Predictive Analytics for Industrial Applications

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Large industrial plants are essentially networks of related assets. Most of the assets in a plant are well instrumented. The instrumentation provides all required streaming data to build models for anomaly detection, failure prediction, etc.

In the first part of my talk, I will discuss analytics as a valuable tool in understanding the key underlying drivers and/or causes of personal safety incidents in a plant. Our work is focused on identifying precursors to incidents within the refining facility of a firm through the application of advanced analytics techniques. This will help the firm take some preventive actions in order to reduce the number of safety incidents in the future.

The second part of my talk will look at condition-based maintenance of high value assets in the natural resource industry. This is becoming increasingly important given the cost and complex dependencies in the supply chain. Based on sensor data collected from the equipment it is critical to perform predictive maintenance at just the right time to avoid production disruption without undue maintenance costs. We will discuss how predictive analytics techniques can be applied to facilitate monitoring, maintenance, and optimization of assets for better availability, utilization, and performance.