

# STAG: Statistical Time Series Analysis Guide – Project Completion

DSI Infrastructures & Labs

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## Project summary

The primary objective of the STAG project is the design and development of a modular interactive framework that supports health researchers in constructing, refining, and documenting preprocessing pipelines for time series data in a transparent and reproducible way. The system enables users to iteratively explore and process complex, multimodal time series data while maintaining a clear record of all transformations, parameter choices, and user decisions. A central outcome is the automatic generation of structured analysis protocols, which improve consistency, traceability, and comparability across studies and research groups. The framework combines visual interfaces with a pipeline-based architecture, allowing users to inspect intermediate results, compare alternative processing strategies, and adapt workflows to specific research questions. STAG further demonstrates that integrating data handling, modeling steps, and user reasoning within a single system reduces manual effort and supports systematic hypothesis generation. The project establishes a reusable infrastructure that facilitates collaboration between domain experts and data scientists and enables the transfer of validated preprocessing strategies across applications such as clinical and longevity research and health monitoring.



Figure 1 STAG used by a UZH expert for time series missing value imputation for multivariate sensor data

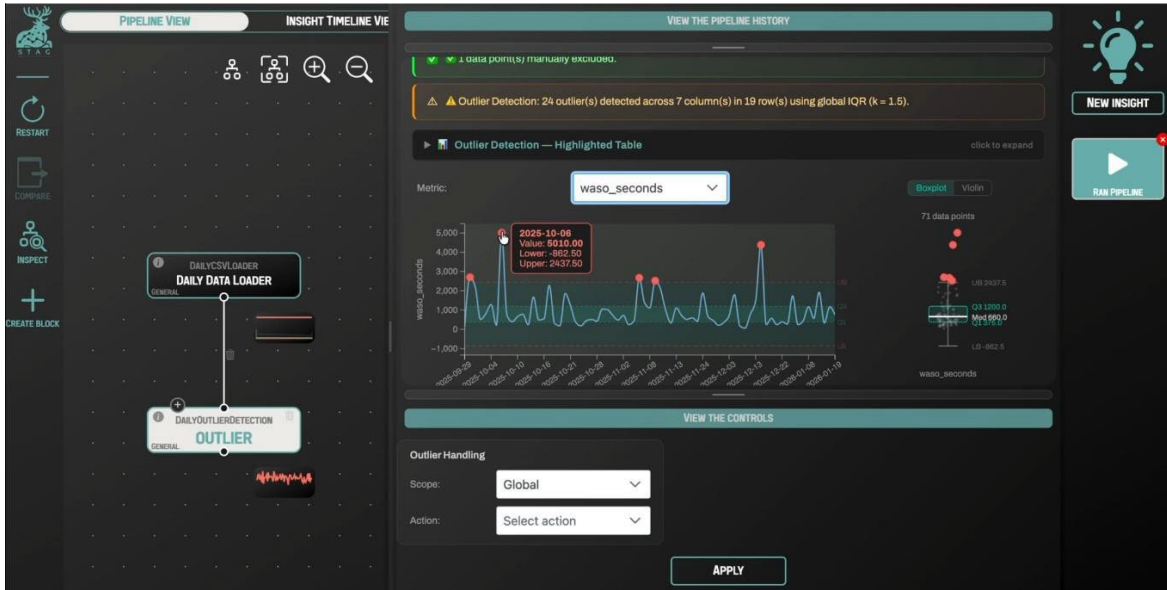


Figure 2 STAG used by a UZH expert for outlier detection and removal in a time series sensor data attribute