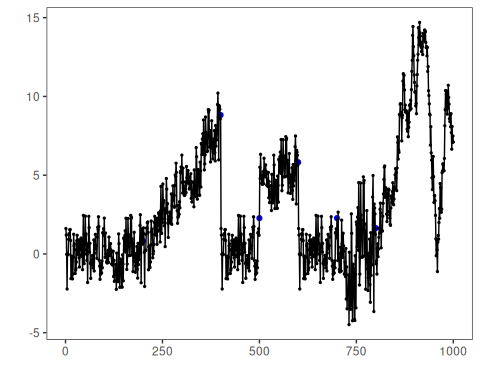
Overview and objectives: This notebook provides quick end‑to‑end demonstrations of the default harbinger() pipeline across diverse datasets (nonstationarity, global temperature monthly/yearly, multivariate, and weather). For each dataset we: fit the default pipeline, run detection, and plot detections over the series. The goal is to illustrate Harbinger’s unified interface for anomalies, change points, and motifs, and how it builds on DAL Toolbox models.

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

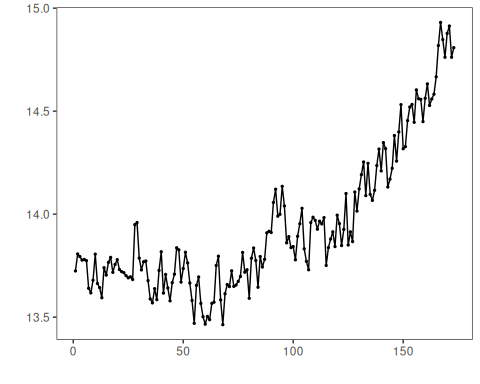
# Load required packages  
library(daltoolbox)  
library(harbinger)

# Load example datasets bundled with harbinger  
data(examples\_harbinger)  
model <- harbinger()

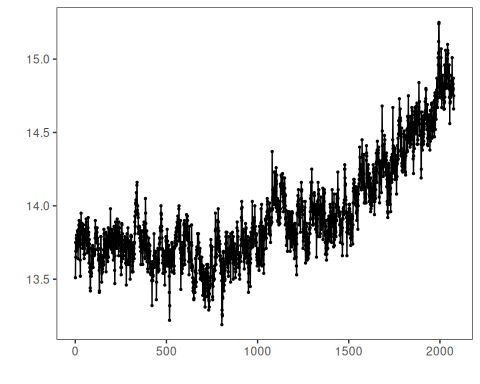
# Example: nonstationarity time series  
dataset <- examples\_harbinger$nonstationarity  
model <- fit(model, dataset$serie)  
detection <- detect(model, dataset$serie)  
har\_plot(model, dataset$serie, detection, dataset$event)



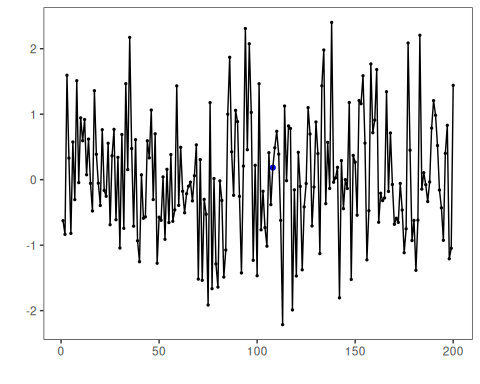
# Example: global temperature (yearly)  
dataset <- examples\_harbinger$global\_temperature\_yearly  
model <- fit(model, dataset$serie)  
detection <- detect(model, dataset$serie)  
har\_plot(model, dataset$serie, detection, dataset$event)



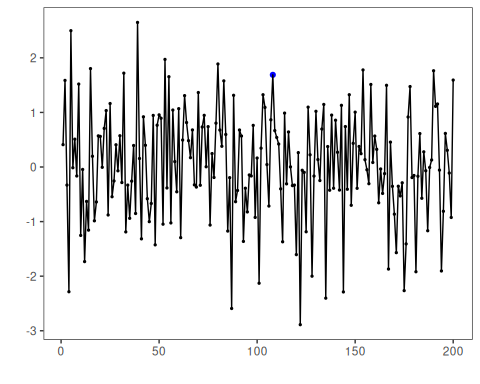
# Example: global temperature (monthly)  
dataset <- examples\_harbinger$global\_temperature\_monthly  
model <- fit(model, dataset$serie)  
detection <- detect(model, dataset$serie)  
har\_plot(model, dataset$serie, detection, dataset$event)



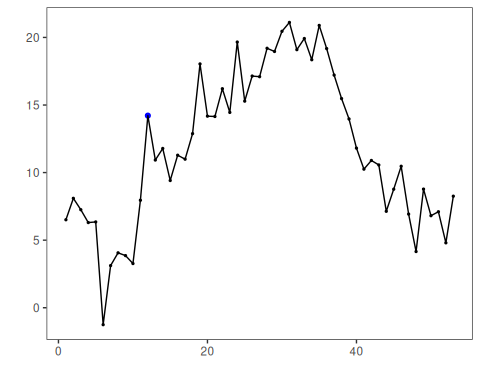
# Example: multidimensional time series  
dataset <- examples\_harbinger$multidimensional  
model <- fit(model, dataset$serie)  
detection <- detect(model, dataset$serie)  
har\_plot(model, dataset$serie, detection, dataset$event)



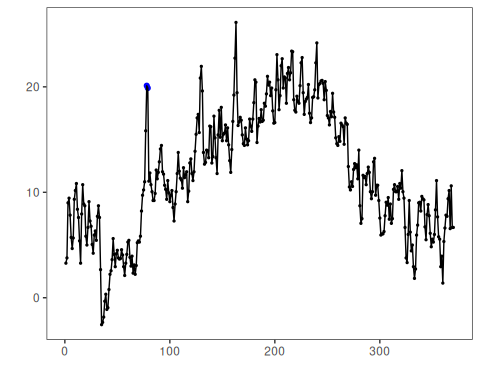
model <- fit(model, dataset$x)  
detection <- detect(model, dataset$x)  
har\_plot(model, dataset$x, detection, dataset$event)



# Example: Seattle weekly temperature time series  
dataset <- examples\_harbinger$seattle\_week  
model <- fit(model, dataset$serie)  
detection <- detect(model, dataset$serie)  
har\_plot(model, dataset$serie, detection, dataset$event)



# Example: Seattle daily temperature time series  
dataset <- examples\_harbinger$seattle\_daily  
model <- fit(model, dataset$serie)  
detection <- detect(model, dataset$serie)  
har\_plot(model, dataset$serie, detection, dataset$event)



References - Ogasawara, E., Salles, R., Porto, F., Pacitti, E. Event Detection in Time Series. Springer, 2025. <doi:10.1007/978-3-031-75941-3> - DAL Toolbox documentation: <https://cefet-rj-dal.github.io/daltoolbox/>