

Sensor Validation Using Bottleneck Neural Network and Variable Reconstruction

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Abstract : The success of any diagnosis strategy critically depends on the sensors measuring process variables. This paper presents a detection and diagnosis sensor faults method based on a Bottleneck Neural Network (BNN). The BNN approach is used as a statistical process control tool for drinking water distribution (DWD) systems to detect and isolate the sensor faults. Variable reconstruction approach is very useful for sensor fault isolation, this method is validated in simulation on a nonlinear system: actual drinking water distribution system. Several results are presented.

Keywords : fault detection, localization, PCA, NLPCA, auto-associative neural network

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