week4

June 24, 2024

[29]:
```
import numpy as np
from sklearn import preprocessing
sample_data = np.array ([[2.1, -1.9, 5.5],
                         [-1.5, 2.4, 3.5],
                         [0.5, -7.9, 5.6],
                         [5.9, 2.3, -5.8]])
sample_data
```

[29]:
```
array([[ 2.1, -1.9,  5.5],
       [-1.5,  2.4,  3.5],
       [ 0.5, -7.9,  5.6],
       [ 5.9,  2.3, -5.8]])
```

[31]:
```
sample_data.shape
```

[31]:
```
(4, 3)
```

[33]:
```
sample_data
```

[33]:
```
array([[ 2.1, -1.9,  5.5],
       [-1.5,  2.4,  3.5],
       [ 0.5, -7.9,  5.6],
       [ 5.9,  2.3, -5.8]])
```

[35]:
```
preprocessor = preprocessing. Binarizer (threshold=0.5)
binarised_data = preprocessor. transform (sample_data)
binarised_data
```

[35]:
```
array([[1., 0., 1.],
       [0., 1., 1.],
       [0., 0., 1.],
       [1., 1., 0.]])
```

[38]:
```
sample_data
```

[38]:
```
array([[ 2.1, -1.9,  5.5],
       [-1.5,  2.4,  3.5],
       [ 0.5, -7.9,  5.6],
```

```
       [ 5.9,  2.3, -5.8]])
```

[40]:
```
preprocessor = preprocessing. MinMaxScaler (feature_range=(0, 1))
preprocessor. fit(sample_data)
scaled_data = preprocessor.transform (sample_data)
scaled_data
```

[40]:
```
array([[0.48648649, 0.58252427, 0.99122807],
       [0.        , 1.        , 0.81578947],
       [0.27027027, 0.        , 1.        ],
       [1.        , 0.99029126, 0.        ]])
```

[42]:
```
scaled_data = preprocessor. fit_transform (sample_data)
scaled_data
```

[42]:
```
array([[0.48648649, 0.58252427, 0.99122807],
       [0.        , 1.        , 0.81578947],
       [0.27027027, 0.        , 1.        ],
       [1.        , 0.99029126, 0.        ]])
```

[44]:
```
sample_data
```

[44]:
```
array([[ 2.1, -1.9,  5.5],
       [-1.5,  2.4,  3.5],
       [ 0.5, -7.9,  5.6],
       [ 5.9,  2.3, -5.8]])
```

[50]:
```
l1_normalised_data = preprocessing. normalize (sample_data, norm='l1')
l1_normalised_data
```

[50]:
```
array([[ 0.22105263, -0.2       ,  0.57894737],
       [-0.2027027 ,  0.32432432,  0.47297297],
       [ 0.03571429, -0.56428571,  0.4       ],
       [ 0.42142857,  0.16428571, -0.41428571]])
```