Process Monitoring, Anomaly Detection, and Beyond: New Directions and Applications

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Abstract

There is a huge literature on anomaly detection dealing with statistical process monitoring in manufacturing, engineering process control, and change-point detection. More recent work includes methods for multivariate data, time series, integrating statistical and engineering process control and so on. In this talk, we will provide a brief review of these methods and describe recent developments motivated by new applications. These include issues in advanced manufacturing, fraud detection in telecommunications and finance, fault detection in sensor networks, and monitoring quality of service in communications networks.