

# Hands-on: Stock/Sensor Data Clustering

Time Series Clustering Implementation Workflow

## 1 Dataset Selection

Yahoo Finance or UCI sensor data



## 2 Preprocessing

Normalization & resampling

`z-score`

`interpolate`



## 3 DTW Distance

Implement distance function

`Python/NumPy`



## 4 Hierarchical Clustering

Apply DTW linkage

`scipy.cluster`



## 5 Compare K-Shape

Alternative algorithm comparison

`tslearn`



## 6 Visualization

Plot clusters & centroids

`matplotlib`



## 7 Interpret Results

Identify similar behaviors



### Data Sources



Yahoo Finance (stocks) • UCI ML Repository  
(sensors)



### Key Question

Which stocks/sensors behave similarly?