**Comparison of Machine Learning Methods for Breast Cancer Diagnosis**

**ABSTRACT**

Cancer is the second reason of human death all over the world and accounts for roughly 9.6 million deaths in 2018. The most common cancer type among women are breast, lung and colorectal, which totally symbolize half of the all cancer cases. Also, breast cancer is responsible for the thirty percent of all new cancer diagnoses in women. Machine learning (ML) methods ensure analyzing the data and extracting key characteristics of relationships and information from dataset. In this paper, two of the most popular machine learning techniques have been used for classification of Wisconsin Breast Cancer (Original) dataset and the classification performance of these techniques have been compared with each other using the values of accuracy, precision, recall and ROC Area.

**EXISTING SYSTEM**

Breast Cancer is the most frequent disease as a cancer type for women. There is no existing systems can give a better performance on the available data.

**Disadvantages of Existing System:**

1. Performance is less.

**PROPOSED SYSTEM**

In this paper, we have discussed two popular machine learning techniques for Wisconsin Breast Cancer classification. Artificial Neural Network and Support Vector Machine are used as ML techniques for the classification of WBC (Original) dataset in WEKA tool. The effectiveness of applied ML techniques is compared in term of key performance metrics such as accuracy, precision, recall and ROC area. Based on the performance metrics of the applied ML techniques, SVM (Sequential Minimal Optimization Algorithm) has showed the best performance in the accuracy of 96,9957 % for the diagnosis and prediction from WBC dataset.

**Advantages:**

1. Performance is best.

2. Accuracy is more.

**SYSTEM REQUIREMENTS**

**HARDWARE REQUIREMENTS:**

# Processor - Pentium –IV

* Speed - 1.1 Ghz
* RAM - 256 MB(min)
* Hard Disk - 20 GB
* Key Board - Standard Windows Keyboard
* Mouse - Two or Three Button Mouse
* Monitor - SVGA

**SOFTWARE REQUIREMENTS:**

* Operating System - Windows7/8
* Programming Language - Python