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Prediction Of Breast Cancer Classification And Segmentation Using Artificial Intelligence Techniques With The Recursive Feature Elimination Over Logistic Regression Algorithm.

INTRODUCTION

➤ The use of artificial intelligence (AI) approaches has become a viable path in the search for more accurate breast cancer diagnosis. To improve breast cancer classification and segmentation this work pioneers the merger of LR with Recursive Feature Elimination (RFE).

➤ To improve breast cancer classification and segmentation this work pioneers the merger of Logistic regression (LR) with Recursive Feature Elimination (RFE).

➤ RFE, which was first presented by Guyon et al. in 2002, finds the most informative attributes iteratively to maximize feature selection. introduced LR, artificial intelligence technique architecture that may produce realistic results when given particular input data in parallel.

➤ The research deals with the technique based on artificial intelligence system to forecast and monitor the course of ductal cancer .
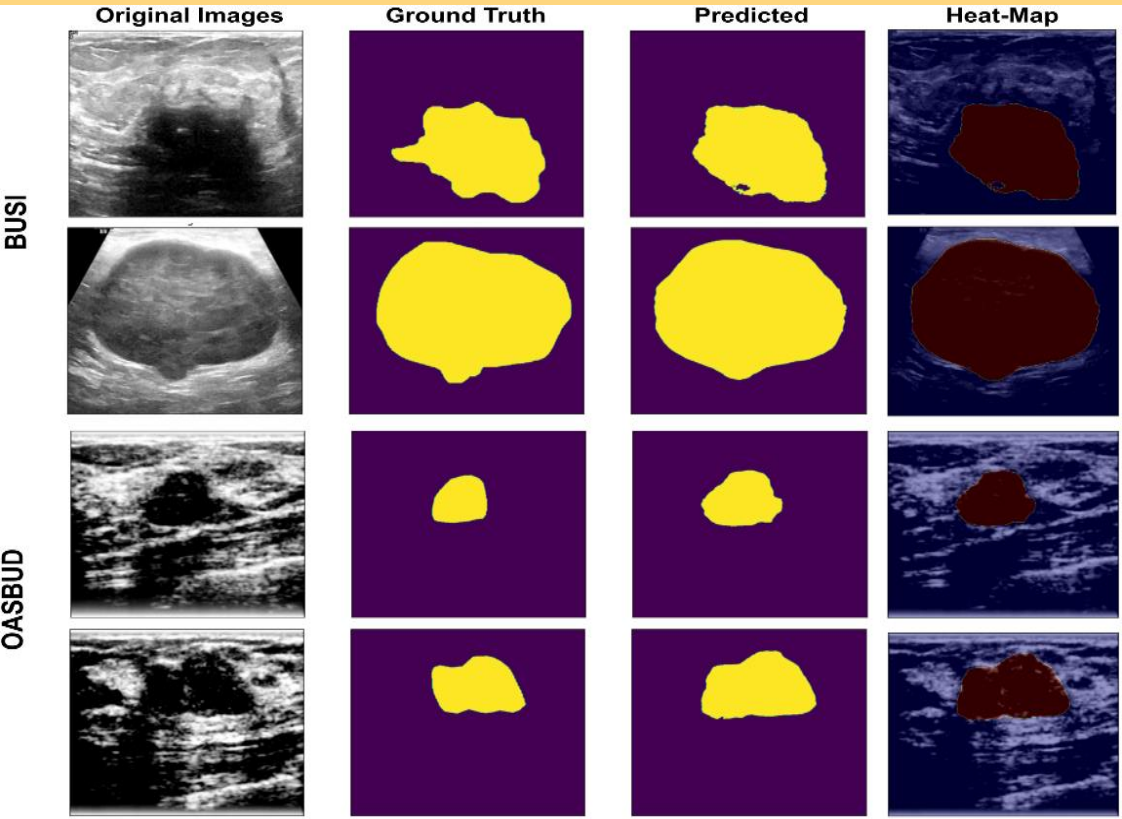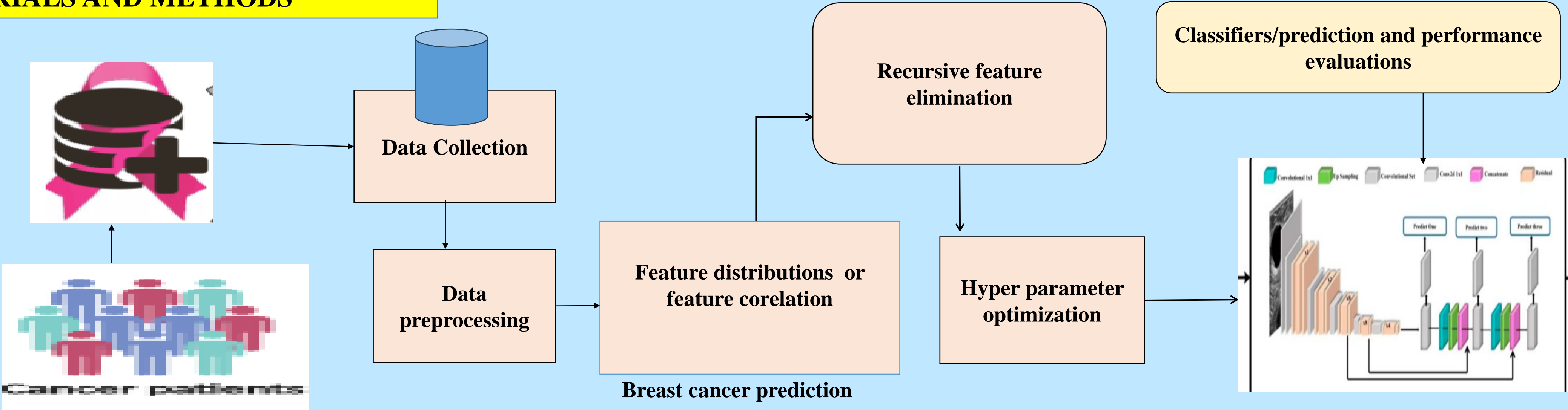

FIGURE 1 : Breast cancer classification

MATERIALS AND METHODS

Data Collection

Data preprocessing

Feature distributions or feature corelation

Breast cancer prediction

Recursive feature elimination

Hyper parameter optimization

Classifiers/prediction and performance evaluations

RESULTS

Simple Bar Mean of Accuracy by Algorithm

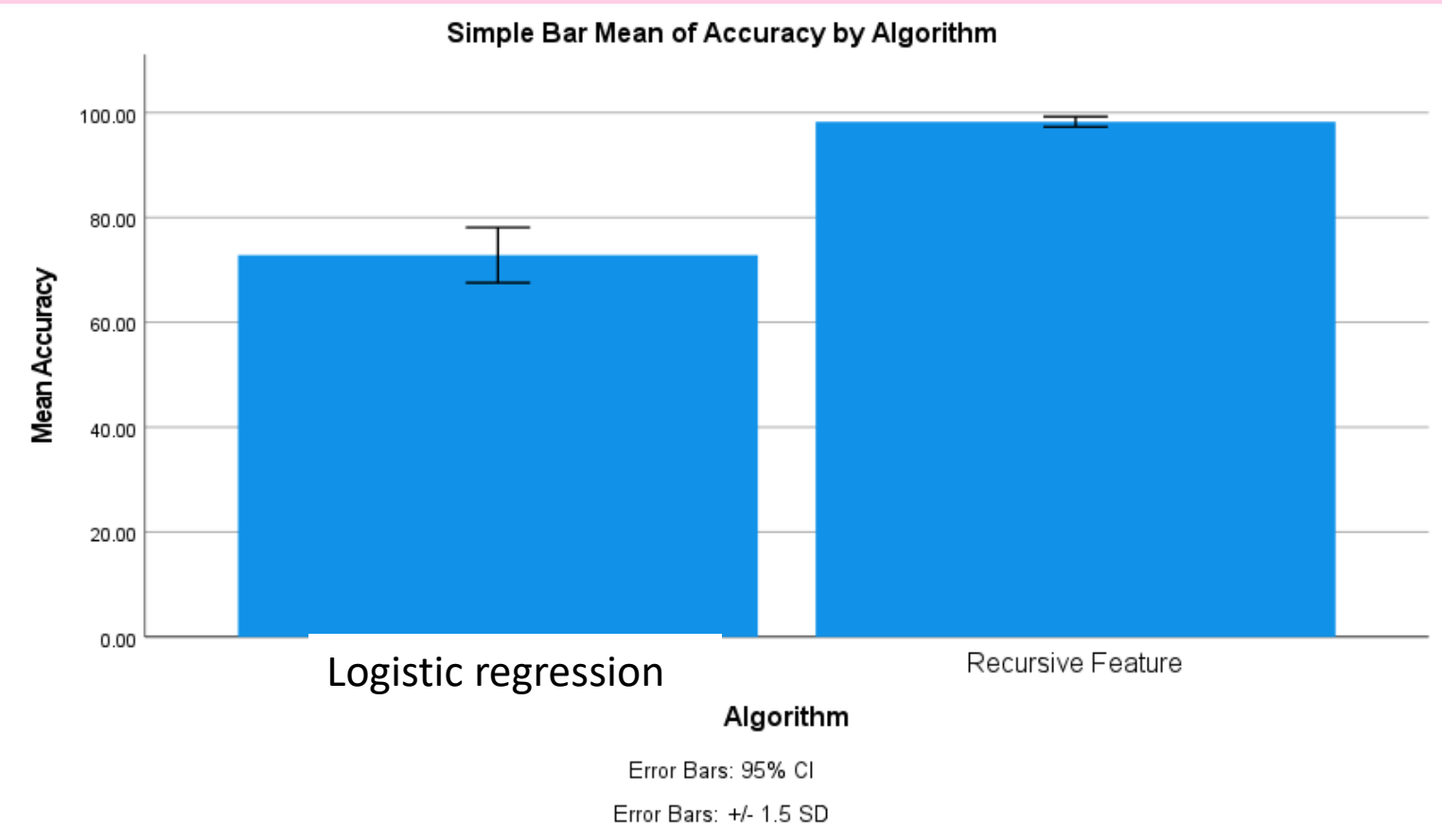Error Bars: 95% CI
Error Bars: +/- 1.5 SD

Fig 2: Comparison of RFE and Logistic regression.

Table 1 : Statistical computation of independent samples tested among the novel using RFE over Logistic regression.

Group Statistics					
	Algorithm	N	Mean	Std. Deviation	Std. Error Mean
Accuracy	Recursive feature elimination	10	98.2800	.64429	.20374
	Logistic regression	10	72.8400	3.52269	1.11397

DISCUSSION AND CONCLUSION

➤ Based on T-test Statistical analysis, the significance value of p=0.0012 (independent sample T - test p<0.05) is obtained and shows that there is a statistical significant difference between the group 1 and group 2.

➤ Overall , the accuracy of the Recursive feature elimination is 98.28 % and it is better than the other algorithms. The percentage of Logistic regression is 72.84 % as compared to that of recursive feature elimination algorithm is 98.28%.

➤ By gradually eliminating less significant features from a dataset, Recursive Feature Elimination (RFE) is a feature selection method that aids in locating the most pertinent characteristics. RFE improves the information by concentrating on the most illuminating features performance of machine learning models for segmenting and predicting breast cancer, among other tasks.

➤ One kind of Logistic regression that uses conditional information in the generation process is the Logistic Regression (LR).

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