Advance Data Visualization

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Hello!
I am Agil Haykal

I am a Data expert with extensive experience in multiple industries such as marketplace, insurance, banking, general taxation, consulting, and training.

In total, I trained more than 300 data scientists, engineers, and analysts.

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Quote of The Day

The greatest value of a picture is when it forces us to notice what we never expected to see.

- John W. Tukey

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Types of Data Visualization

Exploratory VS Explanatory

Exploratory Data Analysis

Exploratory analysis is what you do to get familiar with the data.

Exploratory analysis is the process of turning over 100 rocks to find perhaps 1 or 2 precious gemstones.

Main objective of exploratory data analysis is to **feed the curiosity and to answer the question.**

What should be done in Exploratory?

Here is the step by step of exploratory analysis:

1. Understand the context of data
2. **Ask questions and write it down**
3. Choose what method to get the insight
4. Interpret the visualization
5. Repeat

Example of questions

1. Is gender has correlation with survivor of Titanic?
2. How is the income distribution of user who can and cannot repay the loan?
3. How’s the probability of rain in each city?

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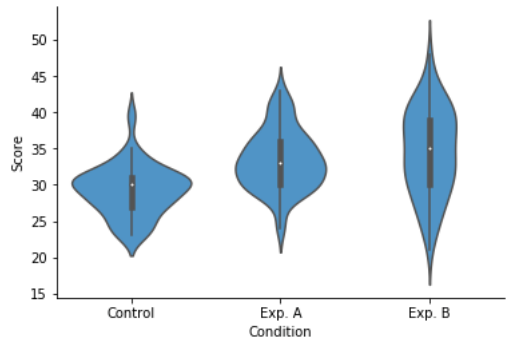
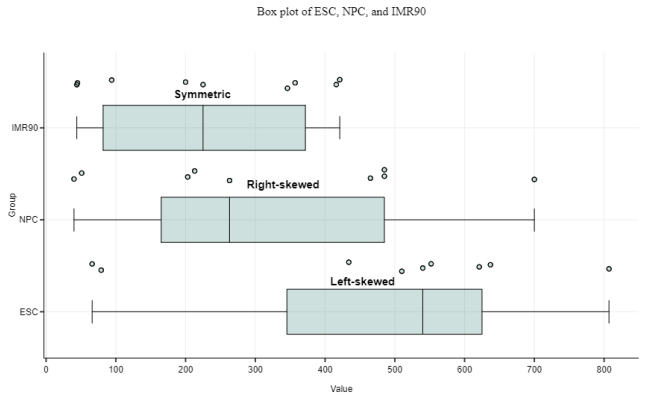
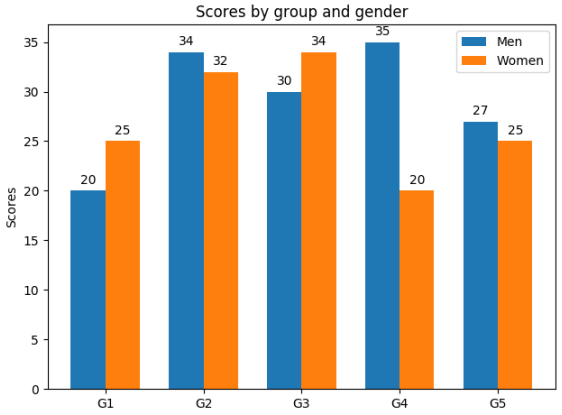
What kind of charts in Exploratory?

Any simple or sophisticated charts are used in this analysis. For example: Boxplot, Bubble plot, Violin plot, heatmap chart, Distribution Plot.

It is okay for you and only you to know the chart. Get so many insights through the charts as many as possible.







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Explanatory Data Analysis

Explanatory analysis is what happens when you have something specific you want to show an audience - probably about those 1 or 2 precious gemstones.

Main objective of explanatory data analysis is to make the **audiences understand** how precious the gem is.

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What should be done in Explanatory?

Here is how to do explanatory data analysis:

1. Create narration/story
2. Gather important insights from exploratory process which are relevant with the story
3. Understand who are the audiences (e.g. CEO, Investor, fellow analyst, children)
4. Choose proper charts for the audience
5. Utilize the color, size, space wisely to emphasize the content

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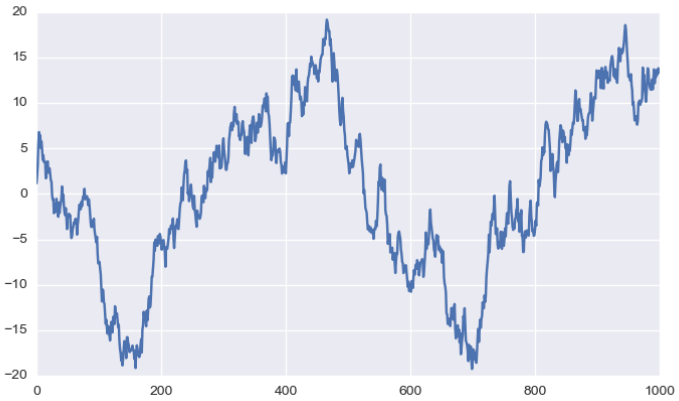
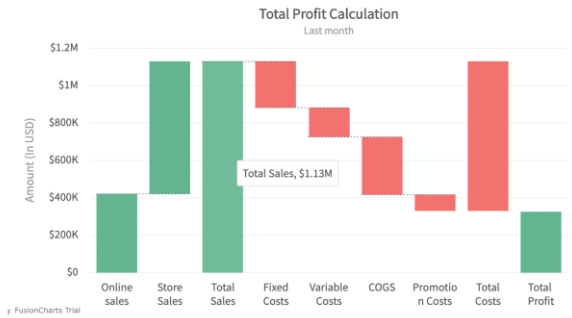
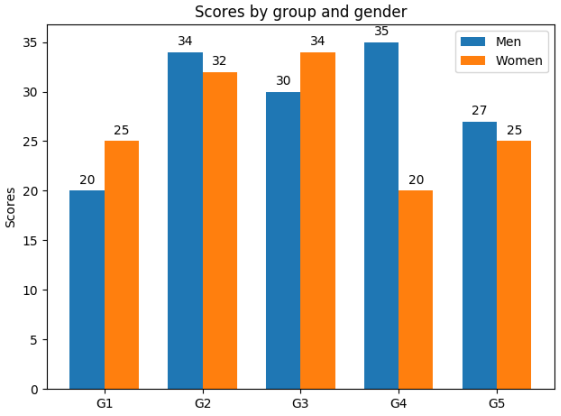
What kind of charts in Explanatory?

It must be easy-to-understand charts. If you must use sophisticated one, please explain how to read it.

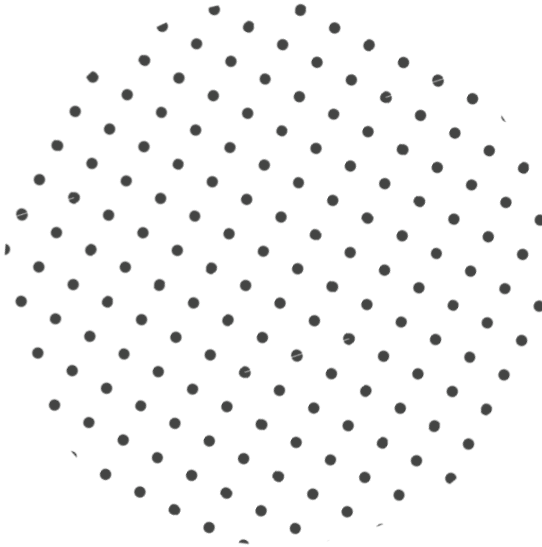
Here are popular charts for ordinary people: Pie Chart, Line Chart, Bar Chart, Stacked Bar Chart, Area Chart, Gauge Chart, Map chart, Histogram, Waterfall chart.







Plot Customization



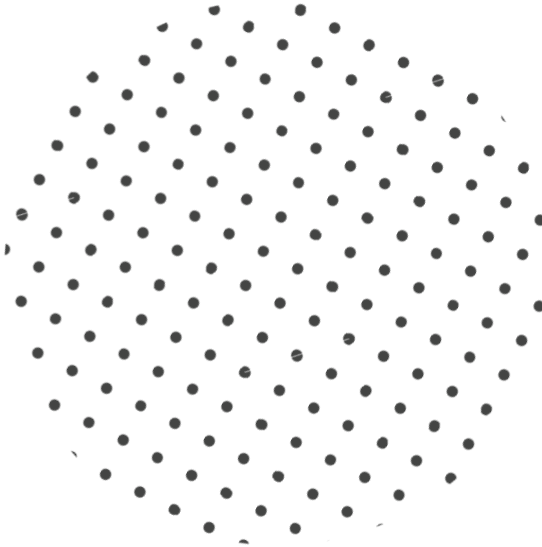
Matplotlib enable us to do charting in customizeable manner. We can change several parts by using it.

1. Image
2. Subplot
3. Color
4. Legend and Label

SweetViz

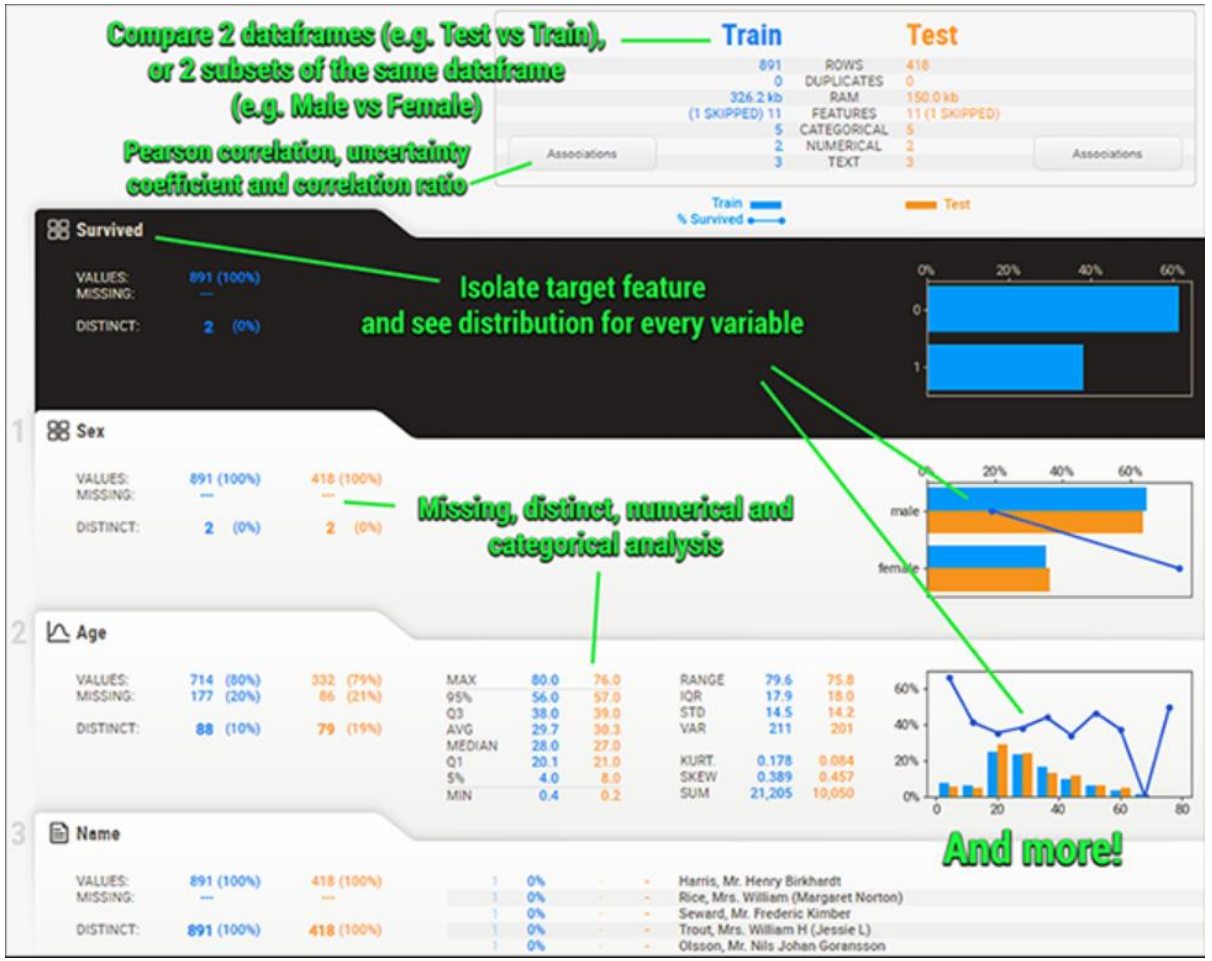
Sweetviz is an open-source Python library that generates beautiful, high-density visualizations to kickstart EDA (Exploratory Data Analysis) with just two lines of code. Output is a fully self-contained HTML application.

The system is built around quickly visualizing target values and comparing datasets. Its goal is to help quick analysis of target characteristics, training vs testing data, and other such data characterization tasks.



SweetViz

SweetViz



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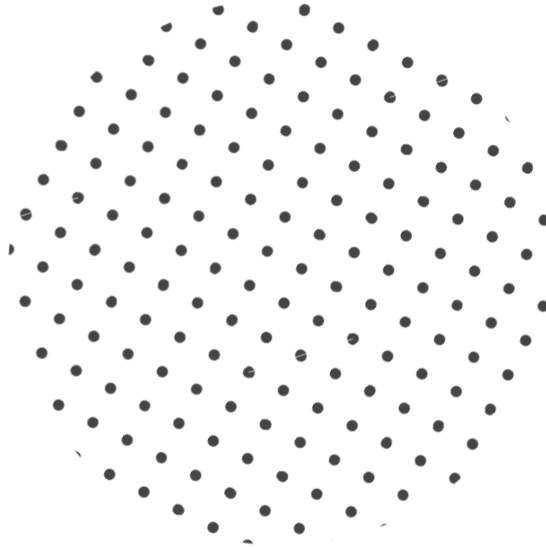
AutoViz

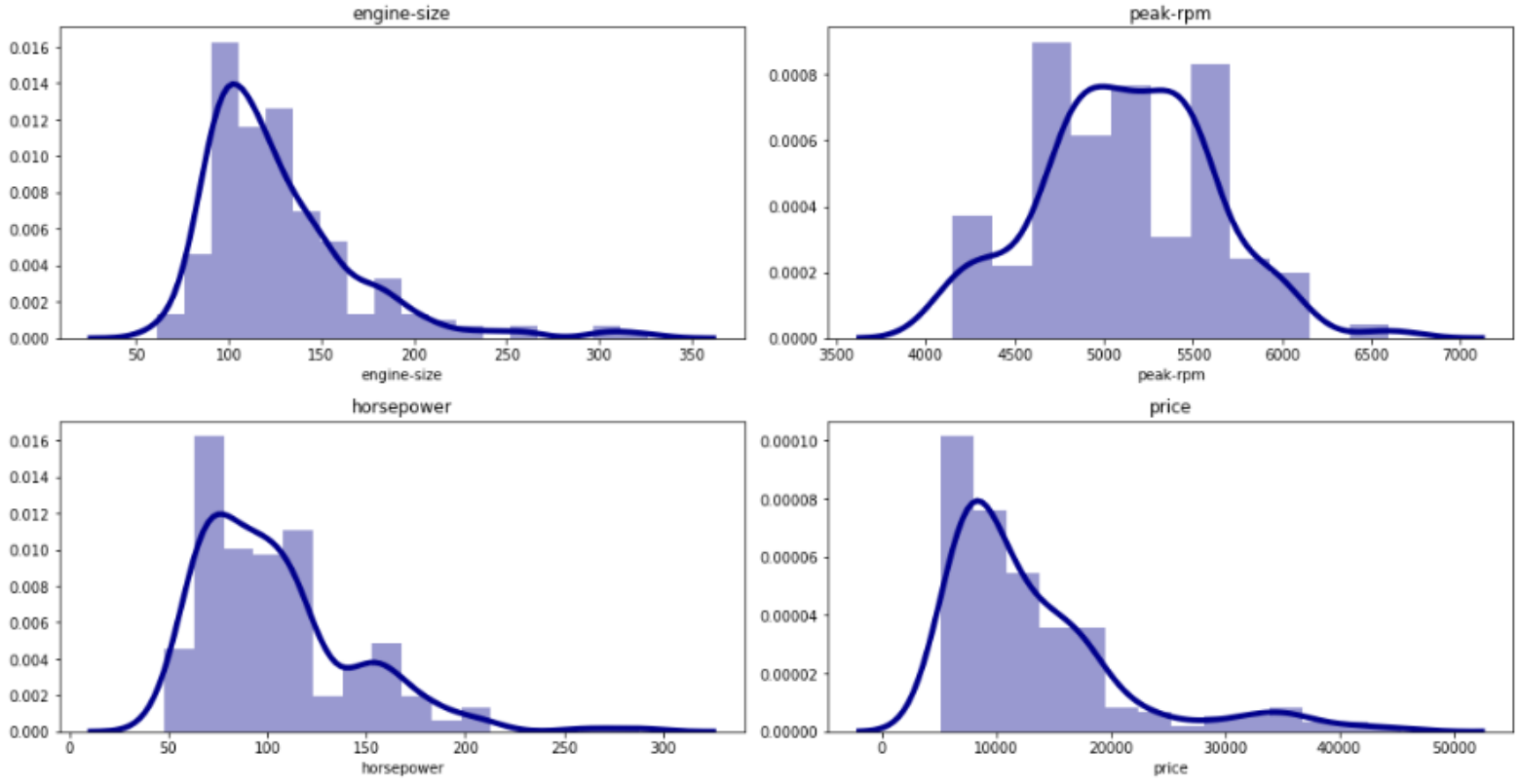


AutoViz is a one-click visualization engine: It creates powerful charts that anyone from a beginner to an expert can use.

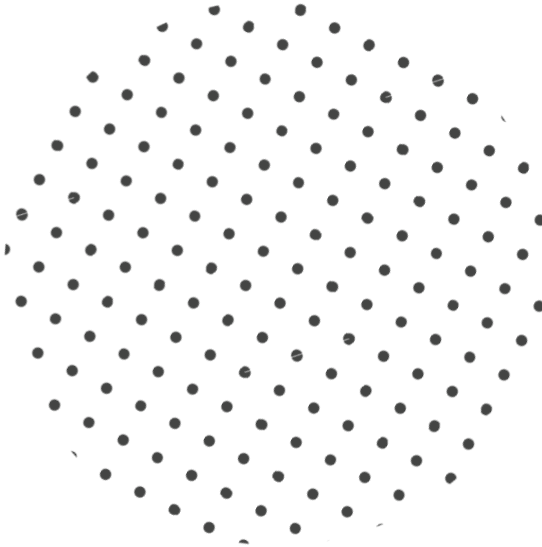
AutoViz knows creating charts from any data manually is hard: It's even harder when you don't know what's in it. AutoViz starts by first analyzing your data to know if it is a Classification, Regression, Unsupervised or Time Series problem. It then chooses the best charts to maximize your insights

AutoViz

AutoViz



Plotly Express

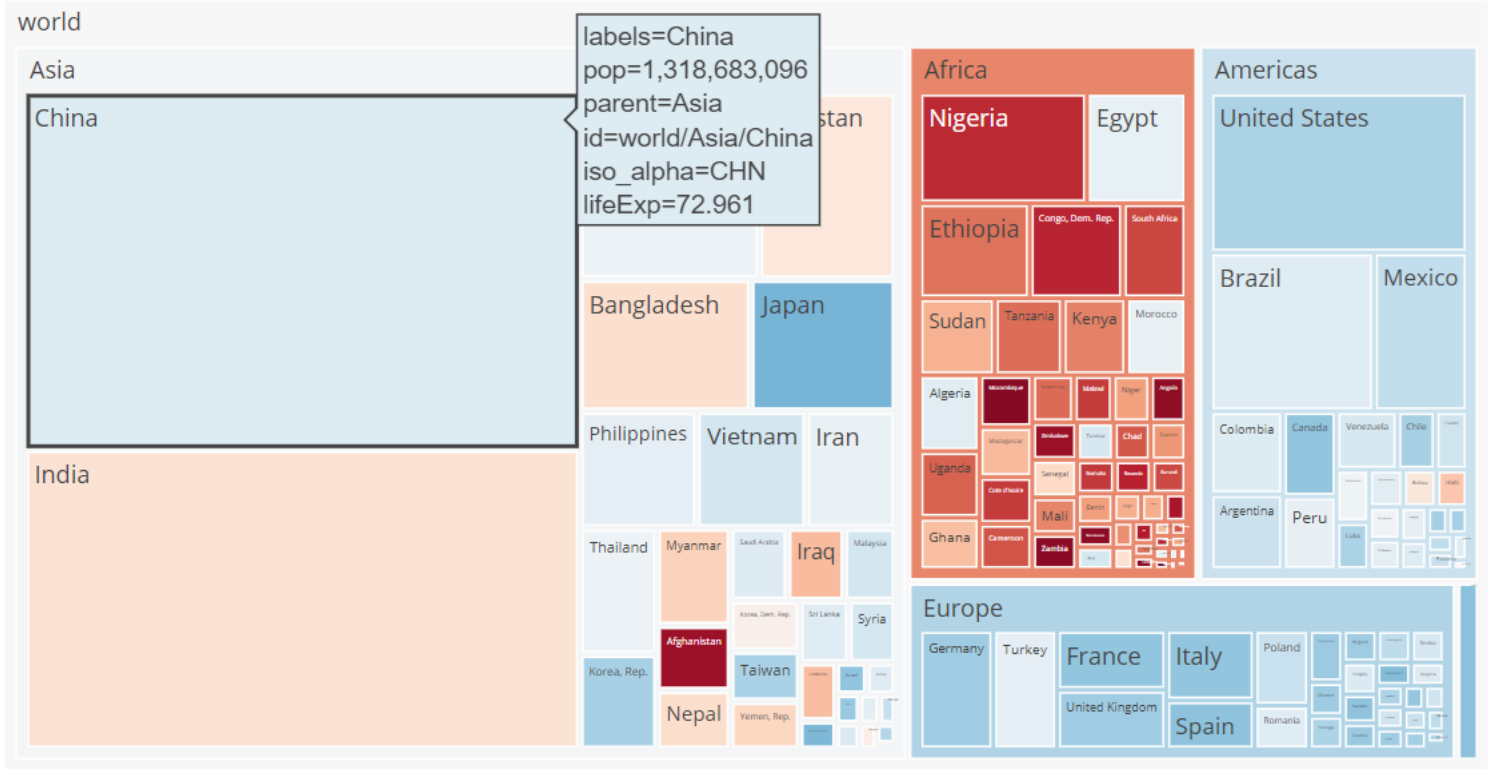


Plotly's Python graphing library makes it easy to create interactive, publication-quality graphs. It can also create similar charts as Matplotlib and seaborn such as line plots, scatter plots, area charts, bar charts, etc.

Plotly also makes it easy to create interactive plots. Interactive plots are not only pretty but also make it easier for viewers to take a closer look at each data point.

plotly

Plotly Express



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Thank YOU