

# **Applications of Computational Intelligence and Data Mining Tools in Fault Diagnosis and Estimation of Parameters in Industrial Processes**

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## **Resumo/Abstract:**

The results achieved in the design of fault diagnosis systems and estimation of parameters in industrial processes applying computational intelligence and data mining techniques will be presented. The research has been addressed to obtain fault diagnosis and parameter estimation methods robust in the presence of noise and external perturbations and sensitive to small magnitude faults. Among the techniques applied are the Principal Component Analysis (PCA), Fisher Discriminant Analysis (FDA), kernel methods and the application of an inverse problem approach by solving an optimization problem.