

A Review Paper of Breast Tumor Detection Using Different Methods

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Abstract - There are several role for addressing breast cancer to detect tumor using Machine Learning with soft computing device. To predict and classify the data in Effective way. In this Paper are going to describe prognostic information from suffered cancer patient's .Dealing with Support vector Algorithm to predict the breast cancer outcomes .It has four parts ,First part of domain is Prediction of cancer before diagnosis, Second Part of domain is Prediction of cancer after treatment, Third Part will be Analysis of stages level for Prognostic information after diagnosis stage(Over completion of 3 months), Finally Fourth part will be given some Food alerts for each different stage. The categories of those four parts stages to make awareness and self prediction for cancer affected paitents.Regularly Monitoring each parameters to providing proper food for suffered patients to immediate curing. In this Paper deals with only taking survey of all existing work are included.

Index Terms - Machine Learning, Support Vector Algorithm Stages and Food alerts

INTRODUCTION

Cancer is fast cell development to increase the risk out of cell growth control. According to the research, Breast cancer is the most possible cause of cancer especially for women and the second most common cause of cancer death in women in the India .In 2020, 2.3 million women are diagnosed with breast cancer and deaths are enormously increase range of 685000 globally. For Past five years 7.8 million women's were affected with breast cancer.

According to the report derived by the World Health Organization (WHO) will denote that 1 in 10 Indians used to develop cancer cell during their lifetime and one in 15 Indians are die of cancer.

Results of National Cancer Institute to estimate year of death rate for 2020 is more than 9.6 million die from cancer every year .Types of cancer like Lung, Colorectal cancer ,Pancreatic cancer Breast cancer and Liver Cancer.

The Main approach to detect early stage of breast cancer using mammography such as X-ray used to scan tumour part in breast and bring out the normal and abnormal condition. It has many number of diagnosis test like Ultrasound, MRI Mammogram and Biopsy, Output of those technology aims to bring the damage area undergoes for the classification

Using this mammogram tools and technique to detect cancer cell tissues, if any suspicious outcomes are happen then informs the doctor to test the tissues .While using Ultrasound, suspicious site is detected to remove the cell tissue.Dealing with MRI its shows like image format and point of view of your illness area. After that while going for biopsy tool is a procedure to remove a sample part of breast tissues for testing, Sample is sent to a labatory where doctor who specialize in analysing body tissue to examine the result based upon the condition.

Machine Learning works under role for the Classification of the breast cancer. It has many process of diagnosis used for the different classification based on the illness condition. While dealing with machine learning is a subset of artificial intelligent. It has retrain the existing models and give better performance. It has provided only with linear data. Even data will be smaller set it bring out the performance result in high result with good accuracy, Process data in high set its bring performance result in lesser accuracy. It has three type of machine learning used to train the model. First type, supervised machine learning works with known data. Type two is unsupervised machine learning works with unknown data. Type three is Reinforcement machine learning is less usage of all domains.

LITERATURE REVIEW

Mohamed Abdel et al- This Paper deals with Multiple mammographic views for individual patients. Mammography is one of the x-ray tools to detect tumour position [1]. **Nur Syahmi Ismail et al-** Dataset are collected from Image Retrieval in Medical Application dataset (IRMA) is used for resizing image part with image conversion for network system. The networks are classified with two model networks .VGG16 and ResNet50 are implemented .The collected image will be classified and organized base on normal and abnormal growth. Finally Classification part are used to measure parameters and performance like precision ,recall and accuracy[2]. **R Anand et al** In this Paper dataset will provide new information like univariate evaluation, Bivariate and Multivariate examination and missing worth solution.Early finding of underhandedness is major role using block chain process [4] **F.J.Shaikh et al** -In this study of paper concentrated on Deep learning and machine learning approaches are used in cancer

progression modelling are to be reviewed. Those Prediction addressed are linked with specific input and data sample. The important look of this paper will capable to detect key features from complex dataset[5].**Madhu et al** The breast cancer prediction undergoes on edge based convolution neural network algorithm used to elimination of unknown content from graphical image area before applied Convolution neural network will reduce time and space consumption. Accuracy might vary depend upon size of image and some alternation of dataset also.[7] **Nadia g. Elseddeq et al** The aim of this paper is split into two groups like feed forward neural network is an optimal set of feature selection .The another group deals with optimized parameters of feed forward neural network which are used as an subset of selected features result in average accuracy is 100%[8] **R. J. Manoj** -The Breast cancer metastasis prediction model using a very small number of biological interpretable feature to compare with different biological interpretable. The result can improve the prediction model. To evaluate and construct machine learning concept that can be valued to both the cancer machine learning computing and related application.[9]

METHODS AND FINDING

Various Algorithm and different existing process have been discussed by researchers to find out breast cancer detection used by different technique. To monitoring disease status and image visualization. Among the different existing process will able classify breast image with deep learning, Machine Learning and Artificial Intelligence are used heavily..

A Breast Image Classifier consists of four stages First stage Selection of breast dataset .Second stage, Feature extraction and Selection, Third stage used for Classifier Models. Finally, Performance and Parameter Measurements.

FIGURE 1: PROCESSING STEP

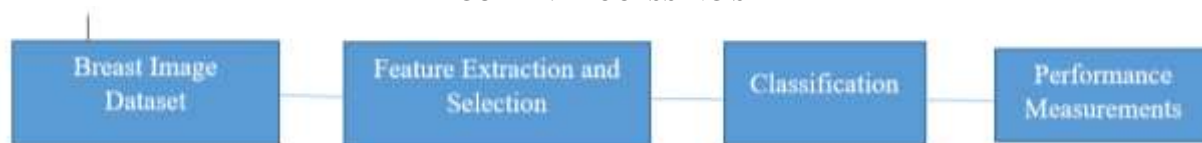


TABLE 1: COMPARISON OF EXISTING RELATED WORK

Authors	Methods	Findings	Dataset used
Syed Saba Raoof et al.	Naive Bayes, Logistic Regression, Support Vector Machine, Artificial Neural Network	Input data acquired is converted into Binary Format using NLP Method. Dataset is analyzed by Machine learning to produce output in accurate.	Wisconsin Breast dataset
Shubham Sharma et al.	Random Forest and k-NN	To measure the correct prediction in correspondence to the wrong one accuracy:	Wisconsin Breast Cancer data set
Nur Syahmi Ismail et al.	Mammogram Deep Learning and Transfer learning	Using VGG16 and ResNet50 to segregate normal tumor part and abnormal tumor part VGG16 in terms of result with 94% ResNet50 are 91.7% in terms of result accuracy	IRMA dataset
Md. Omaer Faruq Goni et al.	Deep Neural Network and Machine Learnings	Prediction of data in results of 99.42% accuracy	Wisconsin Breast cancer dataset
Anand Ramachandran et al	Deep Neural Network	Analysis of genomic data	Hidden Markov Model
Xujuan Zhou et al	Receiver Characteristic Curve, Area Under Curve, Mean Absolute Error and Mean Squared Error.	AUC with 84.5% ,MAE with 85.7% MSE with 0.043 and MAE with 0.082%	BreakHis dataset
Saqib Iqbal et al	Deep Learning (LSTM)-Long Short-Term Memory and Gaussian Kernel.	ResNet -101 is used for better Predictor of prostate cancer	Health Insurance Portability and Liability dataset
Ahsan Bin Tufai et al	Machine Learning, Convolutional Neural Networks (CNNs) and Artificial Intelligent	It is used for Proper grading for tumor which belong to three classes like Angiogenesis, lower-Grade Astrocytic Tumor Discrimination, and Cell Differentiation Prediction with good and bad prognostic values.	MITOS-ATYPIA-14 dataset, INbreast database (BreakHis) dataset
Nutnicha Teeyasuksa et al	Deep Learning Algorithm, Random Forest	High Accuracy result of 96.99%	Wisconsin Dataset
Michalis.V et al	Artificial Neural Network Bayesian Network and Decision Tree and Predictive Models	Modeling of Cancer Progression	High Throughput Technologies (HTTs) Dataset
Chaoyang Zhang	Auto encoder Network and Deep Transfer Learning	Analysis of Histopathological image of Breast cancer	BreakHis Dataset

CONCLUSION

Breast cancer is one of the most challenging task because it is harmful and popular disease around the world. It is one of fast growing sector and there is less technology to predict this cancer in early stage. From Detection part, Machine learning and deep learning technique are used for all stages For all existing literature review of machine learning technique gives better result which were compare to all other technique .Advance detection and accurate results can do extraordinary role to reduce the death rate. Apart from all existing work Food assumption will be added in future work.

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