

# **ABSTRACT**

The power system is a very important asset of every nation. In recent days we are very much depended on electric power. Electric power consumption is the index of nation development. Power systems are also having problems such as fault diagnosis, load frequency control, unit commitment, load scheduling, optimization, etc. In the above-mentioned problems, fault diagnosis is one of the major issues. The stability of the power system is also depending on the faults in the system. If any fault occurred in the system means the action has to be taken within a few seconds otherwise losses in the system will get increased and the equipment in the power system will get damaged. These issues can be addressed with various traditional and soft computing techniques.

Machine Learning is one of the better technique available for the above-mentioned issue. Machine learning uses neural networks to process the data. Neural networks are inspired by the human brain neurons. These neural networks are shown to be in layers. There will be multiple layers to process the data. The output from one layer is used as input for another layer. This network structure is called as artificial neural network. The improved version of the artificial neural network is called deep learning networks. Before testing the network the training for the network is essential by using past data.

In this thesis, we will try to address the power system fault diagnosis problem by using the machine learning technique.