

## Research on Artificial Intelligence Method for Identification of Transformer Fault

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**Abstract:** Oil-filled power transformers play an important role in the modern network system. Stability of power supply can be achieved by early detection of power transformer fault and continuous monitoring of equipment status. Transformers in operation are constantly affected by various types of stresses such as electrical, thermal and mechanical stress. Much attention is needed on maintenance of transformers in order to have fault free electric supply and to maximize the lifetime of a transformer. In recent years, Dissolved gas analysis (DGA) has been widely used for diagnostic fault of power transformers. Although DGA is an easier and simpler method for fault diagnosis of transformer, different techniques usually give different analysis results with real-world data. In fact, conventional diagnosis approaches for power transformers depend upon experience and high technology of human experts. Therefore, in this research, Multi-layer perceptron (MLP) and Self-Organizing Map (SOM) are applied to the fault intelligent diagnosis for power transformers. The MLP model is constructed by using Keras library and SOM model is constructed by our original system. The method is tested with public databases of Electric Technology Research Association of Japan standard (ETRAJ). Both method, MLP and SOM are successfully developed to predict fault in power transformer in this research.