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## **The implementation possibilities of Artificial Intelligence functionalities in process control systems**

We demonstrate how the toolbox of artificial intelligence (AI) and machine learning (ML) can support the monitoring of processes. We highlight how these functions can be implemented in existing process control systems and how open source solutions (e.g., Python toolboxes) can be goal-orientedly tailored for their development.

We give an in-depth overview of the steps of the workflow of the implementation of these solutions and present the structure of an AI/ML supported process control system. The methodology and the results are presented concerning the AI/ML-based improvement of the monitoring and operation support functionalities in the WebSCADA system of an industrial water treatment plant.

*Tamás Ruppert graduated with a bachelor's degree in Mechanical Engineering (2015) and Engineering Information Technology (2015) and master's degree in Mechatronical Engineering (2016). He is experienced in the fields of process- and software engineering. His current work focuses on Industry 4.0 (Discrete Event simulators, Connected Factory, Supply Chain management) and Big Data.*

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