ConMon
Anomaly Detection on
Cyclic Industrial Sensor Data

Pro²Future

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MOTIVATION & GOALS

- Huge amounts of (timeseries) data are generated in durability tests of engines
- Each test in divided in multiple cycles
- In each cycle, hundreds of sensors measure different signals: multivariate timeseries
- These data can be used to analyse/predict the condition of the engines
- E.g., to identify anormal behaviour in advance to avoid unplanned breakdowns
- To support engineers with the analysis, we provide an interactive visual analytics tool for anomaly detection in multivariate timeseries data

Project FactBox

Project Name ConMon
Project ID MFP 3.2.2
Duration 36 Months

Area 3
Cognitive Decision Support

Project Lead
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APPROACH

- Interactive visual analytics tool which combines several anomaly detectors
  - regression-model-based
  - causality-based
  - correlation-based
- Glyph-based approach enables the exploration of anomalies in cyclic data
- Interactive labelling through a user interface captures engineers domain knowledge for further processing

## CONTRIBUTION

Scientific contribution
- Applied research in anomaly detection on real life testbed data
- Multiple user studies and design studies with the domain experts
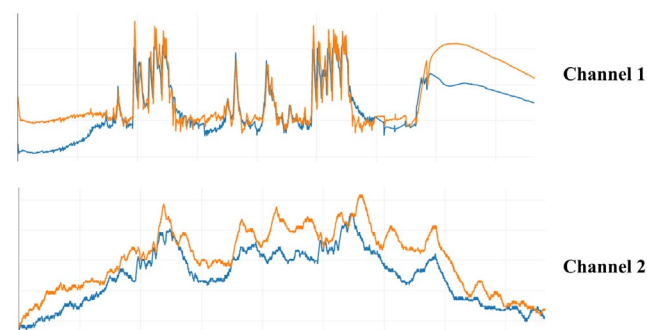- 1 accepted paper, 3 papers to be submitted

Economic contribution
Our user study with the domain experts has revealed the effectivity and efficiency of our tool for in a real life setting.

PROTOTYPE
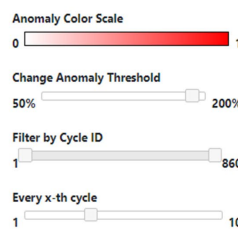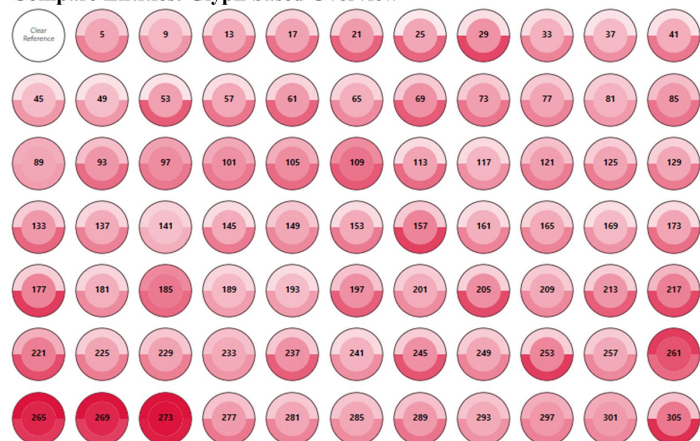
Exploration of Anomalies in Cyclic Multivariate Industrial Time Series Data for Condition Monitoring