

Module 02

Plotly and Cufflinks

Data Science Developer

Plotly

Plotly is a library that allows you to create interactive plots that you can use in dashboards or websites (you can save them as html files or static images).

Installation

- In order for this all to work, you'll need to install plotly and cufflinks to call plots directly off of a pandas dataframe.
- These libraries are not currently available through conda but are available through pip. Install the libraries at your command line/terminal using:
 - `pip install plotly`
 - `pip install cufflinks`

Imports and Set-up

```
import pandas as pd
import numpy as np
%matplotlib inline
```

```
from plotly import __version__
from plotly.offline import download_plotlyjs, init_notebook_mode, plot, iplot

print(__version__) # requires version >= 1.9.0
```

2.7.0

```
import cufflinks as cf
```

```
# For Notebooks
init_notebook_mode(connected=True)
```

```
# For offline use
cf.go_offline()
```

Data

```
df = pd.DataFrame(np.random.randn(100,4),columns='A B C D'.split())
```

```
df.head()
```

	A	B	C	D
0	-0.558752	1.842477	-0.782203	1.057281
1	-0.820480	0.999040	-0.278275	-0.480478
2	-0.515548	3.102898	-0.788850	-0.307800
3	-0.730204	0.235918	-2.287781	-1.053796
4	0.710055	-0.575127	0.224697	-0.892994

```
df2 = pd.DataFrame({'Category':['A','B','C'],'Values':[32,43,50]})
```

```
df2.head()
```

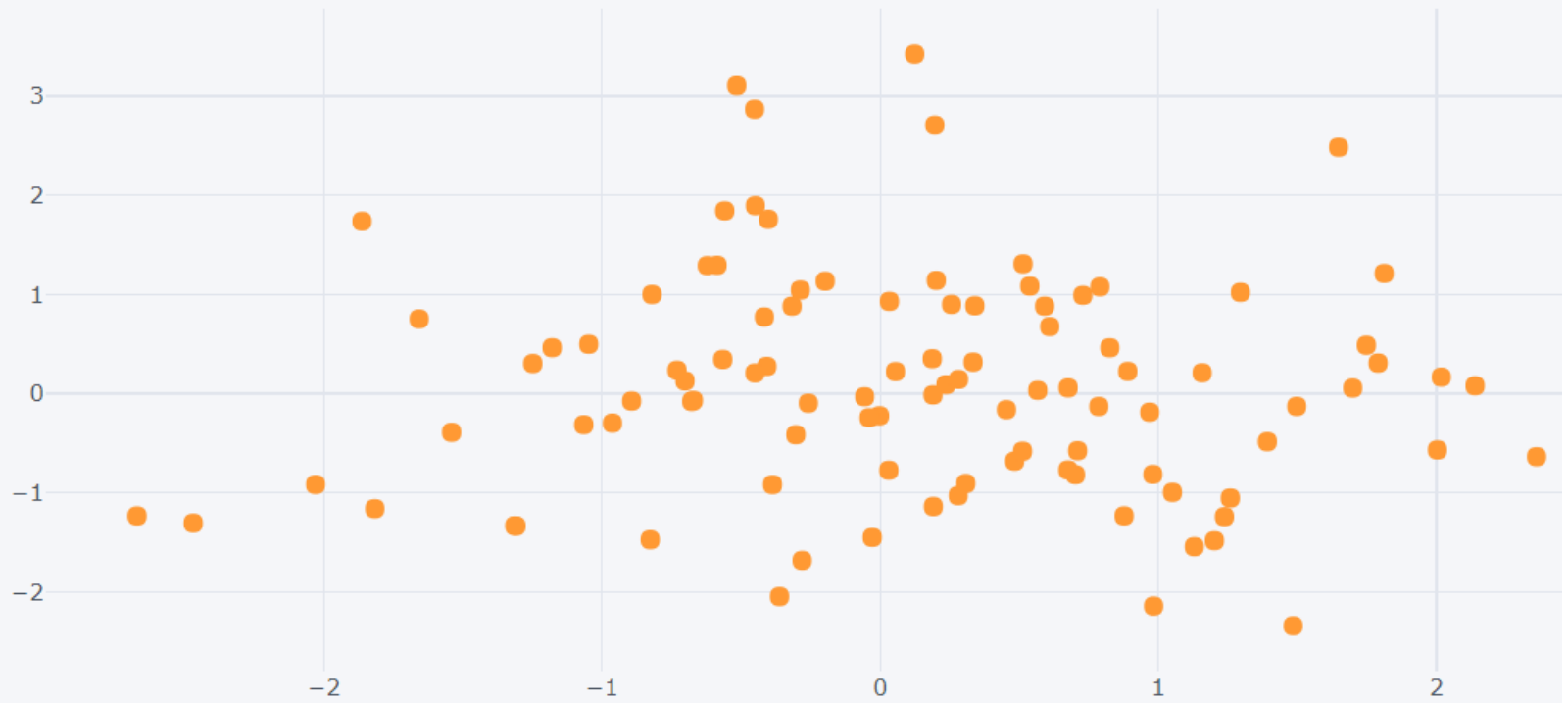
	Category	Values
0	A	32
1	B	43
2	C	50

Using Cufflinks and iplot()

- scatter
- bar
- box
- spread
- ratio
- heatmap
- surface
- histogram
- bubble

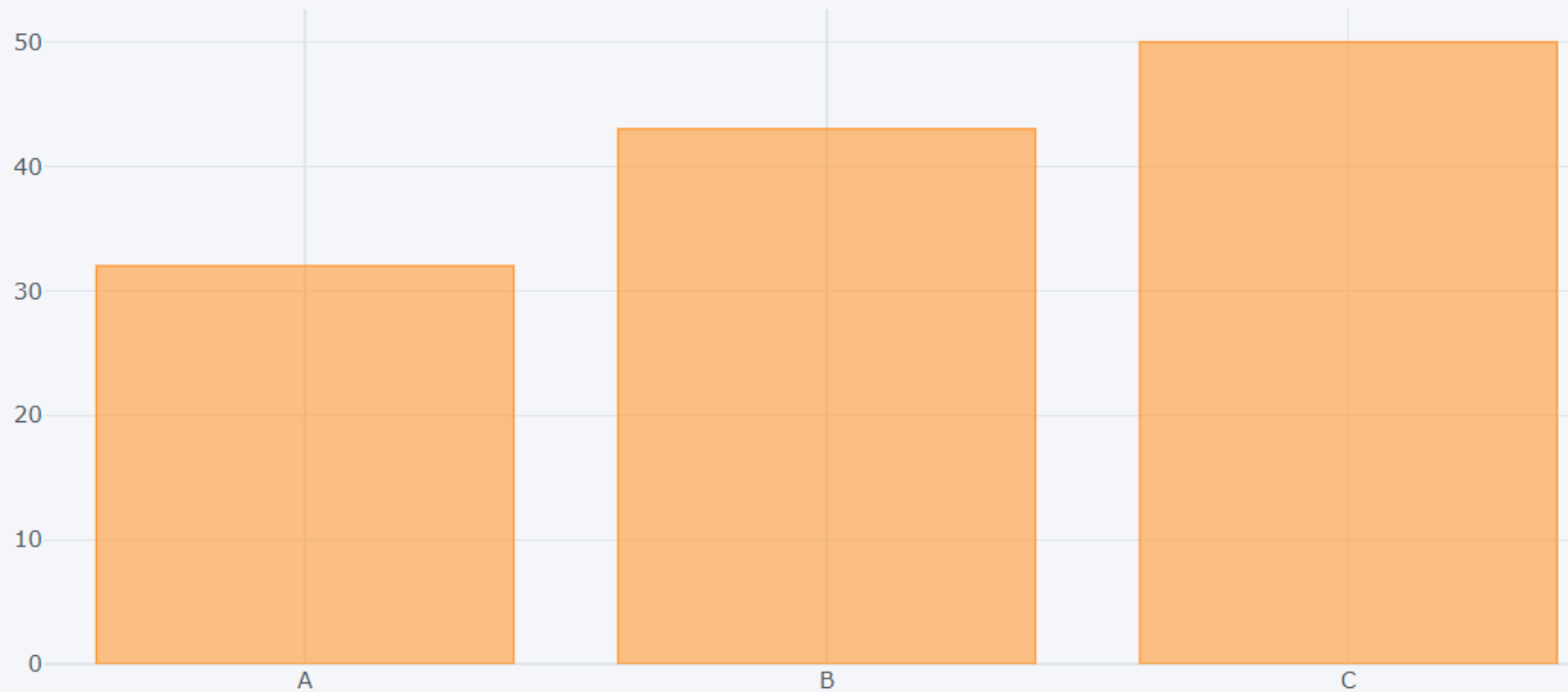
Scatter

```
df.iplot(kind='scatter',x='A',y='B',mode='markers',size=10)
```



Bar Plots

```
df2.ipplot(kind='bar',x='Category',y='Values')
```

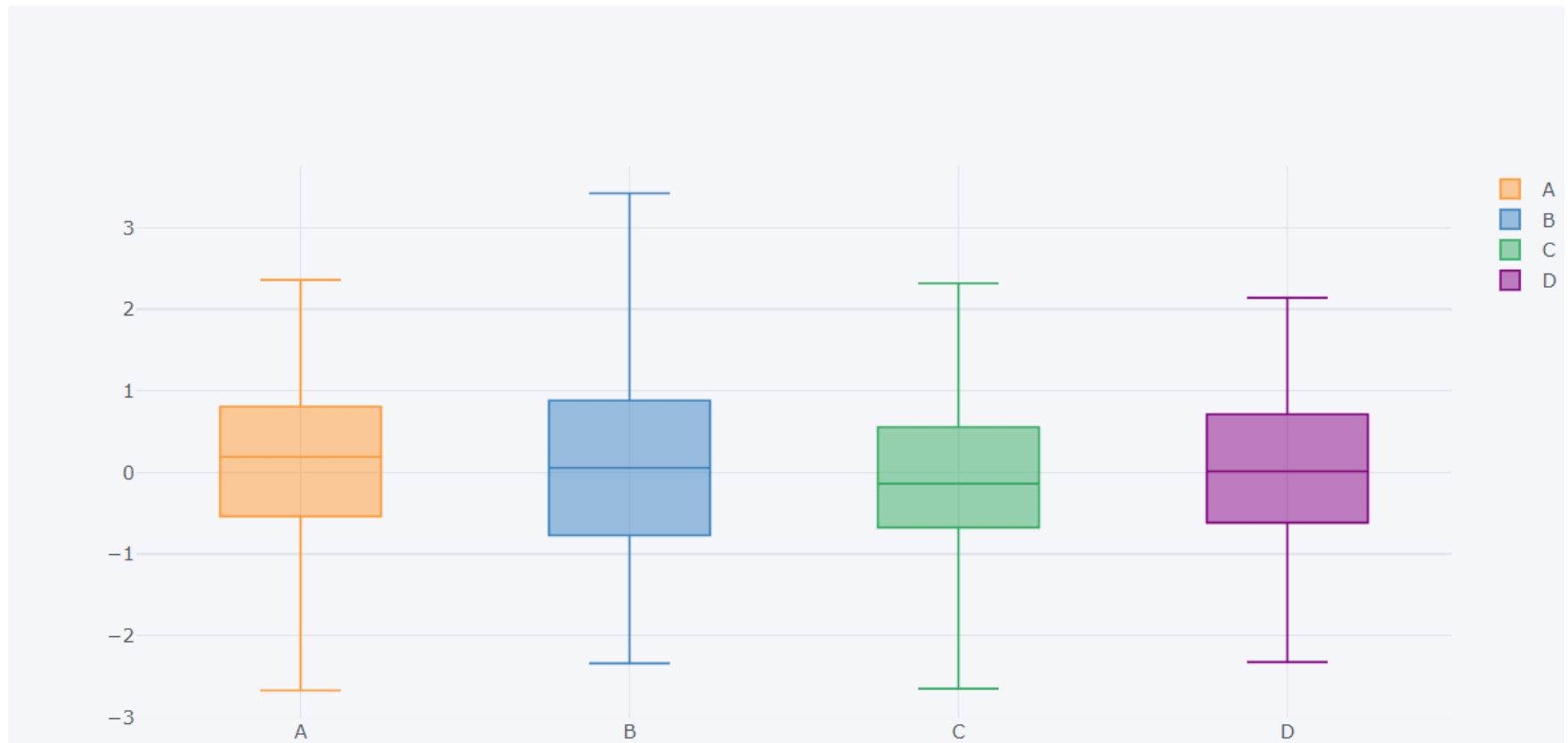



```
df.count().iplot(kind='bar')
```



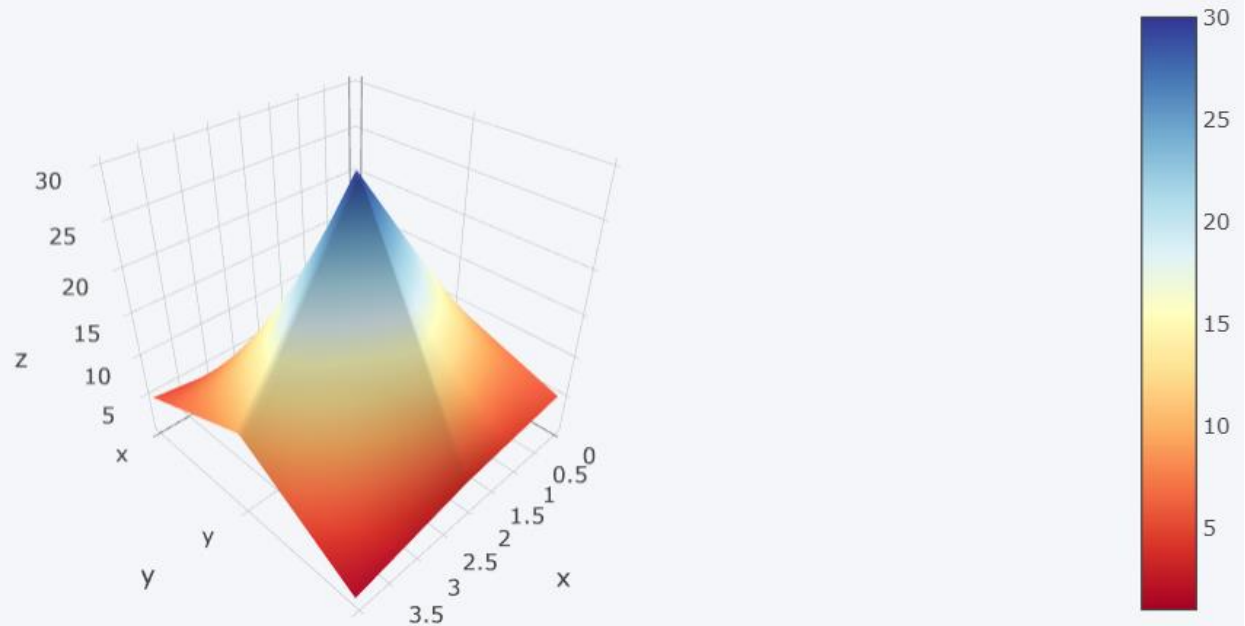
Boxplots

```
df.iplot(kind='box')
```



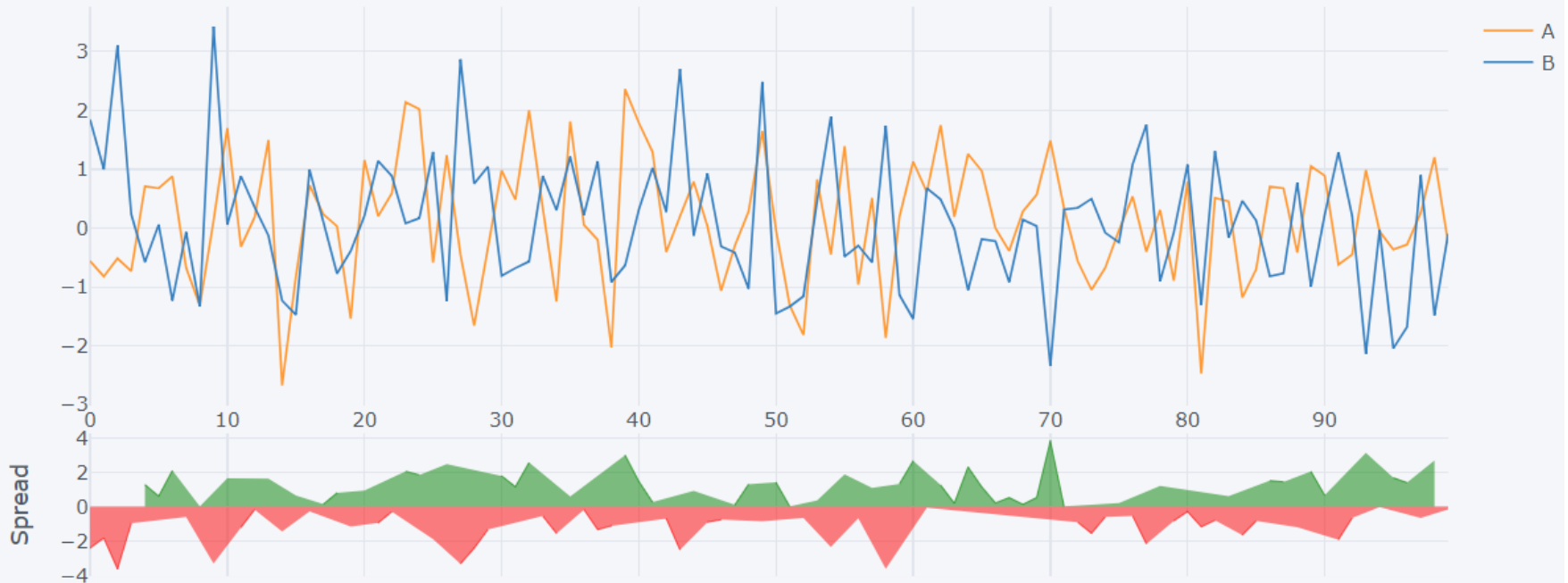
3d Surface

```
df3 = pd.DataFrame({'x':[1,2,3,4,5], 'y':[10,20,30,20,10], 'z':[5,4,3,2,1]})  
df3.iplot(kind='surface', colorscale='rdylbu')
```



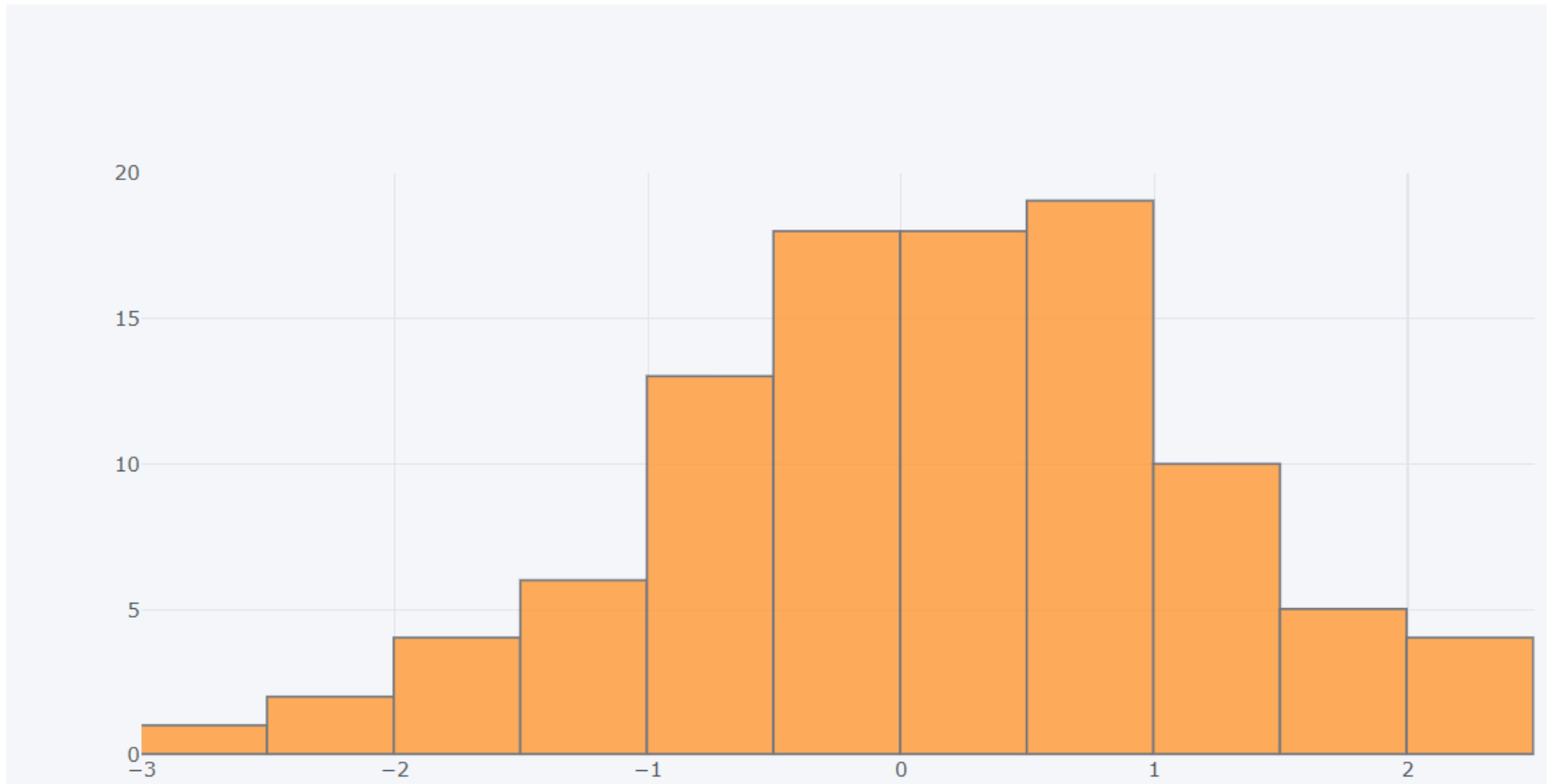
Spread

```
df[['A','B']].iplot(kind='spread')
```



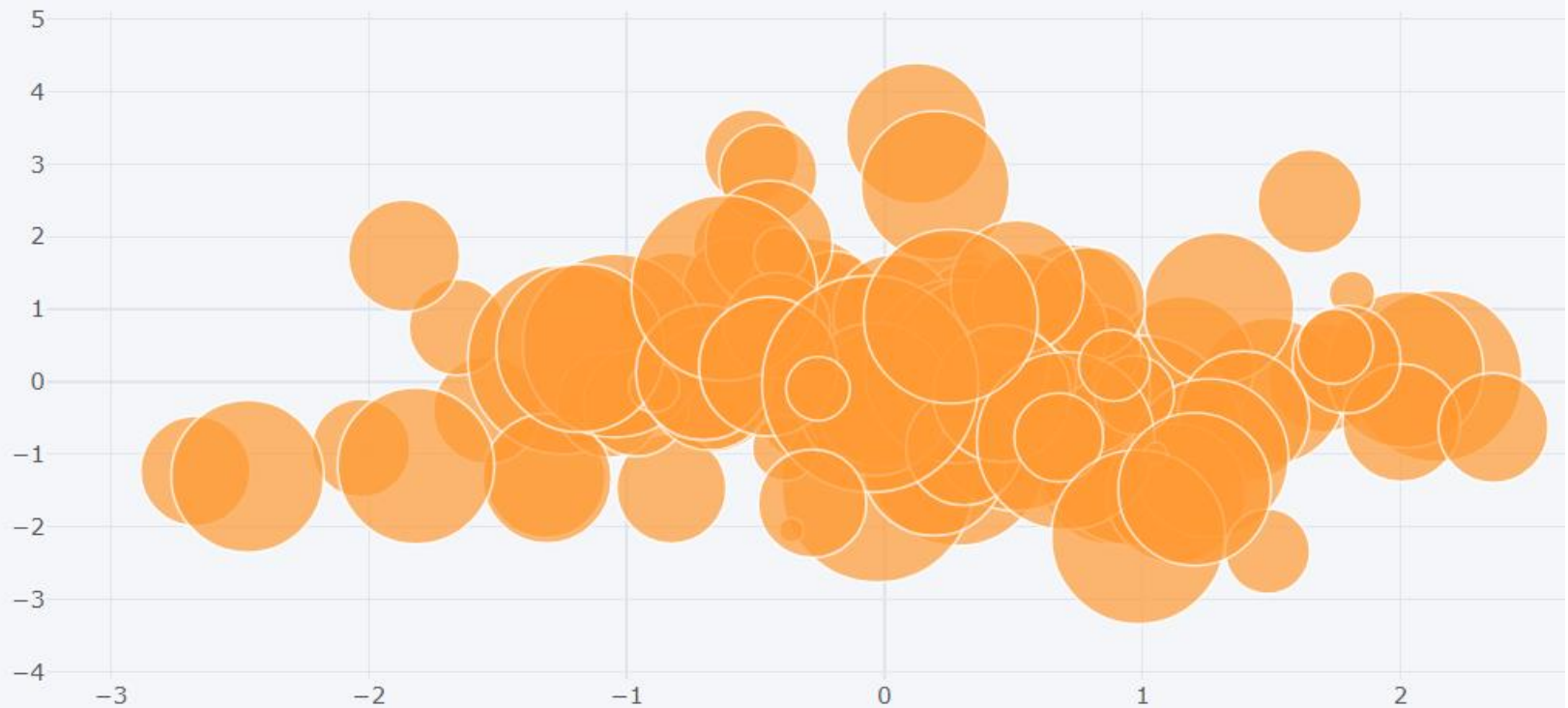
Histogram

```
df['A'].plot(kind='hist',bins=25)
```



Bubble

```
df.iplot(kind='bubble',x='A',y='B',size='C')
```



scatter_matrix()

```
df.scatter_matrix()
```

