Fault detection and diagnosis for process control rig using artificial intelligent

Abstract

This paper focuses on the application of artificial intelligent techniques in fault detection and diagnosis. The objective of this paper is to detect and diagnose the faults to a process control rig. Fuzzy logic with genetic algorithm method is used to develop fault model and to detect the fault where this task is performed by using the error signals, where when error signal is zero or nearly zero, the system is in normal condition, and when the fault occurs, error signals should distinctively diverge from zero. Meanwhile, neural network is used for fault classification where this task is performed by identifying the fault in the system.

Keyword: Fault detection and diagnosis; Fuzzy logic; Genetic algorithms; Neural network; Process control