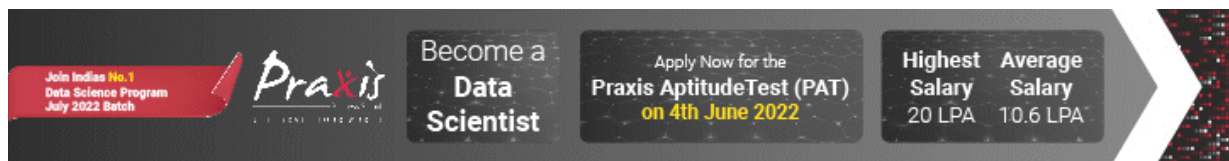


([https://www.intuit.com/careers/oa/technology/?cid=dis\\_aim\\_clicks\\_in\\_ttt-global\\_aw\\_round4techwhite|alltechaudience\\_img|280x90\\_intuit-talent](https://www.intuit.com/careers/oa/technology/?cid=dis_aim_clicks_in_ttt-global_aw_round4techwhite|alltechaudience_img|280x90_intuit-talent)).



(<https://analyticsindiamag.com/>).



([https://praxis.ac.in/data-science-course-in-bangalore/?utm\\_source=AIM&utm\\_medium=banner&utm\\_campaign=DS\\_PAT4June22](https://praxis.ac.in/data-science-course-in-bangalore/?utm_source=AIM&utm_medium=banner&utm_campaign=DS_PAT4June22)).

PUBLISHED ON AUGUST 13, 2020

IN DEVELOPERS CORNER

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## Plotly vs Seaborn – Comparing Python Libraries For Data Visualization

By Prudhvi varma(<https://analyticsindiamag.com/author/prudhvi-vermaanalyticsindiamag-com/>).



# COMPARING DATA VISUALIZATION LIBRARIES OF PYTHON

([https://www.sas.com/gms/redirect.jsp?detail=GMS224019\\_309942](https://www.sas.com/gms/redirect.jsp?detail=GMS224019_309942))

By the advancements of technology, we are generating huge amounts of data (<https://analyticsindiamag.com/beginners-guide-to-sqlalchemy-in-python-for-database-operations/>), in multiple ways. The data generated from the origin of the earth to the 20th century is equal to the data generated from 2001 to 2020. It means the data generated from the past 20 years is more than ever generated. The data is useless without getting insights (<https://analyticsindiamag.com/exploratory-data-analysis-in-python-vs-r/>), from it so we need to preprocess the data and need to find the trends in the data.

While working with machine learning projects, 70% of the time we spend in preprocessing of the data. By using a pictorial representation of data we can understand the data quickly and easily. So some researchers created visualization tools (<https://analyticsindiamag.com/top-8-open-source-data-visualization-tools/>), and libraries that are very useful in preprocessing. In this article, we will demonstrate how to use Plotly and seaborn tools.

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In this article, we will explore two popular visualization libraries in Python for data visualization – Plotly and Seaborn – and demonstrate the following basic types of visualization for comparison:-

- Box-plot
- Bar-plot
- Pair plot

## Box-plot

A box-plot is a visualization technique that indicates the outliers in the data and this is the standardized way of displaying our data based on outliers, Outliers (<https://analyticsindiamag.com/lessons-from-the-outliers/>), are nothing but the values away from the mean. Using this Box-plot we can compare the distribution of data between different datasets. Now let's visualize Box-plot using Plotly and seaborn.

## Using Seaborn

```
import seaborn as sns
```

```
import pandas as pd
```

```
df = sns.load_dataset("tips")

sns.boxplot( x=df["tip"], y=df["sex"],
palette="Accent");

plt.show()
```

## Using Plotly

```
import plotly.express as px

df = px.data.tips()

fig = px.box(df, x="day", y="total_bill",
color="smoker")

fig.show()
```

Output: In the above productions, the displayed dots can be represented as outliers, and here plotly is also displaying the values of Quantile regions in the Box-plot, but using seaborn we can visualize whether the dataset has outliers.

## Bar-plot

Bar-plots are the most common type of plots used for visualization. It displays the relationship between the absolute value and numerical value, They are represented in rectangular blocks. For example, in the data, if you need to find which country has the highest population, by using box-plot we can quickly get insights from it.


## Using Seaborn

```
import seaborn as sns

import pandas as pd

df = sns.load_dataset("tips")

sns.barplot(x="sex", y="total_bill", data=df)
```

 Seaborn and plotly


## Using Plotly

```
import plotly.express as px

df = px.data.tips()

fig = px.bar(df, x="sex", y="total_bill",
color='day' )

fig.show()
```

 Seaborn and plotly

Output: In the above outputs, using Bar-plot in seaborn we are able to know the ratio of male and female but by using Plotly we can know how many males and females are visiting on a particular day. By using Plotly we can get more information.

## Pair-plot

Pair plot is used to visualize the relationship in-between each variable in the dataset. In the X-axis and Y-axis, the data columns are placed, and by using multiple graphs we can get insights into the entire dataset at once. For example, let us have data on cars and we need to predict the millage using our model. Then in [Exploratory Data Analysis](https://analyticsindiamag.com/exploratory-data-analysis-in-python-vs-r/) (<https://analyticsindiamag.com/exploratory-data-analysis-in-python-vs-r/>),

using pair plot we can know what are variables influencing the millage. Mostly the mileage of the car is influenced by weight, speed, fuel type. We can get this type of visualization using a pair-plot.

### **Using Seaborn**

```
import seaborn as sns

import pandas as pd

df = sns.load_dataset("tips")

sns.pairplot(df)
```

### **Using Plotly**

```
import plotly.express as px

df = px.data.tips()

px.scatter_matrix(df)
```

Output – Comparing the above outputs, Seaborn is easy to visualize while using the Plotly tool it is hard to get insights from multiple graphs.

### **Conclusion**

Through the above demonstration, we can conclude that both plotly and seaborn are used for visualization purposes but plotly is best for its customization and interface. By hovering the mouse on the graph it displays values at each point and

we can download, zoom and crop our graph. This is a user-friendly visualization tool and popular tool among the Data scientists community (<http://machinehack.com>).

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Complete Python Guide To Deep Imbalanced Regression

(<https://analyticsindiamag.com/deep-imbalanced-regression-complete-guide/>).

Facebook Launches AI That Understands Language Without Labels

(<https://analyticsindiamag.com/facebook-launches-ai-that-understands-language-without-labels/>).

Behind SUPACE: The AI Portal Of The Supreme Court of India

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(<https://analyticsindiamag.com/openai-launches-100-mn-fund-to-catch-ai-startups-young/>).

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\_(<https://analyticsindiamag.com/author/prudhvi-vermaanalyticsindiamag-com/>).

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problems.



(<https://business.louisville.edu/learnmc>

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## Our Upcoming Events

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Conference, in-person (Bangalore)

### MachineCon 2022

*24th Jun*

**Register**  
(<https://machinecon.analyticsindiamag.com/tickets/>)

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Conference, Virtual

### Deep Learning DevCon 2022

*30th Jul*

**Register**  
(<https://dlldc.adasci.org/get-the-tickets/>)

---

Conference, in-person (Bangalore)

### Cypher 2022

*21-23rd Sep*

**Register**



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Stay Connected with a larger ecosystem of data science and ML Professionals

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## Telegram Channel

Discover special offers, top stories, upcoming events, and more.

**JOIN TELEGRAM**  
([HTTPS://T.ME/+TRPAPV7GNN2OZ1AZ](https://t.me/+TRPAPV7GNN2OZ1AZ))

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**Ireland gets its first AI ambassador. Will other countries follow suit? (<https://analyticsindiamag.com/ireland-gets-its-first-ai-ambassador-will-other-countries-follow-suit/>)**

India is behind the US, China, the UK, France, Japan and Germany in the top AI adopters list.



**Twitter former CEO Maheshwari allegedly threatened his Invact Metaversity co-founder (<https://analyticsindiamag.com/twitter-former-ceo-maheshwari-allegedly-threatened-his-invact-metaversity-co-founder/>)**

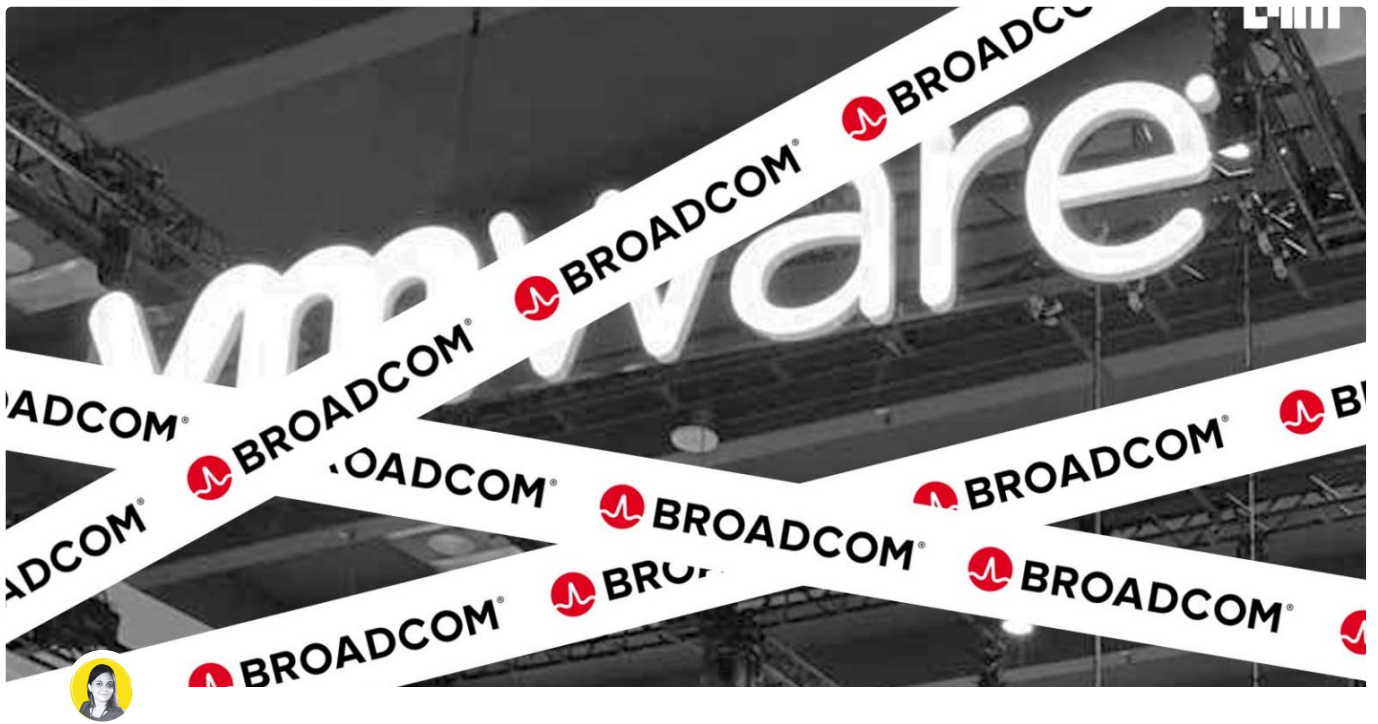
“I never invested to be used as an instrument of a co-founder bullying the other one,” Orosz said in the email.



**Allen Institute for AI introduces new benchmark for computer vision models (<https://analyticsindiamag.com/allen-institute-for->**

## ai-introduces-new-benchmark-for-computer-vision-models/)

GRIT is an evaluation only benchmark for evaluating the performance of vision systems across several image prediction tasks, concepts, and data sources.



### Why is Broadcom acquiring VMWare?

(<https://analyticsindiamag.com/why-is-broadcom-acquiring-vmware/>)

Following the closing of the transaction, the Broadcom Software Group will rebrand and operate as VMware.





## **PayPal to have over 800 job openings in India: Chandramouliswaran V (<https://analyticsindiamag.com/paypal-to-have-over-800-job-openings-in-india-chandramouliswaran-v/>)**

We have close to 1000 positions that are open, and we look to hire laterally across all levels.



## **WhatsApp Business on a mission to lure Indian enterprises (<https://analyticsindiamag.com/whatsapp-business-on-a-mission-to-lure-indian-enterprises/>)**

WhatsApp Business is among the 30 most downloaded apps in India, beating the likes of Jio Saavn and Wynn.

**NIT Calicut launches AI for cancer initiative  
(<https://analyticsindiamag.com/nit-calicut-launches-ai-for-cancer-initiative/>)**

Listen to this story The National Institute of Technology Calicut (NITC) and MVR Cancer Centre

**Startup's loss is IT's gain (<https://analyticsindiamag.com/startups-loss-is-its-gain/>)**

Around 40-50 per cent of employees are leaving startups and are getting absorbed by IT companies.

## **AWS launches all-new GPU-based instances for ML training and HPC (<https://analyticsindiamag.com/aws-launches-all-new-gpu-based-instances-for-ml-training-and-hpc/>)**

The all-new P4de instances are 2x higher than current GPUs.

## **The never-ending debate on AGI (<https://analyticsindiamag.com/the-never-ending-debate-on-agi/>)**

DeepMind's AlphaGo is one of the biggest success stories in AI.

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