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Patent Search

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Abstract:

Deep Learning Framework for Image-Based Breast Cancer Detection is the proposed invention. The proposed invention focuses on understanding the functions of Cancer Detection. The invention focuses on analyzing the parameters of Image-Based Breast Cancer detection using algorithms of Deep Learning.

Complete Specification

Description:[0001] Background description includes information that may be useful in understanding the present invention. It is not an admission that any of the information provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.

[0002] Deep learning is a machine learning method that teaches computers to process data in a way that mimics the human brain. Deep learning models can recognize patterns in data like text, pictures, and sounds to make accurate predictions and insights. Deep learning uses multiple layers to extract higher-level features from raw data.

[0003] A number of different types of breast cancer analysis systems that are known in the prior art. For example, the following patents are provided for their teachings and are all incorporated by reference.

[0004] EP3788546A1: - A method and system to generate a probabilistic prediction of the presence/absence of cancer in longitudinal and current image datasets, multimodal image datasets, and the location of the cancer, is described. The method and system use an ensemble of deep learning models. The ensemble includes a model in the form of a 3D convolutional neural network (CNN) extracting features in the dataset's indicative of the presence of cancer on a global basis. The ensemble includes a two-stage prediction model which includes a first stage or detection model which identifies cancer detection candidates (different cropped volumes of 3D the a dataset containing candidates which may be cancer) and a second stage or probability model which incorporates the longitudinal datasets (or multimodal image multimodal dataset) and the extracted features from the global model and assigns a cancer probability p to each of the cancer detection candidates. An overall predicted probability of cancer is obtained from the probabilities assigned by the second stage model, e.g., using a Noisy-OR approach.

[0005] Cancer is a group of diseases that occur when abnormal cells grow and spread throughout the body. Cancer can start in any organ or tissue and can invade nearby areas or spread to other organs. Cancer can cause tumors, damage the immune system, and other impairments that can be fatal. It can affect many parts of

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