FDI in Multivariate Process with Naive Bayesian Network in the Space of Discriminant Factors

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Abstract

The Naive Bayesian Network (NBN) classifier is an optimal classifier in the case of independent descriptors or variables. The presence of dependencies between variables generally reduce his efficiency. In this article, we are proposing a new classification method named Naive Bayesian Network in the Space of Discriminants Factors (NBNSDF) which is based on the use of the NBN in the space of discriminants factors issue from a discriminant analysis. The discriminants factors are not correlated letting very efficient the utilisation of the NBN. We found on simulated data that the NBNSDF method better detects and isolates faults in multivariate processes than the NBN.

Keywords: *Naive Bayesian Network, Discriminant analysis, Fault Detection and Isolation.*