Power Quality Analytics – How AI Helps to Transfer Expert Knowledge into Software

Expert talk covers:

- Requirements for fault prevention

- Concept for permanent monitoring

- Justification of the application of AI methods

- Practice examples

Thursday, 18th of Nov. at 11.25 – 11.55 am. (CET)

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at Siemens

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Power Quality Analytics – How AI Helps to Transfer Expert Knowledge into Software

Disturbances and faults in electrical grids can cause not only damages but also large outage costs if important processes are affected. Modern Power Quality (PQ) meters are able to explore high frequency ranges and to provide flexible triggers to record dynamic and transient events. Fault prevention requires a permanent monitoring of PQ and a sensitive trigger setup to catch anomalies even if no limits are violated. Such an approach produces a large data set, which must be processed with powerful algorithms to detect the significant signals and to guarantee fast diagnostics.

Artificial intelligence methods are a great step forward to support PQ experts in analyzing signals and taking the right diagnostics decisions: application of machine learning approaches to detect anomalies, artificial neural networks to identify signals and expert systems to support the diagnostics part. Such a monitoring framework, which covers all the steps from monitoring, data transfer, AI based analytics and diagnostics, is described on the basis of the Siemens solution Power Quality Analytics.

About Christian:

Holds multiple senior roles at Siemens AG, Power Technologies International: Principal Key expert of Power System Quality, Portfolio Owner, Department Head and Senior Consultant. Before his business career, Christian worked on postdoc research at Saarland University. Christian's areas of expertise include, but are not limited to, data-analytics with artificial intelligence (AI), disturbance analysis of power quality (PQ), strategic planning of distribution networks and integration of dispersed energy generation into transmission and distribution grids. He holds a Ph.D. in Electrical Engineering from the Saarland University.

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