Patent Search

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Abstract:

Artificial Intelligence and IoT based automatic prediction of distant metastasis risk for male breast cancer patients based on an interpretable machine learning model learning algorithms Abstract: Due to the fact that each instance of breast cancer is unique, it can be challenging to predict how it will progress and to select the optim monitoring strategy. EHRs are growing in popularity, bringing with them a plethora of new methods to exploit the vast amounts of data that are now routinely collecte electronic format for other purposes. Algorithms for machine learning can analyse enormous amounts of data and identify patterns that humans would never detect investigation, medical records were analysed to determine the likelihood of breast cancer recurrence within five years. We examined whether the combination of stru unstructured data from health records could produce more accurate predictions than either source alone. These algorithms are potent instruments that can aid phys making appropriate clinical decisions by enabling them to utilise vast quantities of data. They are also required for improved risk assessment and patient care. The pu study was to determine the optimal machine learning model using the Shapley Additive Explanations framework and evaluate the predictive accuracy of various mach models and nomograms for male breast cancer patients with distant metastases.

Complete Specification

Description:Descriptions:
Male breast cancer (MBC) is exceedingly uncommon, comprising less than 1% of all breast malignancies. In contrast, the number of new cases identified annually ha steadily risen over the past three decades. Because men are substantially less likely than women to develop breast cancer, the vast majority of clinical studies on th condition employ only female participants. This suggests that physicians lack sufficient long-term data to determine how to treat male breast cancer. Only 27% of th with distal metastases were still alive after 5 years. Despite recent advances in breast cancer treatments, the mortality rate for these patients continues to rise. Acco studies, the prognosis for men with MBC was worse than for women with the same condition. Men are more likely to be diagnosed with a fatal form of breast cance as triple-negative breast cancer (TNBC), later in the disease's progression. MBC patients with distant metastasis were more likely to have concurrent lesions in their and lungs than female breast cancer patients with distant metastasis. When comparing MBC and FBC patients, stage, age, hormone receptor status, and other facto taken into account. This demonstrated that patients with MBC had the same or a superior prognosis than those with FBC. When distant metastases are evident, the prognosis for patients with metastatic breast cancer (MBC) is significantly worse. As a result, having a tool that can accurately predict distant metastasis in MBC pati would be advantageous, as it would enable patients to better understand how to avoid cancer and receive the most effective treatment at the appropriate time. In r years, machine learning (ML) has gained popularity in the medical industry. These applications include determining cancer risk, diagnosing cancer, estimating a can patient's life expectancy, and determining the fate of bone lesions. Due to the "black box" nature of machine learning models, it may be difficult to comprehend hov model can accurately predict an event or why a specific attribute is so important to the final outcome. To apply a machine learning model in a clinical setting, we mu therefore be able to interpret it intuitively. In 2017, the SHapley Additive Explanations framework was introduced to assist medical professionals in comprehending

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