

4.0-Unit Vectors

January 2, 2024

```
[1]: import seaborn as sns
```

```
[2]: df=sns.load_dataset('iris')
df.head()
```

```
[2]:   sepal_length  sepal_width  petal_length  petal_width  species
0           5.1           3.5           1.4           0.2   setosa
1           4.9           3.0           1.4           0.2   setosa
2           4.7           3.2           1.3           0.2   setosa
3           4.6           3.1           1.5           0.2   setosa
4           5.0           3.6           1.4           0.2   setosa
```

```
[3]: from sklearn.preprocessing import normalize
```

```
[5]: df.columns
```

```
[5]: Index(['sepal_length', 'sepal_width', 'petal_length', 'petal_width',
          'species'],
          dtype='object')
```

```
[6]: normalize(df[['sepal_length', 'sepal_width', 'petal_length', 'petal_width']])
```

```
[6]: array([[0.80377277, 0.55160877, 0.22064351, 0.0315205 ],
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```

```
[7]: import pandas as pd
pd.DataFrame(normalize(df[['sepal_length', 'sepal_width', 'petal_length',
↪ 'petal_width']])),
          columns=['sepal_length', 'sepal_width', 'petal_length',
↪ 'petal_width'])
```

```
[7]:
```

	sepal_length	sepal_width	petal_length	petal_width
0	0.803773	0.551609	0.220644	0.031521
1	0.828133	0.507020	0.236609	0.033801
2	0.805333	0.548312	0.222752	0.034269
3	0.800030	0.539151	0.260879	0.034784
4	0.790965	0.569495	0.221470	0.031639
..
145	0.721557	0.323085	0.560015	0.247699
146	0.729654	0.289545	0.579090	0.220054
147	0.716539	0.330710	0.573231	0.220474
148	0.674671	0.369981	0.587616	0.250281
149	0.690259	0.350979	0.596665	0.210588

[150 rows x 4 columns]

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[ ]:
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[ ]:
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[ ]:
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