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पेटेंट कार्यालय का एक प्रकाशन
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(54) Title of the invention : DEEP LEARNING–BASED IMAGE PROCESSING FRAMEWORK FOR AUTOMATED EARLY DETECTION OF BREAST CANCER

(51) International classification :G06T 7/00, G06N 3/08, G06N 3/04, G06T 7/11, G06V 10/764 (31) Priority Document No :NA (32) Priority Date :NA (33) Name of priority country :NA (86) International Application No : Filing Date :01/01/1900 (87) International Publication No : NA (61) Patent of Addition to Application Number :NA Filing Date :NA (62) Divisional to Application Number :NA Filing Date :NA	(71)Name of Applicant : 1)Mrs.P.Prema Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, NPR College of Engineering and Technology, Natham, Dindigul-624401 Dindigul Tamil Nadu India 2)Mohammad Anwarul Siddique 3)Dr. Ratna Raju Mukiri 4)Dr Shanmuga Rajathi D 5)Dr. Pravin Gopalrao Sarpate 6)Swathi Lenka 7)Soumya Gudepu 8)K Ashok Kumar 9)Reethu V 10)J A Jevin 11)Mrs.S.Kayathri 12)P Joel Josephson (72)Name of Inventor : 1)Mrs.P.Prema 2)Mohammad Anwarul Siddique 3)Dr. Ratna Raju Mukiri 4)Dr Shanmuga Rajathi D 5)Dr. Pravin Gopalrao Sarpate 6)Swathi Lenka 7)Soumya Gudepu 8)K Ashok Kumar 9)Reethu V 10)J A Jevin 11)Mrs.S.Kayathri 12)P Joel Josephson
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(57) Abstract :

Deep Learning–Based Image Processing Framework for Automated Early Detection of Breast Cancer is the proposed invention. The proposed invention presents a deep learning–based automated image processing framework for the early detection of breast cancer using medical imaging modalities such as mammography, ultrasound, and MRI. The system employs an advanced preprocessing module to enhance image clarity and reduce artifacts, followed by a segmentation network that isolates potential abnormal regions within breast tissue. A convolutional neural network–driven feature extraction and classification engine then analyzes these segmented regions to accurately differentiate between normal, benign, and malignant conditions. The framework integrates interpretable visual outputs through heatmaps and detection markers to support radiologists in clinical decision-making. Additionally, an adaptive learning mechanism enables continuous performance improvement as more clinical data becomes available. The invention enhances diagnostic accuracy, speeds up screening workflows, and supports early cancer detection, making it suitable for use in hospitals, diagnostic centres, and remote healthcare environments.

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