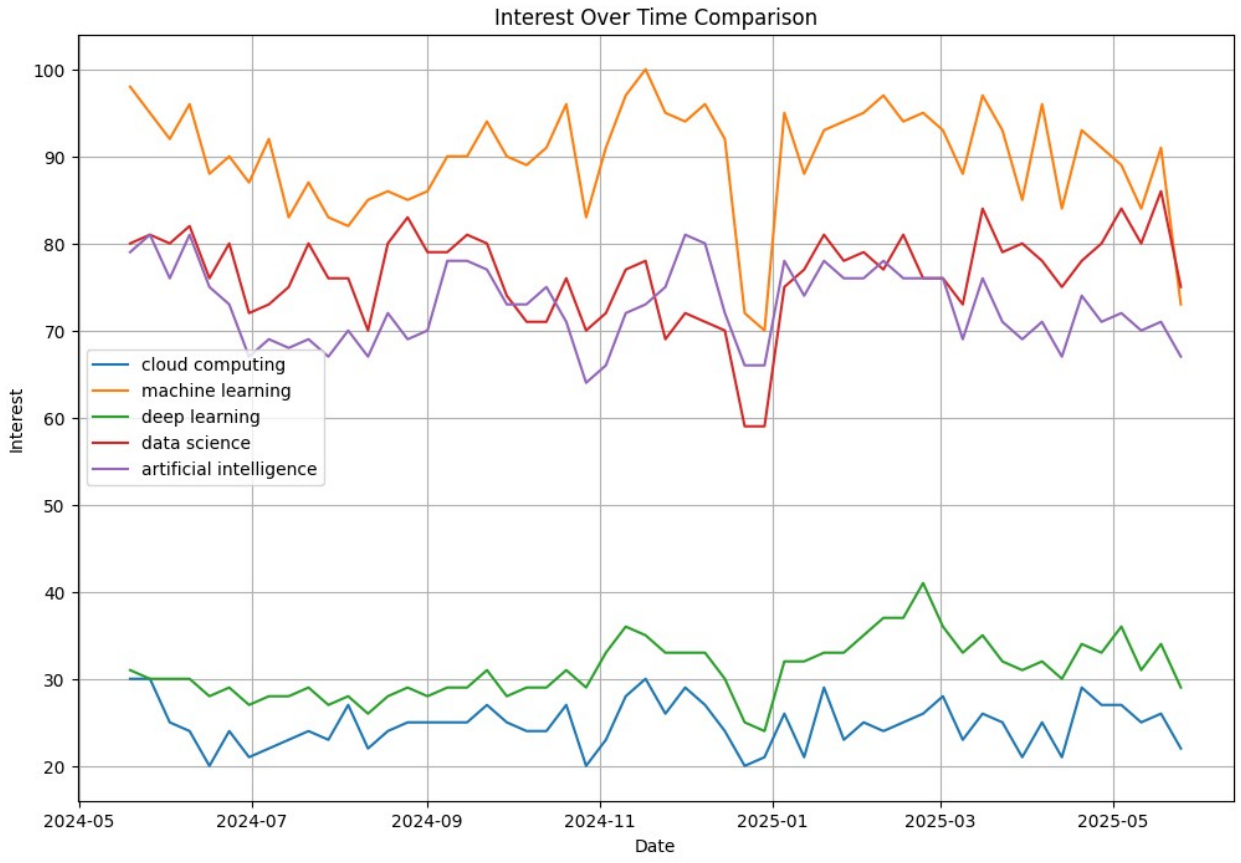


Comparison between different keywords

```
kw_list=['cloud computing','machine learning','deep learning','data
science','artificial intelligence']
pytrends.build_payload(kw_list,cat=0,timeframe='today 12-
m',geo='',gprop='')
```

```
compare_df=pytrends.interest_over_time()
plt.figure(figsize=(12, 8))
for keyword in kw_list:
    plt.plot(compare_df.index, compare_df[keyword], linestyle='-',
label=keyword)
plt.title('Interest Over Time Comparison')
plt.xlabel('Date')
plt.ylabel('Interest')
plt.legend()
plt.grid(True)
plt.show()
```

```
/usr/local/lib/python3.11/dist-packages/pytrends/request.py:260:
FutureWarning:

Downcasting object dtype arrays on .fillna, .ffill, .bfill is
deprecated and will change in a future version. Call
result.infer_objects(copy=False) instead. To opt-in to the future
behavior, set `pd.set_option('future.no_silent_downcasting', True)`
```



Thank You