類神經學習向量量化網路之汽輪發電機組故障診斷

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摘要

本文提出以類神經網路之學習向量量化網路(Learning Vector Quantization, LVQ) 應用於汽輪 發電機組故障診斷 (Steam Turbine-Generator Fault Diagnosis)之研究。利用學習向量量化網路之特性,用已知的故障數據對類神經網路進行訓練後,即可對汽輪發電機組的故障型態進行診斷。為驗證本文所提之 LVQ 對汽輪發電機故障診斷之準確性,使用 MATLAB 撰寫 LVQ 程式,並經過訓練後診斷新的樣本資料,分辨出故障型態,以證明所提方法之效率及準確性。

關鍵字：類神經網路;學習向量量化網路;汽輪發電機;故障診斷

Neural Learning Vector Quantization Network for Steam Turbine-Generator Fault Diagnosis

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Abstract

This paper presents a Neural Network Learning Vector Quantization (LVQ) for steam turbine-generator fault diagnosis. Using the known data to train the LVQ Network. Then, input the new samples to diagnose the fault type. In order to prove the accuracy of the LVQ for steam turbine-generator fault diagnosis, using MATLAB to develop LVQ program. The simulation can prove the proposed method is effective and accurate.

Key Words：Neural network;Learning vector quantization;

Steam turbine-generator;Fault diagnosis