

**VOLTAGE STABILITY INDEX PREDICTION BY USING
GENETICS ALGORITHM-BASED MACHINE LEARNING
(GBML) TECHNIQUE**

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**ZAINAB BINTI MOHD GHAZALI
FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
40450 SHAH ALAM, MALAYSIA
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ABSTRACT

Voltage stability is the ability of a power system to maintain acceptable voltage at all buses in the system under normal conditions and after being subjected to a disturbance. It is important to keep the power system stable to avoid network failure or collapse. Recently years, it is reported that many major network failure occurs due to voltage instability. In case of that, voltage stability has become one of the major concerns in planning and operating of electrical power system. This problem has inspired researchers to seek for the solutions. One of effective way is by applying early prediction or on-line prediction of system's stability. This thesis has come up with new technique to predict the voltage stability condition of a power system. The proposed technique is using Genetic Algorithms-Based Machine Learning (GBML) to predict the voltage stability index. However researchers keep searching for most effective technique to predict the stability index. The effectiveness is measure in term of accuracy, simplicity and computation time. From the results it shows that Genetic Algorithms has great features in term of simplicity to implement and fast computation time.

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