

Novel Approaches to Multi-Disease Prognosis: An All-Encompassing Investigation to Improve Medical Results

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Abstract: *This thorough review paper uses machine and deep learning approaches to synthesize and analyze recent advances in multi-disease prediction. The study explores the methods used, datasets used, and findings produced in the context of forecasting many diseases like diabetes, heart disease, renal disease, Alzheimer's, and cancer. It does this by drawing on insights from 10 different research papers. Modern deep learning models like Artificial Neural Networks and Convolutional Neural Networks, as well as more conventional algorithms like Random Forest and Support Vector Machines, are examined. The paper addresses issues such model stability, interpretability, and data privacy while highlighting the crucial role that efficient prediction models play in the healthcare industry. It offers a comparative study of performance measures from various research, emphasizing the disparate accuracy levels attained by various algorithms. Additionally, the research finds common themes used in other investigations, including feature selection, data preprocessing, and hybrid model integration. The importance of efficiency and adaptability in multi-disease prediction models is emphasized, especially in addressing drawbacks of current methods. Together, the findings deepen our understanding of the dynamic field of multi-disease prediction and open up new avenues for future investigation. These avenues include the incorporation of the Internet of Things (IoT), the exploration of multi-feature inputs, and the creation of more potent prediction models. For those working in the fields of predictive analytics and healthcare, researchers, practitioners, and policymakers, this review is an invaluable resource.*

Keywords: machine learning, deep learning, multi-disease prediction, healthcare, ANN, CNN.

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