

minisom and sklearn-som

November 23, 2022

```
[1]: !pip install minisom
```

```
Requirement already satisfied: minisom in  
/home/rao.ans/.conda/envs/pytorch_env/lib/python3.9/site-packages (2.3.0)
```

```
[2]: !pip install sklearn_som
```

```
Requirement already satisfied: sklearn_som in  
/home/rao.ans/.conda/envs/pytorch_env/lib/python3.9/site-packages (1.1.0)  
Requirement already satisfied: numpy in  
/home/rao.ans/.conda/envs/pytorch_env/lib/python3.9/site-packages (from  
sklearn_som) (1.21.5)
```

```
[3]: from minisom import MiniSom  
from sklearn_som.som import SOM  
from skimage import io  
  
import numpy as np  
import matplotlib.pyplot as plt
```

```
[4]: np.random.seed(42)
```

```
[5]: X = np.random.randint(low=0, high=255, size=(1000, 3))
```

```
[6]: X = X / 255
```

0.0.1 MiniSom

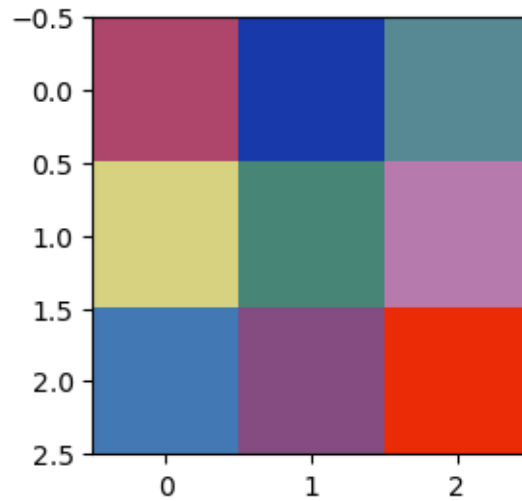
<https://github.com/JustGlowing/minisom>

```
[7]: som = MiniSom(3, 3, 3, sigma=0.3, learning_rate=0.5) # initialization of 3x3 SOM  
som.train(X, 100) # trains the SOM with 100 iterations
```

```
[8]: W = som.get_weights() * 255
```

```
[9]: # final lattice  
plt.figure(figsize=(3, 3))  
io.imshow(np.uint8(W))
```

[9]: <matplotlib.image.AxesImage at 0x2ae197351c70>



0.0.2 sklearn-som ¶

<https://github.com/rileypsmith/sklearn-som>

```
[10]: som = SOM(3, 3, 3)
      som.fit(X)
```

```
[11]: W = som.weights
```

```
[12]: W = W * 255
```

```
[13]: # final lattice
      plt.figure(figsize=(3, 3))
      io.imshow(np.uint8(W.reshape(3, 3, 3)))
```

[13]: <matplotlib.image.AxesImage at 0x2ae197450cd0>

