

DBSCAN Algorithms Implementation

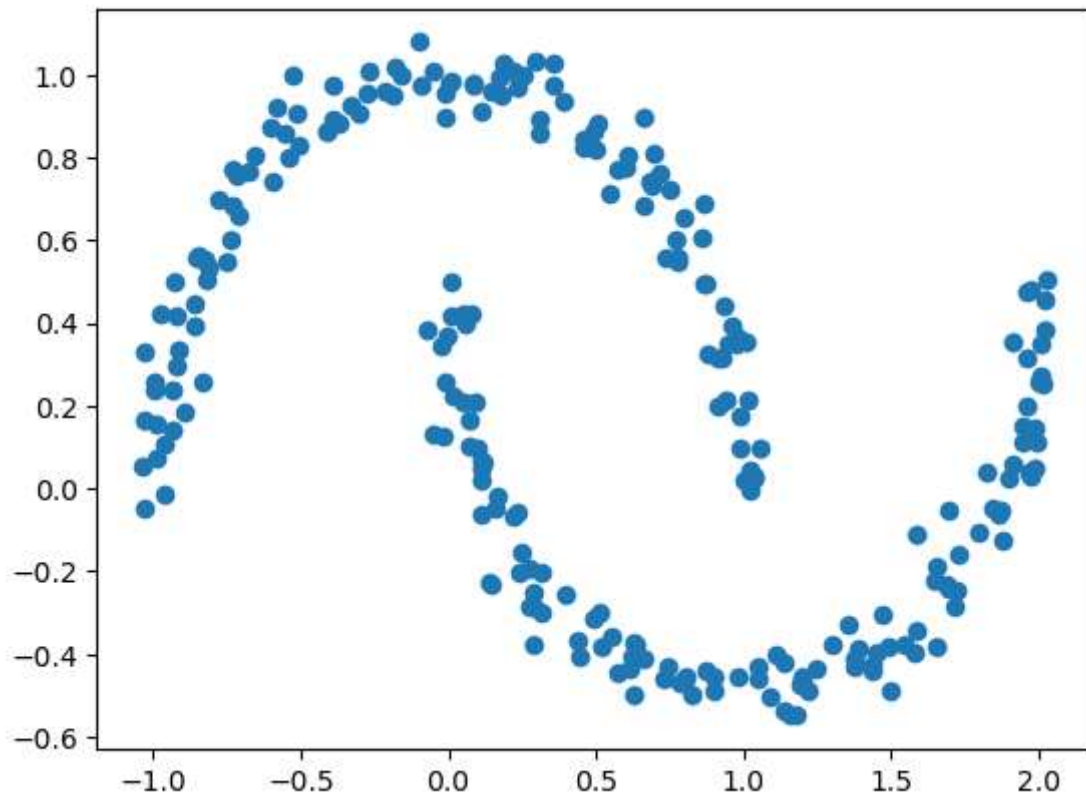
```
In [1]: from sklearn.cluster import DBSCAN
from sklearn.datasets import make_moons
import matplotlib.pyplot as plt
%matplotlib inline
```

```
In [2]: X,y=make_moons(n_samples=250,noise=0.05)
```

```
In [3]: X
[ 0.08110850,  0.37482840],
[ 1.24928041, -0.43618974],
[-0.93207001,  0.23957376],
[ 0.30635953,  0.89050579],
[ 0.04937876,  0.20748608],
[-0.7303085 ,  0.77053038],
[ 1.01301685,  0.21499298],
[ 0.73992855,  0.5599872 ],
[ 0.79646826,  0.6542018 ],
[ 0.87138835,  0.49637913],
[ 1.65581769, -0.19050015],
[ 0.72653703, -0.45836801],
[ 0.66450049,  0.6842094 ],
[-0.86358685,  0.39429445],
[ 1.98401436,  0.14583835],
[-0.99313315,  0.25523461],
[-0.96065596, -0.0139298 ],
[ 0.96209023,  0.39083429],
[ 1.21674538, -0.48676831],
[ 0.45612002,  0.84187175],
```

```
In [4]: plt.scatter(X[:,0],X[:,1])
```

```
Out[4]: <matplotlib.collections.PathCollection at 0x21803fff2e0>
```



```
In [5]: ##feature scaling(Standard Scaling)  
from sklearn.preprocessing import StandardScaler  
scaler=StandardScaler()
```

```
In [6]: X_scaled=scaler.fit_transform(X)
```

```
In [12]: ## DBSCAN Algorithm  
from sklearn.cluster import DBSCAN
```

```
In [13]: dbscan=DBSCAN(eps=0.5)
```

```
In [14]: dbscan.fit(X_scaled)
```

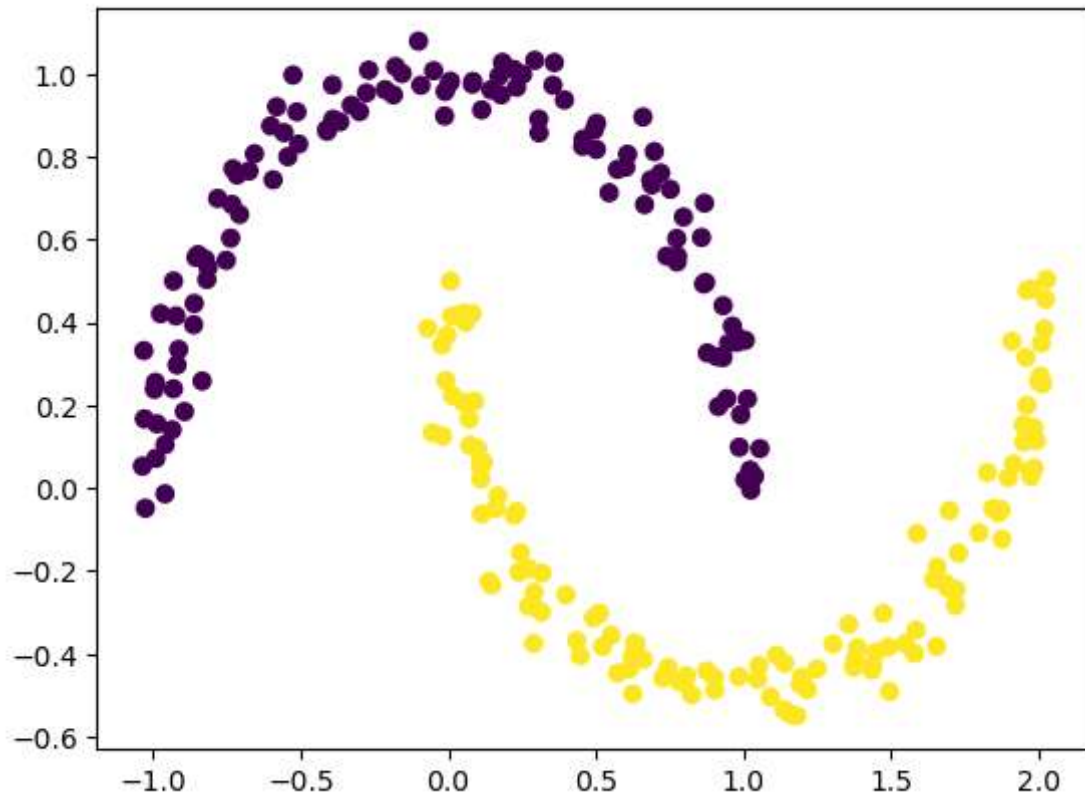
```
Out[14]: DBSCAN()
```

```
In [15]: dbscan.labels_
```

```
Out[15]: array([0, 1, 0, 0, 1, 0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 1, 0, 0, 1, 0, 0,
                0, 1, 0, 1, 1, 0, 1, 1, 1, 1, 1, 1, 1, 0, 1, 0, 1, 0, 1, 1, 0, 1,
                0, 1, 1, 0, 1, 0, 0, 1, 0, 1, 1, 0, 1, 1, 1, 1, 0, 1, 1, 0, 1, 1,
                1, 0, 1, 1, 0, 1, 0, 1, 0, 0, 1, 1, 1, 0, 0, 0, 0, 1, 0, 0, 0, 1,
                0, 1, 0, 1, 0, 1, 1, 0, 0, 1, 1, 1, 0, 1, 1, 1, 0, 0, 0, 0, 0, 1,
                0, 1, 1, 1, 1, 1, 0, 1, 0, 1, 1, 1, 0, 0, 0, 1, 1, 1, 0, 1, 1, 0,
                1, 0, 1, 0, 0, 1, 1, 1, 1, 1, 1, 0, 0, 1, 1, 0, 0, 0, 1, 1, 0, 0,
                1, 0, 1, 0, 0, 1, 1, 1, 1, 0, 1, 0, 0, 1, 0, 1, 1, 1, 1, 0, 0,
                0, 0, 0, 0, 0, 1, 0, 1, 1, 0, 1, 1, 0, 1, 0, 0, 1, 1, 0, 1, 1, 1,
                0, 1, 1, 0, 0, 0, 1, 1, 1, 0, 0, 1, 1, 0, 0, 0, 1, 0, 0, 0, 0, 1,
                0, 0, 1, 1, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0,
                1, 0, 0, 0, 1, 0, 1, 1], dtype=int64)
```

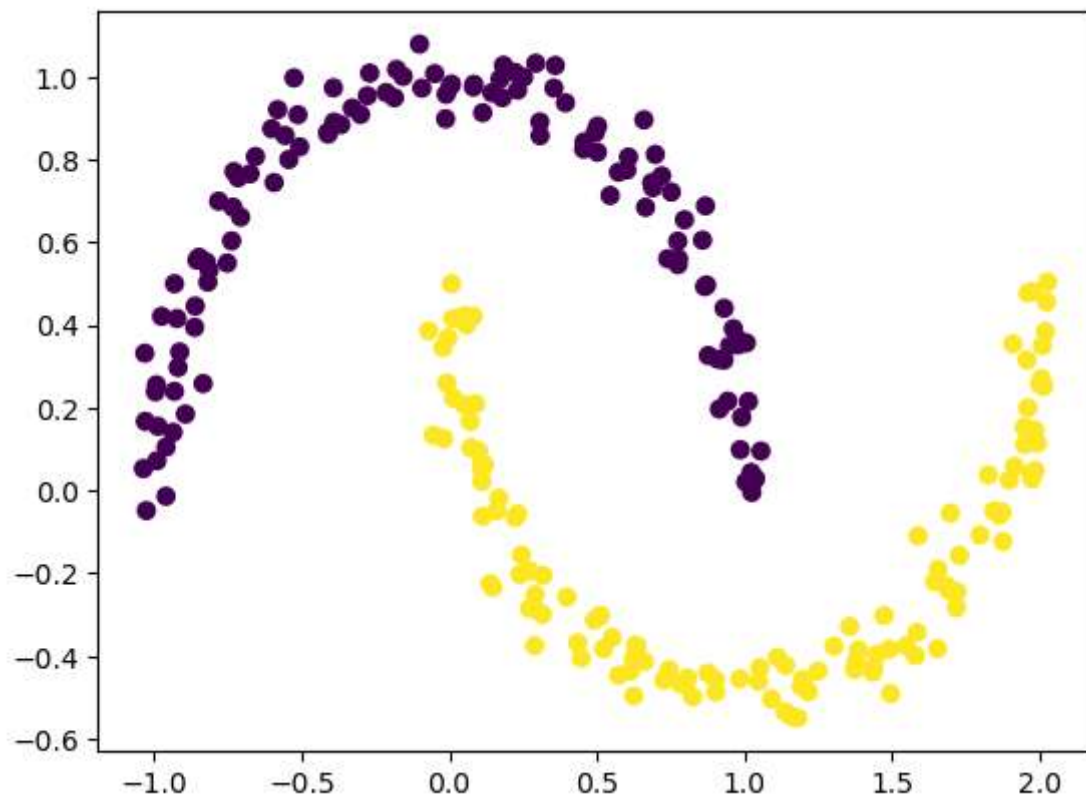
```
In [16]: plt.scatter(X[:,0],X[:,1],c=dbscan.labels_)
```

```
Out[16]: <matplotlib.collections.PathCollection at 0x2180492ee20>
```



```
In [17]: plt.scatter(X[:,0],X[:,1],c=y)
```

```
Out[17]: <matplotlib.collections.PathCollection at 0x2180514b850>
```



```
In [ ]:
```