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(54) Title of the invention : A NOVEL FEATURE SELECTION APPROACH TO CLASSIFY BREAST CANCER DRUG USING OPTIMIZED GREY WOLF ALGORITHM

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(57) Abstract :

Over the course of the previous two decades, cancer has evolved into a widespread illness around the world, and there has been a discernible rise in the incidence of cancer among women. Women have a higher risk of developing breast and ovarian malignancies than males do. The vast majority of patients see their doctors only when they are in the latter stages of their condition. Researchers continue to face a significant obstacle with regards to the early detection of cancer. Despite the frequent synthesis of a number of medications, research into the several advantages offered by these substances is limited. With millions of medications being produced and their data being made available via open repositories, the pharmaceutical industry is constantly evolving. Using methods from machine learning, it is possible to repurpose existing drugs. In this study, we provide an unique suggestion for a feature selection method that successfully identifies breast cancer medications, creates various populations for the grey wolf algorithm, and is presented as part of our contribution. Additionally, the Leukemia Drug Dataset is analyzed, and the Multilayer Perceptron Model attained a 96 percent accuracy rate in its predictions. The application of three supervised machine learning algorithms, namely the Random Forest classifier, the Multilayer Perceptron, and the Support Vector Machine models, resulted in the determination that the Multilayer Perceptron had a higher accuracy rate of 97.7 percent for the classification of breast cancer drugs.

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