Overview and objectives: This notebook demonstrates Harbinger utility distance functions for summarizing residual magnitudes (L1 and L2) and plotting results for quick inspection. L1 emphasizes robustness to outliers; L2 emphasizes larger deviations. These aggregations feed subsequent thresholding/outlier rules in the detection pipeline.

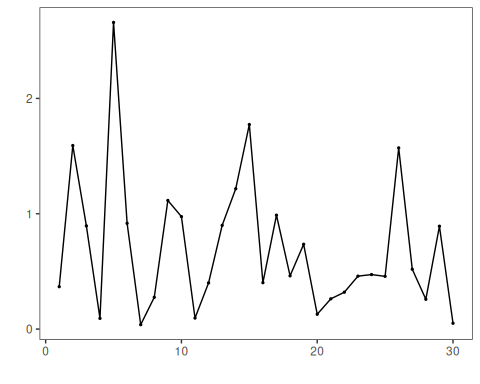
# Install Harbinger (if needed)  
#install.packages("harbinger")

# Load required packages  
library(daltoolbox)  
library(harbinger)

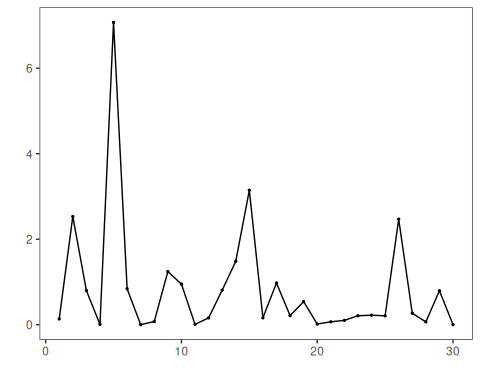
# Instantiate utilities  
hutils <- harutils()

# Generate synthetic residuals  
values <- rnorm(30, mean = 0, sd = 1)

# L1 aggregation of residual magnitude  
v1 <- hutils$har\_distance\_l1(values)  
har\_plot(harbinger(), v1)



# L2 aggregation of residual magnitude  
v2 <- hutils$har\_distance\_l2(values)  
har\_plot(harbinger(), v2)



References

* Tukey, J. W. (1977). Exploratory Data Analysis. Addison‑Wesley. (IQR/boxplot heuristics underpin some thresholding rules)
* Shewhart, W. A. (1931). Economic Control of Quality of Manufactured Product. D. Van Nostrand. (three‑sigma rule)