BVRIT HYDERABAD
College of Engineering for Women
Department of Information Technology
Major Project - Academic Year 2022-23

TEAM 9

Breast Cancer Prognosis Using Machine Learning

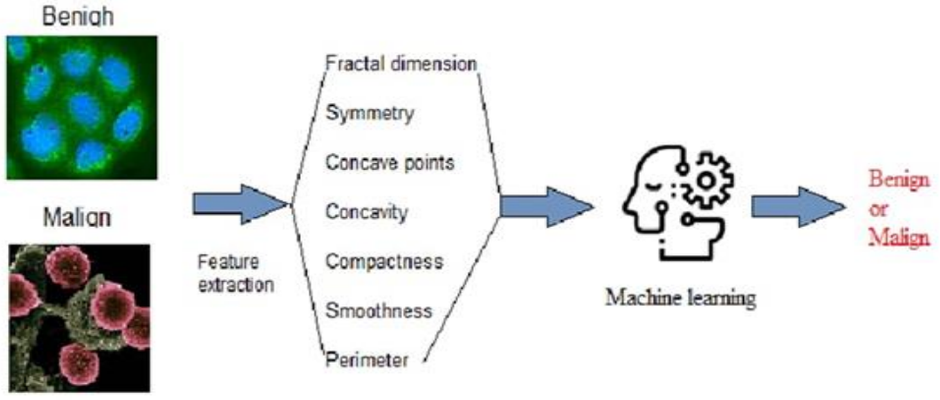
Abstract

Breast cancer is a prevalent and potentially life-threatening disease that affects millions of women worldwide. Early detection and accurate prediction of breast cancer can significantly improve patient outcomes and survival rate. Machine learning techniques can be helpful in the process of early prediction and diagnosis of breast cancer. Hence, there is a requirement to develop the technique which gives minimum error to increase accuracy. In this project, we applied five machine learning algorithms: Support Vector Machine (SVM), Random Forest, Logistic Regression, Decision tree, and K-Nearest Neighbours (KNN) on the Breast Cancer Wisconsin Diagnostic data set. On comparing the accuracies of different algorithms, we observe that SVC (Support Vector Classifier) and KNN (k-nearest neighbours) shows best accuracy percentage, but we choose SVC because KNN is easier to interpret but can identify only a limited set of patterns.

Modules

Data Import
Data Pre-processing
Training the Model
Testing the Model

Architecture



Tools and Technologies

- **Machine Learning**
- **Python**
- **Jupyter notebook**

Conclusion and Future Scope

- In this project, We have explored different prediction models and various evaluation methods. We measuring the performance of the models using real data . 5 popular classification algorithms have been used and after comparing these algorithms with different performance metrics we concluded that SVC is the best machine learning algorithm to predict breast cancer.

Guide

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Github Link

1. https://github.com/19wh1a1268/breastcancerproject
2. https://github.com/19wh1a1277/breastcancerproject
3. https://github.com/19wh1a1295/breastcancerproject
4. https://github.com/19wh1a1296/breastcancerproject