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Prediction Of Breast Cancer Classification And Segmentation Using Artificial Intelligence Techniques With The Recursive Feature Elimination Over U-NET Detection Algorithm.

INTRODUCTION

- Breast cancer is still one of the most common and dangerous cancers that affect women globally. Effective therapy and better patient outcomes depend on early detection and precise classification. The automated detection and segmentation of breast cancer lesions has demonstrated encouraging outcomes in recent years with the integration of artificial intelligence (AI) tools in medical imaging.
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- In this research study , Recursive feature classifier is compared with U-NET detection algorithm where RFE method is very effective in removal of AI models for assessing the risks associated with the patient complaints and clinical reports
- The advantage of recursive feature classifier has proven to be faster as compared with Support vector machine Algorithm.

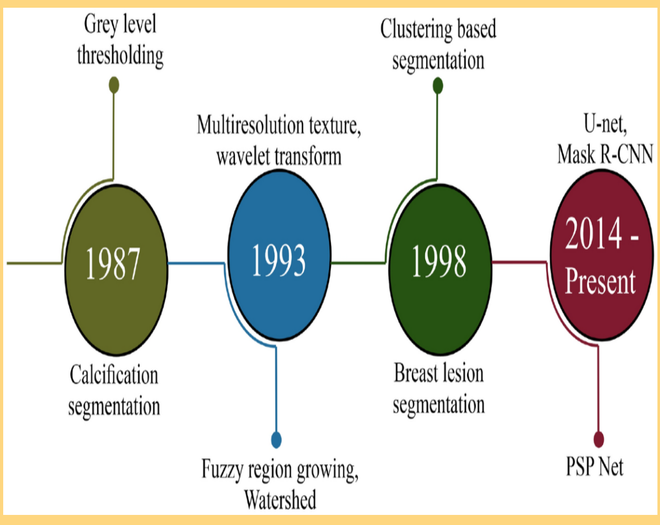
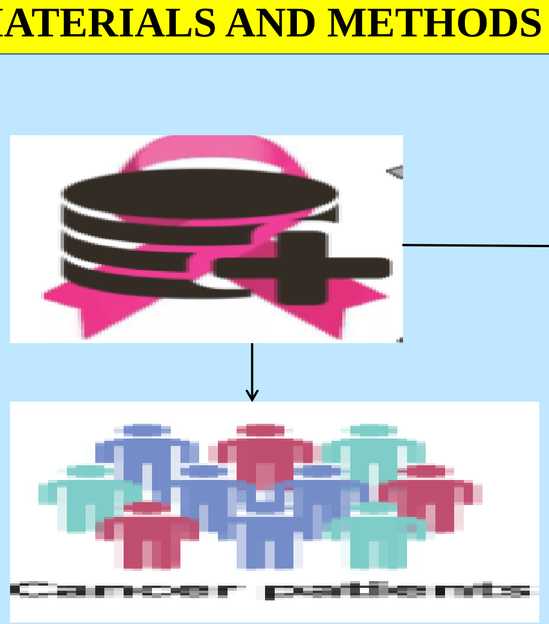


Fig 1: History of classification for Breast Cancer

MATERIALS AND METHODS



Breast cancer prediction

RESULTS

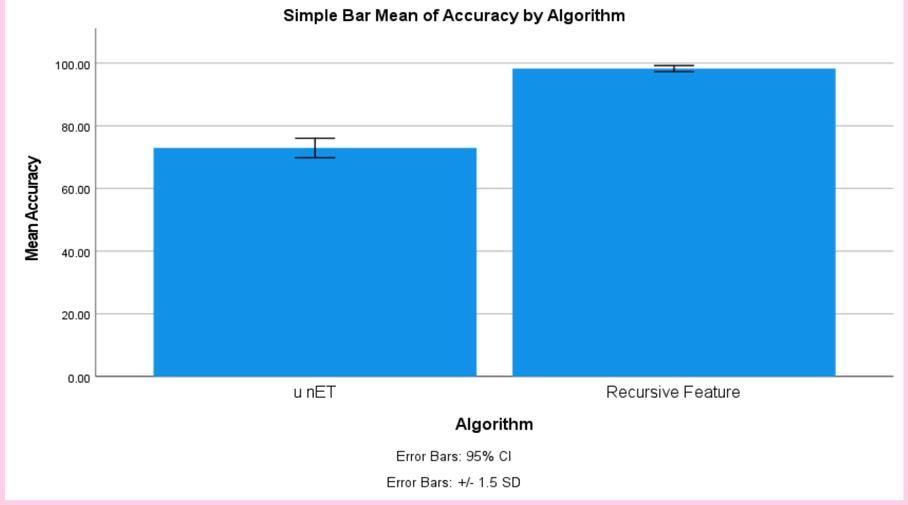


Fig 2: Comparison of RFE and U-Net

Table 1 : Statistical computation of independent samples tested among the novel using RFE over U-Net.

Group Statistics					
	Algorithm	N	Mean	Std. Deviation	Std. Error Mean
Accuracy	Recursive feature elimination	10	98.2800	.64429	.20374
	U-net detection	10	72.9400	2.06839	.65408

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.
- The term "enhancement" implies a focus on improving the accuracy, efficiency, or performance of breast cancer classification and segmentation methods. This suggests a research goal of refining existing techniques or introducing new approaches to enhance the analysis of breast cancer data.
- The U-Net detection algorithm is a convolutional neural network architecture commonly used for image segmentation tasks. U-Net is particularly effective in biomedical image analysis, including the detection and segmentation of structures in medical images. In the context of breast cancer classification and segmentation, the U-Net algorithm may be employed to accurately identify and delineate regions of interest within breast cancer images.
- Overall , the accuracy of the Recursive feature elimination is 98.28 % and it is better than the other algorithms. The percentage of U-Net detection algorithm is 72.94 % as compared to that of recursive feature elimination algorithm is 98.28%.

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