Presenting a Model for Making a Comparison of Bayesian Networks and Decision Tree Algorithms in Intrusion Detection Systems-Based on Data Mining

Fazli-Maghsoudi H. and Momeni H.

ABSTRACT:

By development of information technology, network security is considered as one of the main issues and has great importance in recent years. The use of machine learning algorithms is a common method for intrusion detection systems. This paper is aimed to compare the performance of different machine learning algorithms in terms of accuracy of intrusion detection systems. This study uses a publicly available dataset and the results of simulation suggest that J48 algorithm has the highest precision of 85.49% for the intrusion detection system.

Key words: abnormal packet, Bayesian networks, data mining, decision tree, intrusion detection systems, normal packet.

Performance Comparison of STATCOM & SVC in Reactive Power Control Strategy For Wind Farm

In this paper the wind farm reactive power control strategy introduced by the STATCOM and SVC. First, the STATCOM system and SVC system are evaluated and the results of simulation are demonstrated by simulation. All results, obtained in the MATLAB software simulation.

Key words: Doubly-Fed Induction Generator (DFIG), Wind farm.
Performance Evaluation of Three-Phase Induction Motor Fed by unbalanced voltage Combined with Over- or Under Voltage Using Finite Element Method

Original Research, C3
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ABSTRACT:
Unbalanced voltages can exist anywhere in a three-phase power distribution system. Thus, investigation of their effects is necessary. In this study, the effect of several unbalance types is investigated, using the Finite Element Analysis. For this purpose, unbalance factors are employed, including between-phase voltage unbalance factor (BVUF), phase-to-neutral voltage unbalance factor (PVUF), and complex voltage unbalance factor (CVUF). The results show that the CVUF is the most influential factor, regarding its effect on the induction motor performance. Also, the least unbalance type is the overvoltage, so the CVUF is used as a better criterion to assess the unbalance. Consequently, the investigated factors have significant effects on the induction motor performance and the CVUF is a good criterion to assess the unbalance.

Key words: CVUF, Efficiency, Induction Motor, Losses, Torque, Voltage Unbalance.

Conceptual comparison of Line-Start Permanent Magnet Synchronous and Induction Machines for Line-fed of different conditions

Original Research, C4
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ABSTRACT:
This study presents a comparative analysis of Line-Start Permanent Magnet Synchronous Motor (LSPMSM) and Induction Motor (IM) for line-fed of different conditions. The results show that the LSPMSM has a better steady-state response than the IM, if its synchronization problems are overcome.
Voltage Sag Evaluation during Induction Motors Starting Using Artificial Neural Network

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ABSTRACT:
One of the most important concerns in electrical systems is to deliver energy to the consumers with high power quality. However, power quality disturbances are always a concern due to their negative effects on the grids and consumers. Voltage sag is the most common power quality disturbance. This paper presents a new approach to evaluate voltage sag during induction motors starting using artificial neural network (ANN). Both multilayer perceptron (MLP) and radial basis function (RBF) structures have been analyzed. Six learning algorithms, backpropagation (BP), delta-bar-delta (DBD), extended delta-bar-delta (EDBD), directed random search (DRS), quick propagation (QP), and levenberg marquardt (LM) were used to train the MLP. The simulation results show that proposed technique can estimate the voltage sag characteristics with good accuracy. Also, it is shown that the LM and EDBD algorithms present better performance for evaluating of voltage sag magnitude and duration.

Key words: Induction motors, multilayer perceptron, motor cable, radial basis function, voltage sag.