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Enhanced Breast Cancer Diagnosis Using Machine Learning on Patient Data and Deep Learning

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Abstract: *Breast cancer is one of the most critical health challenges affecting women worldwide. Early detection and accurate diagnosis are essential for improving survival rates and reducing mortality. Recent advancements in Machine Learning (ML) and Deep Learning (DL) have significantly enhanced diagnostic accuracy by analyzing patient clinical data and medical images. This review paper presents a comprehensive analysis of ML and DL techniques used for breast cancer diagnosis. Various datasets, feature extraction methods, classification algorithms, performance metrics, challenges, and future research directions are discussed. The study highlights the growing role of artificial intelligence in developing efficient and reliable computer-aided diagnostic systems*

Keywords: Breast Cancer, Machine Learning, Deep Learning, Medical Imaging, Computer-Aided Diagnosis

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