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Big Data Approach to Batch Process Monitoring: Simultaneous Fault Detection and Diagnosis Using Nonlinear Support Vector Machine-based Feature Selection

Melis Onel, Chris A. Kieslich, Yannis A. Guzman, Christodoulos A. Floudas, Efstratios N. Pistikopoulos

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## Highlights

- A novel data-driven framework using nonlinear Support Vector Machine-based feature selection is proposed for fault detection and diagnosis in batch processes.
- The proposed framework is applied on a comprehensive benchmark dataset comprising of 22,200 batches with 15 faults, and normal operation.
- Fault and time-specific models are trained for simultaneous fault detection and diagnosis with three distinct time horizon approaches: one-step rolling, two-step rolling and evolving.

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