

Data-Mining Approach to Analyzing Industrial Process Information for Real-Time Monitoring

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Abstract : This work presents a data-mining empirical monitoring scheme for industrial processes with partially unbalanced data. Measurement data of good operations are relatively easy to gather, but in unusual special events or faults it is generally difficult to collect process information or almost impossible to analyze some noisy data of industrial processes. At this time some noise filtering techniques can be used to enhance process monitoring performance in a real-time basis. In addition, pre-processing of raw process data is helpful to eliminate unwanted variation of industrial process data. In this work, the performance of various monitoring schemes was tested and demonstrated for discrete batch process data. It showed that the monitoring performance was improved significantly in terms of monitoring success rate of given process faults.

Keywords : data mining, process data, monitoring, safety, industrial processes

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