



Clustering Financial Time Series

Jeff Tsen



Normalization

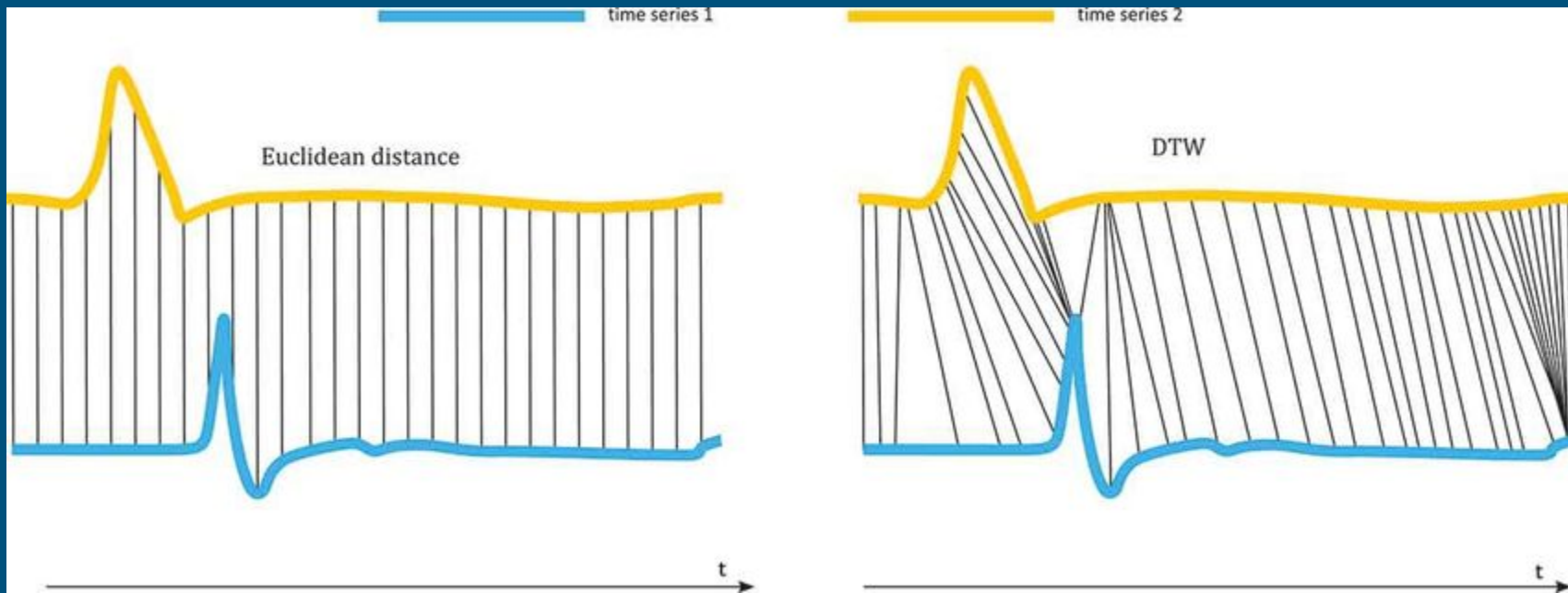
$$z = \frac{x - \mu}{\sigma}$$

μ = Mean

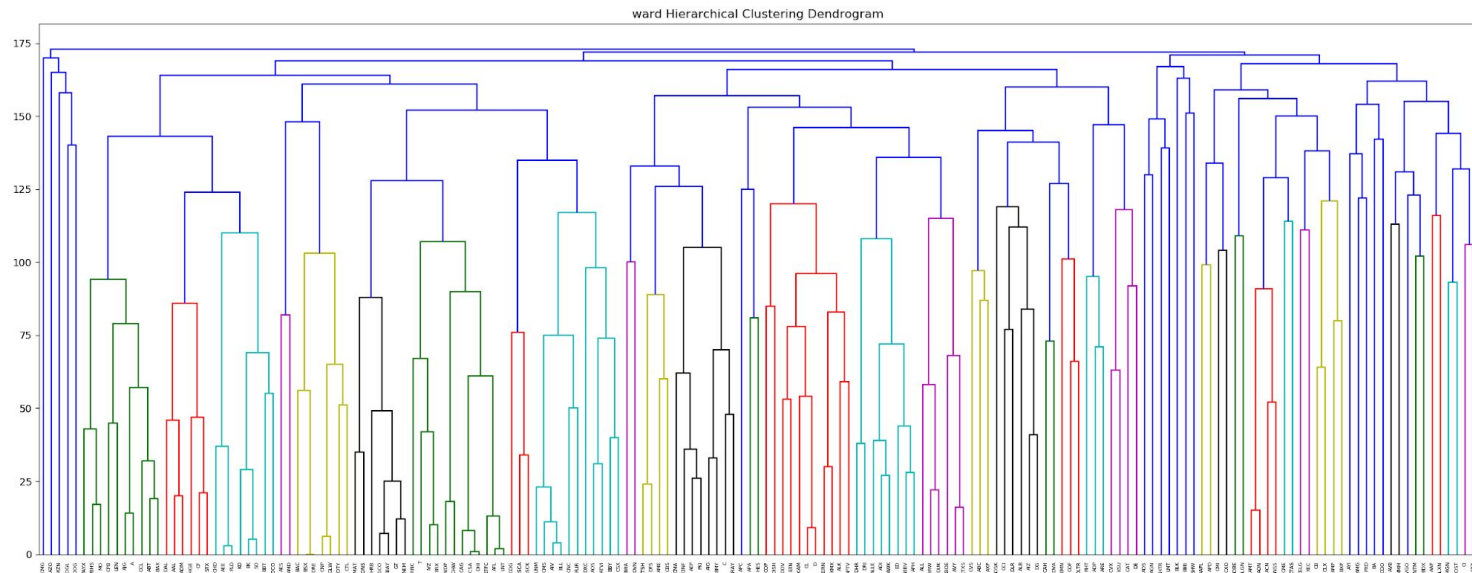
σ = Standard Deviation

$$z = \frac{x - \min(x)}{\max(x) - \min(x)}$$

Distance

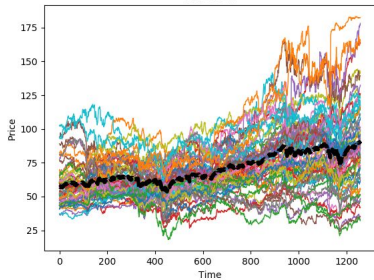


Results

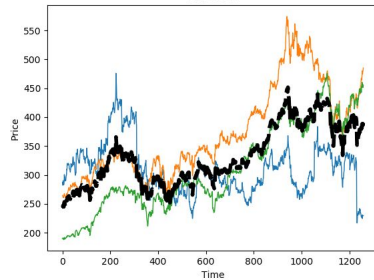


Mean Return

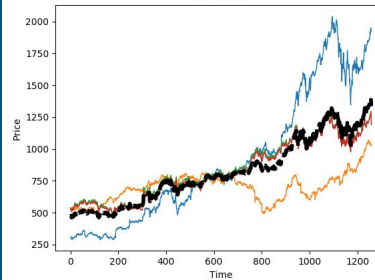
Cluster 1



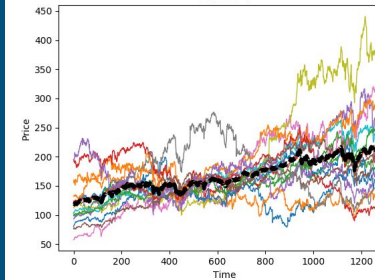
Cluster 2



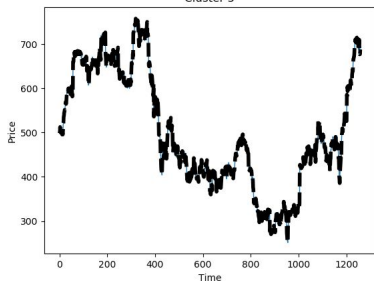
Cluster 3



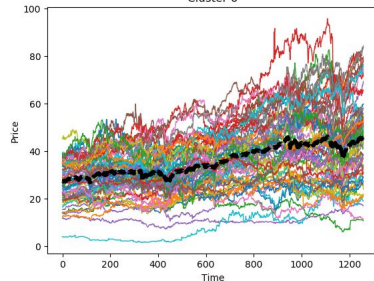
Cluster 4



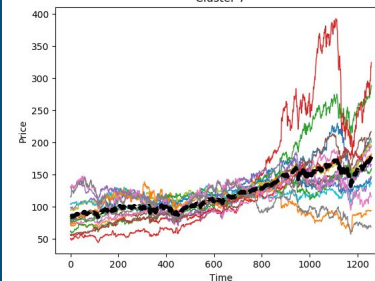
Cluster 5



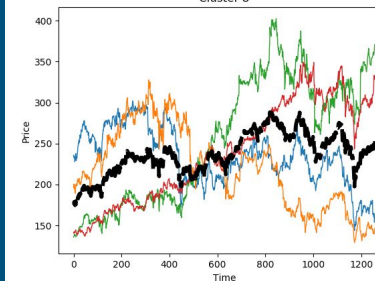
Cluster 6



Cluster 7



Cluster 8





Thank You!