

In the context of the widespread global challenge of cancer, With a specific focus on Pulmonary cancer (PC), this project work investigates the crucial area of timely Identification by improving deep learning model in WSI image analysis. By combining Efficient net b7 with color histogram techniques, a new hybrid feature set is created, designed to enhance the quality of the image . The extensive analysis includes one distinct Ensemble learning algorithms. This thorough analysis highlights an exceptional model that attains an impressive accuracy rate of 99.7% on the LC25000 dataset. Applying this methodology to breast cancer detection with the Break dataset achieves an impressive accuracy rate of 94.9%. These findings highlight the transformative potential of AI in the complex field of histopathological analysis, establishing it as a crucial element in enhancing diagnostic capabilities. A thorough comparative analysis reveals both the advantages and limitations of current AI applications in medical imaging, paving the way for future improvements and clinical use. Therefore, ongoing research in AI within clinical environments is encouraged, with the goal of strengthening early cancer diagnosis and improving patient outcomes through targeted treatment strategies.