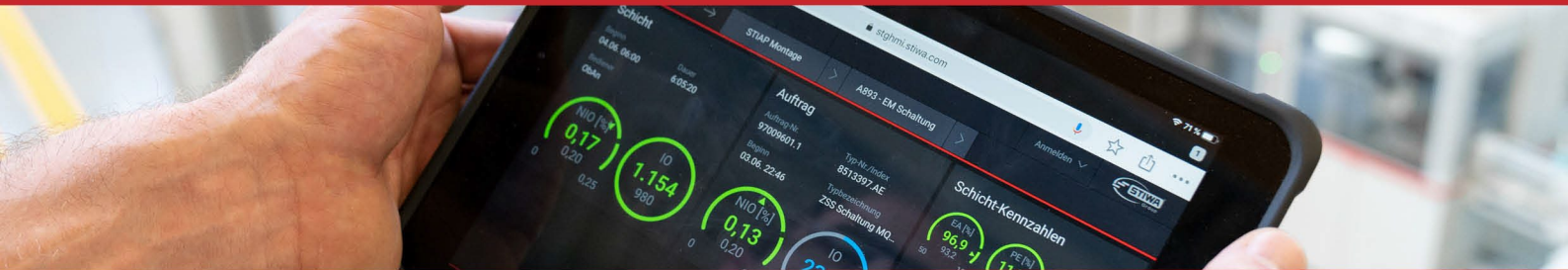


# Anomaly detection in event streams using Apache Kafka and Apache Flink



## Master's Thesis

**Our goal is the profound control of systems and processes in networked product and high performance automation, intelligent building automation and pre-analytical processes in the laboratory. With more than 150 employees and 30 years of experience, STIWA Software inspires customers from various industries worldwide.**

## Motivation

In the new software generation STIWA is moving towards event stream processing based on Apache Kafka and Apache Flink. These event streams contain valuable information which is very helpful for the operation of the STIWA software as well as for the operation of the connected production lines. In particular, temporal sequence patterns in the event stream are to be monitored in "real time" in order to detect problems at an early stage. An example would be the detection of x defective parts in a series produced on a production line.

## Targets

- Develop an executable platform solution for event stream anomaly detection
- Implement initial detection algorithms that address real-world and common sequence patterns
- Validate the viability of the platform to generate initial customer value

## Tasks

- Technology Evaluation: Compare Apache Flink CEP with alternatives based on a set of criteria.
- Design: Concept development for a platform-based solution that can be used to implement both standardized and user-defined rules for anomaly detection.
- Implementation: Platform solution and implementation of initial detection algorithms using Apache Kafka, Apache Flink CEP, and a graphical rules DSL such as Drools.

## PLEASE CONTACT US

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