Kiel University
Christian-Albrechts-Universität zu Kiel

Exercise Sheet 7
Intelligent Systems
Decemember 09, 2019

Segmentation

Exercise 1 - Top down segmentation

Given two time series in Figure 1, apply a top down segmentation with a maximum approximation error of 1 by using the error function:

$$\sum_{i=1}^{n} |x_{t_i} \tilde{x}(t_i)|,$$

where $S = \{t_i\}_{i=1}^{n}$ is a segment of length n, x_t are the measurements at time t, and For the approximation function $\tilde{x}$ use:

A. A constant function.

B. A polynom of degree 1.

Exercise 2 - Bottom up segmentation

Analogously as in Excercise 1, apply a bottom up segmentation with the same parametrisation and use as approximation function:

A. a constant function.

B. a polynom of degree 1.

Signature Task - Segmentation

A. Discuss about the optimal segmentation technique for the Signature Task.

B. Apply the chosen segmentation technique.

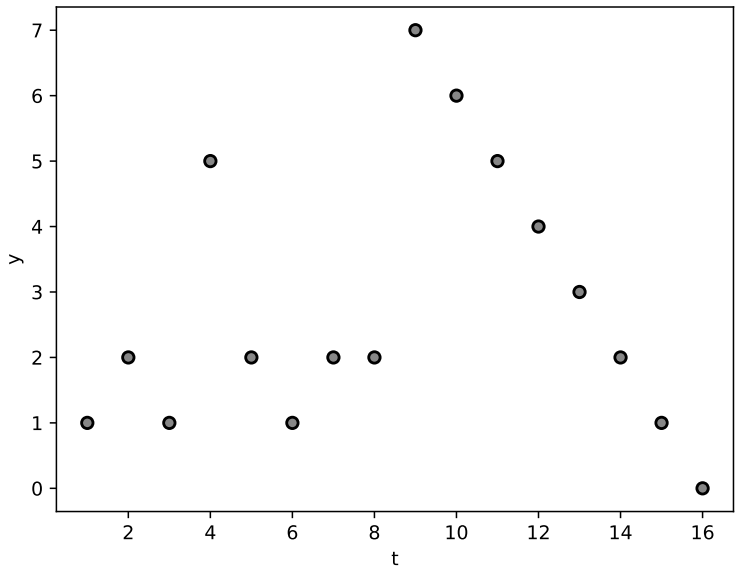

Figure 1: Some timeseries