عنوان مقاله:

Comparing Supervised Machine Learning Models for Covid-۱۹ patient detection using a Combination of Clinical and Laboratory Dataset

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خلاصه مقاله:

COVID-۱۹ is a new variant of SARS-COV-۲ which can lead to mild to severe infection in humans. Despite the remarkable efforts to contain the epidemic, the virus spread rapidly around the world and its prevalence continued with different degrees of clinical symptoms in many countries. Although common strategies including prevention, diagnosis, and care are necessary to curb this epidemic, early and accurate diagnosis can play an important role in reducing the speed of the epidemic. In this regard, the use of technologies based on artificial intelligence can be of great help. For this reason, since the outbreak of COVID-۱۹, many researchers have tried to use machine learning techniques as a subset of artificial intelligence for the early diagnosis of COVID-۱۹. Considering the importance and role of using clinical and laboratory data in the diagnosis of people with covid-۱۹, in this paper K-NN, SVM, decision tree, random forest, Naive Bayes, neural network and XGBoost models are the most common machine learning models, and a dataset containing ۱۳۵۴ records consisting of clinical and laboratory data of patients in Imam Hossein Hospital in Tehran has been used to diagnose patients with covid-۱۹. The results of this research indicate that based on the evaluation criteria, XGBoost and K-NN models have the most accuracy among the mentioned models and can be considered suitable predictive models for the diagnosis of COVID-۱۹.

كلمات كليدي:

COVID-۱۹, Coronavirus, early detection, machine learning techniques, Supervised model