

Learning Methods for Process Fault Detection and Diagnosis

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An important role of decision rules in a sensed process is to detect anomalies from the normal operating environment. A flexible method to learn normal operating conditions that can be automated and is widely applicable to diverse operations and data types is described. The approach uses a supervised learner that contrasts the operating data to artificial, structureless data. With such a contrast, the intent is to detect the natural structure. The same learner can be interrogated to diagnosis the variables that contribute to a signal. Improved performance is expected from additional computationally intensive but still feasible extensions that are briefly discussed.