

577 – Creating an Algorithm to Identify Patterns from Time Series Data & IOT Solutions

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Abstract: Engineers recognize the importance of applying oscilloscope measurements to troubleshooting issues. Digitalized signals from electrical and mechanical devices are becoming more and more available at the automation level. Using specific triggers to catch relevant events, this data can be framed into "data pictures" and recorded, to characterize the operation of industrial assets. The trigger and the sampling frequency are key factors that must consider the event nature and the data analysis techniques. This recorded data will become the algorithm "memory" - the training data set.

For advanced data analysis, the time series investigation from steady state and dynamic events can offer valuable insights, helping to find operational patterns and deviations. Creating an algorithm with "feeling" to distinguish normal and abnormal operation is a notable challenge, which requires adequate data and a high-level team to use and develop specific techniques to reduce the learning process.

This paper is a data analysis exploratory work using real data from a power generation asset and presents findings, data analysis workflows, and conclusions about the pattern recognition.