| 0004 | Explainable AI-based prognosis and categorization of breast cancer on ultrasound dataset

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**ABSTRACT:**

Breast cancer is the second top most disease affecting women all over the world. Early detection and timely diagnosis reduces the health risk for patients. Deep learning is one of the recently growing areas and automatic detection is the need for early diagnosis of disease in today’s scenario. This work focuses on the automated detection of breast lesions using deep learning. Breast Ultrasound images were used to carry out this work. We propose an image classifier using a transfer learning based model for two-class classification of ultrasound breast images. We consider explainable artificial intelligence (XAI) for image predictions. Several metrics were used to evaluate the performance of the proposed model. The results outcome shows that the proposed approach can categorize between the benign and malignant tumors efficiently. Hence, it will be beneficial for the medical professionals to test patients more effectively and early detection of the disease.

***Keywords: Breast cancer; ultrasound; explainable artificial intelligence; deep learning***

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