# Fault detection in smart grid Cameroon

How to analyze fault location in a smart grid?
In smart grid, data analysis for fault identification and detection is crucial for grid monitoring. Nowadays, there are several DL techniques developed for smart grid data analysis applications. To solve this problem, a novel data analysis model based on deep learning and Neuro-fuzzy algorithm is developed for fault location in a smart power grid.

How a smart grid can detect faults using artificial intelligence?
ABSTRACT Fault detection and location give to smart grid the ability to self-healing and isolating the fault in order to limit the negative consequences. In the literature, several techniques are proposed for detection and classification of faults using artificial intelligence algorithms.

Can deep learning detect fault in smart distribution grid?
This article proposes a deep learning (DL) model made of Long Short Term Memory (LSTM) and Adaptive Neuro Fuzzy Inference System (ANFIS) to detect fault in smart distribution grid assisted by communication systems using smart meter data. In smart grid, data analysis for fault identification and detection is crucial for grid monitoring.

What is fault detection in smart grid system?
The acquisition of data from smart meters allows to detect anomalies and faults using data analysis methods. In smart grid system, fault detection is an approach which allows to detect and identify the fault and evaluate its consequence in the system and to prevent some damages to the people.

Can LSTM detect fault from smart meters?
This paper proposes a novel data analysis method based on deep learning and a neuro-fuzzy algorithm for the detection and classification of fault. In this work, the LSTM allows the training of data from smart meters. The neuro-fuzzy algorithm is used for the detection and classification of fault from trained data.

Can fuzzy logic and neural networks detect faults based on smart meters?
This paper proposes a novel method using fuzzy logic and neural networks for detection, classification, characterization and location of faults based on data from sensors and smart meters installed in the smart grid.

Smart grid plays a crucial role for the smart society and the upcoming carbon neutral society. Achieving autonomous smart grid fault detection is critical for smart grid system state awareness, maintenance and operation. This paper focuses on fault monitoring in smart grid and discusses the inherent technical challenges and solutions. In particular, we first present ...

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This paper proposes two machine learning approaches based on the binary classification to improve the process of fault detection in smart grids. Besides, it presents four machine learning models trained and tested on real and modern fault detection data set designed by the Technical University of Ostrava. ... AND LOCATION IN SMART GRID 2955 The ...

While Machine Learning approaches have been applied in smart grids for fault detection, the robustness and security of these systems need thorough exploration. ... Thanks to the advancements in the field provided by the smart grid, several data-driven approaches have been proposed in the literature to tackle fault prediction tasks. Implementing ...

This article proposes a deep learning (DL) model made of Long Short Term Memory (LSTM) and Adaptive Neuro Fuzzy Inference System (ANFIS) to detect fault in smart distribution grid assisted by communication systems using smart meter data. In smart grid, data analysis for fault identification and detection is crucial for grid monitoring.

the smart grid and smart grid fault detection. A. Overview of Smart Grid and Fault Detection The key components of smart grid system is shown in Fig.1. From the perspectives of power transmis-sion, power distribution and power consumption, au-tonomous smart grid fault detection is needed. 1) Power Transmission: As UHV AC and DC transmis-

Fault detection and identification are critical tasks in maintaining the reliability and stability of the energy grid. The timely detection of faults and accurate identification of their locations ...

Section 5 aggregates concepts and procedures associated with the SG faults detection and location in the Smart City context. Next, Section 6 describe lessons learned and future research directions in FD/L-SG. Finally, Section 7 offers the main conclusions. ... Smart grid fault detection using locally optimum unknown or estimated direction ...

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Such a smart grid is big enough to test all required faults and create the needed dataset to thoroughly study a fault detection system. In fact, the power system loading depends on a large number of variables such as the environment temperature, sun irradiation, stored energy in batteries, nonlinear load, and also operation of the

fuel-cell.

Effective fault detection, classification, and localization are vital for smart grid self-healing and fault mitigation. Deep learning has the capability to autonomously extract fault characteristics and discern fault categories from the three-phase raw of voltage and current signals. With the rise of distributed generators, conventional relaying devices face challenges ...

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Using DIgSILENT, a smart-grid case study was designed for data collection, followed by feature extraction using FFT and DWT. Post-extraction, feature selection. CNN-based and extensive machine learning techniques were then applied for fault detection. - ...

This data will be crucial for optimizing grid operations by improving fault detection, load management, and predictive maintenance. ... The smart grid indicators are designed to complement existing frameworks, integrating seamlessly with current monitoring systems. This integration will provide a comprehensive view of the grid"s health ...

This article proposes a deep learning (DL) model made of Long Short Term Memory (LSTM) and Adaptive Neuro Fuzzy Inference System (ANFIS) to detect fault in smart distribution grid assisted by communication ...

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