

AAKR

Auto Associative Kernel Regression is being considered for the time series algorithm. I has already been researched and proven to do well with characterizing and gnerating prdictions based off of a number of factors. The implementation of this algorithm is shown below for future reference.

```
In [1]: %%capture
import pandas as pd
!pip install aakr
```

```
In [2]: from aakr import AAKR
from sklearn.datasets import load_linnerud
```

```
In [3]: # Load dataset (20 samples, 3 features)
X = load_linnerud().data

# Use first 15 as examples of normal conditions
X_nc = X[:15]

# New observations to get normal condition for
X_obs = X[15:]
```

```
In [4]: # Create AAKR and fit first 15 observations
aakr = AAKR()
aakr.fit(X_nc)
```

```
Out[4]: AAKR()
```

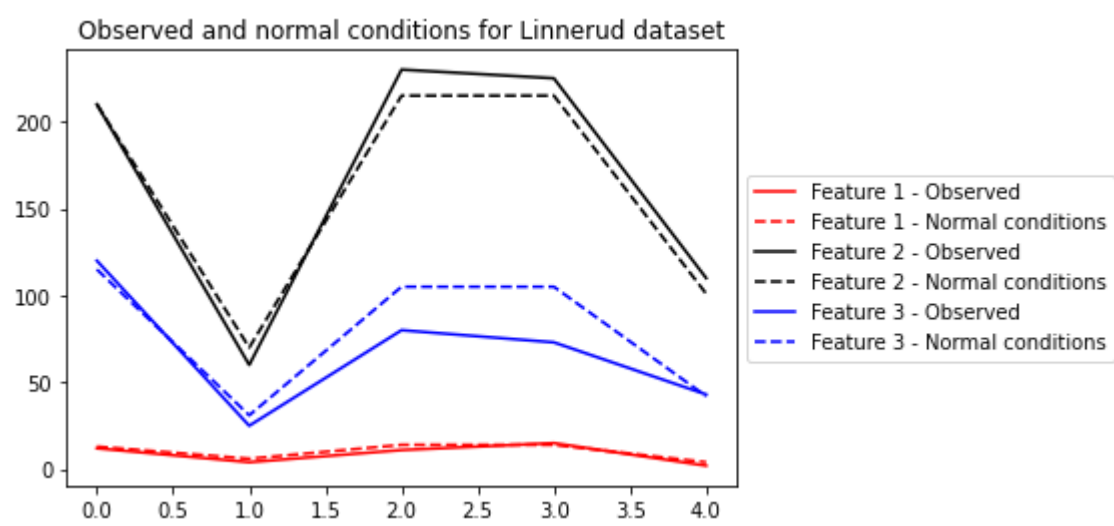
```
In [5]: # Normal conditions for the last 5 observations
X_obs_nc = aakr.transform(X_obs)
```

```
In [6]: # Plot results
import matplotlib.pyplot as plt

colors = 'rkb'
for i in range(X.shape[1]):
    plt.plot(X_obs[:, i], color=colors[i], linestyle='-',
             label=f'Feature {i + 1} - Observed')
    plt.plot(X_obs_nc[:, i], color=colors[i], linestyle='--',
             label=f'Feature {i + 1} - Normal conditions')

plt.title('Observed and normal conditions for Linnerud dataset')
plt.legend(loc='center left', bbox_to_anchor=(1, 0.5))
```

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Out[6]: <matplotlib.legend.Legend at 0x26524034a00>
```



```
In [ ]:
```