Online Segmentation of Dynamic Data Stream Using Dynamic Classification Unit Classifier and ExpanDrogram Visualization

The incremental dynamic classifier DCU supports real-time segmentation processes in big and dynamic data environments. The model suggests using small data buffers, as an alternative to the reexamination of all past data for the updating of existing segments. To support the calibration of diverse domains, the model accommodates different forms of processing by using a wide range of parameters. The decision-making process strictly depends on the user's preferences or implementation requirements. In dynamic and big data environments the visualization of a segmentation process over time often does not enable the user to simultaneously track entire pieces. The key points are sometimes incomparable and the user is limited to a static visual presentation of a certain point. Comprehensive visualization, named ExpanDrogram, can potentially improve the interpretation of sophisticated segmentation processes and allow the user to participate in decision-making.
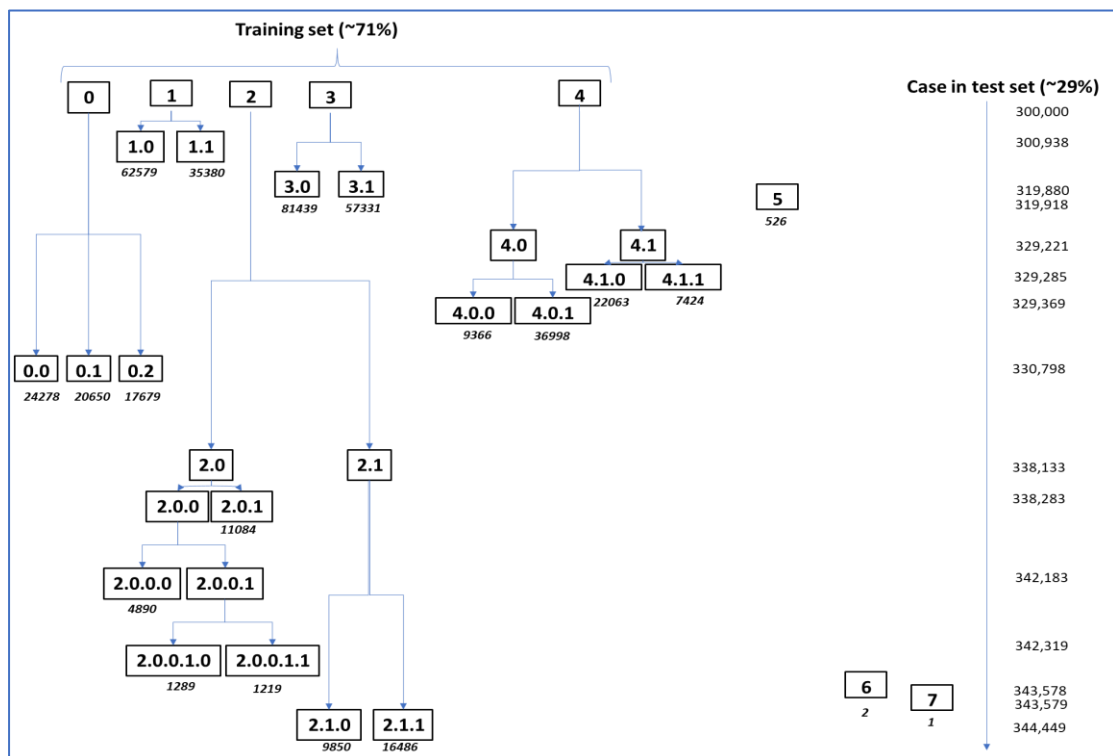

Figure 1: Example of ExpanDrogram Visualization for Dynamic Classification method using database with 420,550 instances (Jena Climate time series database).