

```
In [1]: import pandas as pd
import numpy as np
from mpl_toolkits.mplot3d import axes3d
import matplotlib.pyplot as plt

%matplotlib notebook
```

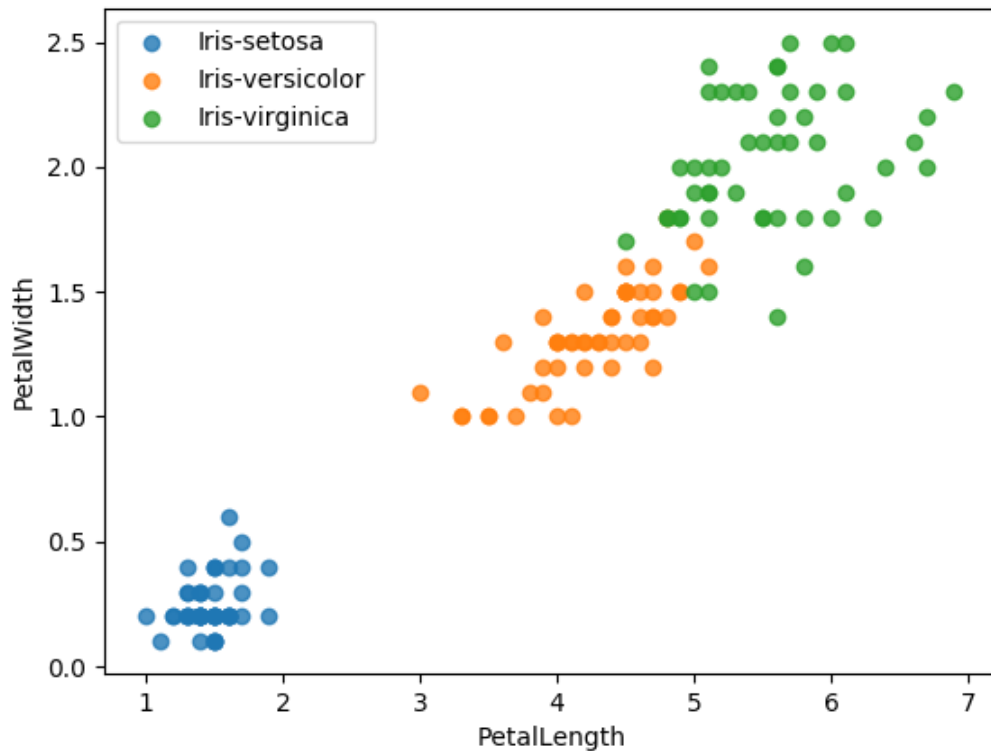
```
In [2]: iris = pd.read_csv('iris.csv')

plt.figure()

for species, irissubset in iris.groupby('Name'):
    plt.scatter(irissubset['PetalLength'], irissubset['PetalWidth'], alpha=0.8, label=species)

plt.xlabel('PetalLength')
plt.ylabel('PetalWidth')
plt.legend();
```

Figure 1



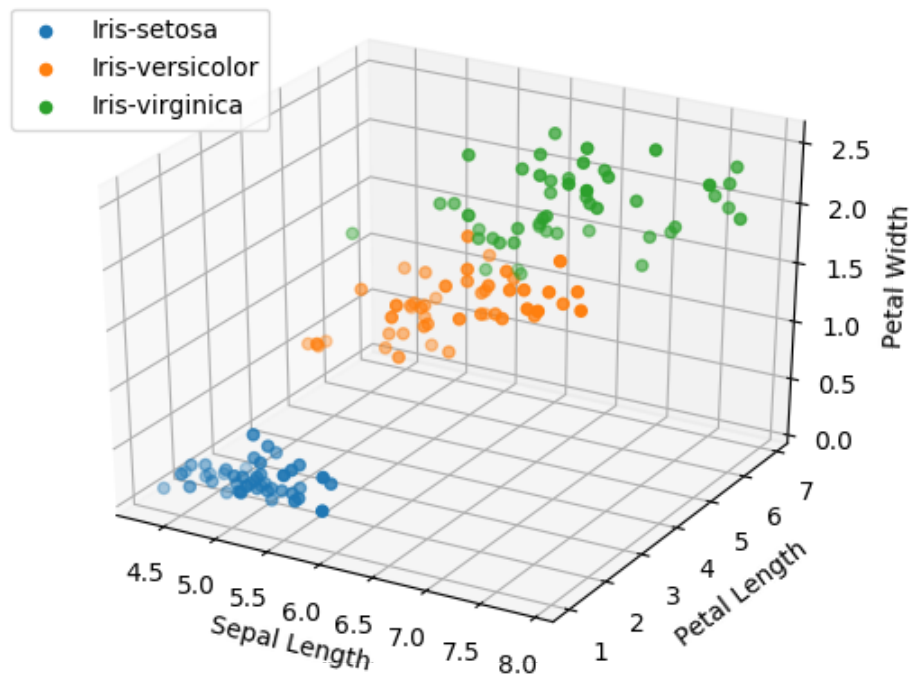
```
In [3]: fig = plt.figure()
ax = fig.add_subplot(111, projection='3d')

for species, irissubset in iris.groupby('Name'):
    ax.scatter(irissubset['SepalLength'], irissubset['PetalLength'], irissubset['PetalWidth'])

ax.set_xlabel('Sepal Length')
ax.set_ylabel('Petal Length')
ax.set_zlabel('Petal Width')
ax.legend(loc=2)

plt.show()
```

Figure 2

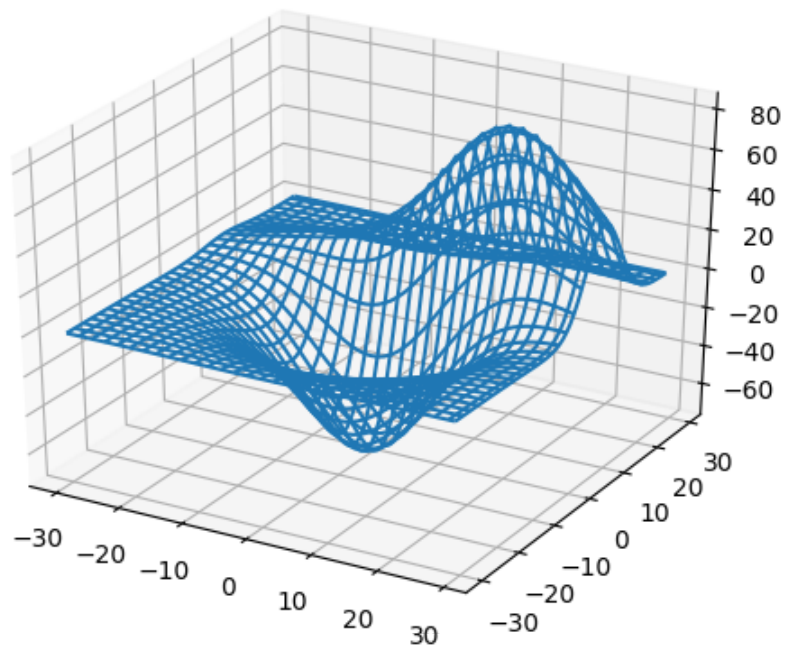


```
In [4]: x, y, z = axes3d.get_test_data(0.1)

fig = plt.figure()
ax = fig.add_subplot(111, projection='3d')
ax.plot_wireframe(x, y, z)

plt.show()
```

Figure 3

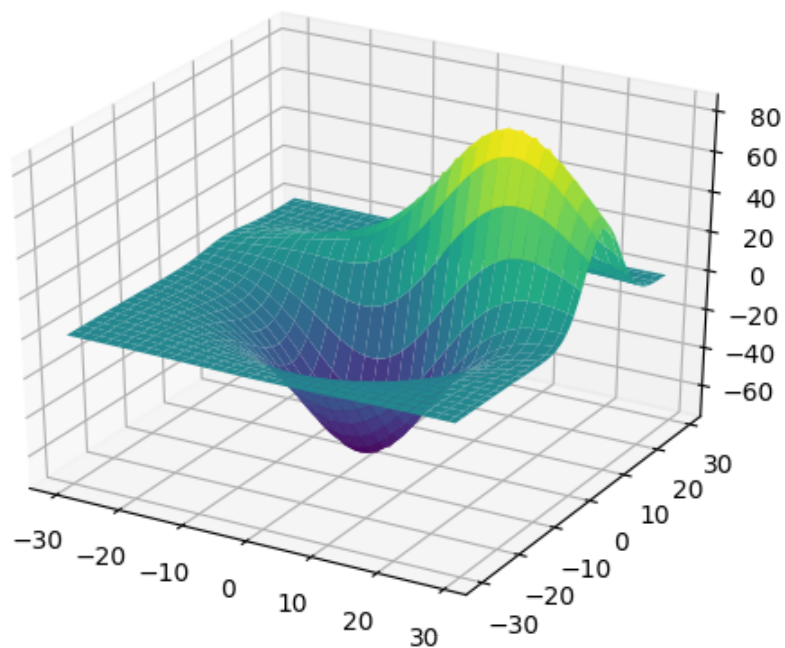


x=55.9233 , y=17.1707 , z=-92.1499

```
In [5]: fig = plt.figure()
ax = fig.add_subplot(111, projection='3d')
ax.plot_surface(x, y, z, cmap = 'viridis')

plt.show()
```

Figure 4



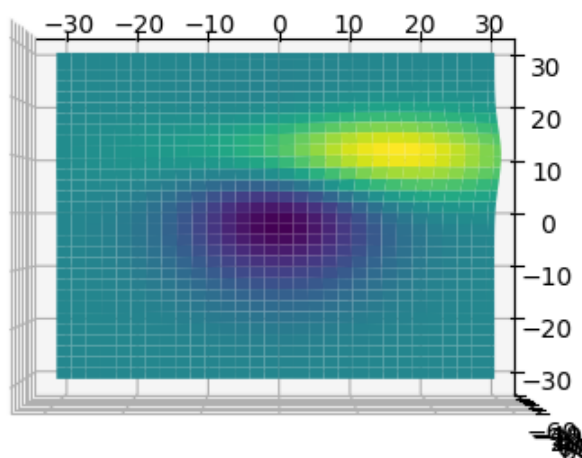
Pan axes with left mouse, zoom with right

```
In [6]: fig = plt.figure()
ax = fig.add_subplot(111, projection='3d')
ax.plot_surface(x, y, z, cmap = 'viridis')

for angle in range(-90, 270):
    ax.view_init(90, angle)
    plt.draw()

plt.show()
```

Figure 5

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```
In [7]: fig = plt.figure()
ax = fig.add_subplot(111)
x, y, z = axes3d.get_test_data(0.1)
ax.contourf(x, y, z, 100)

plt.show()
```

Figure 6

