

Machine Learning for Optimized Plant Operations

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SUBMISSION TYPE

30 minute presentation

6-12 page paper plus 30-minute presentation

3 foot wide x 4 foot high large format poster

KEYWORDS

Machine Learning, Big Data, Process Optimization, Predictive Analytics, Industrial Internet of Things (IIoT)

ABSTRACT

The modern wastewater plants are as automated as ever using modern industrial protocols to link up the field devices and controllers to central operations centers. Plant operators and managers rely heavily on SCADA and other technology to monitor and control the process and other systems, however this is all done in a reactionary manner. Why aren't plants utilizing more current techniques to better predict and maintain plant operations? This presentation will be discuss how to use Big Data and Predictive Analytics packages to tie into existing controllers, SCADA, and historians to produce models that can forecast equipment failures or even improve process control. The presentation will also cover the basic requirements for implementing a machine learning and predictive analytics platform along with how operators and plant managers can better operate their respective plants. A use case will be demonstrated how using machine learning algorithm was able to predict a basin neural blower motor failure weeks in advance, saving time on maintenance and repair costs. Finally, examples will be shown on how existing PLC packages can be transformed into IIoT devices, with existing programming libraries.

ABOUT THE SPEAKERS

James Ruiz is currently the COO at ITG Technologies working in automation and controls for the last 10 years. James' oversees all day-to-day activities, as well as, acts as the Director of Engineering for ITG Technologies. He obtained his Electrical Engineering degree from the University of Florida and currently resides in Jacksonville, FL with this wife. Contact: jruiz@itgtec.com

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