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Research Article

Zika Virus Prediction Using AI-Driven Technology and Hybrid Optimization Algorithm in Healthcare

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The Zika virus presents an extraordinary public health hazard after spreading from Brazil to the Americas. In the absence of credible forecasts of the outbreak's geographic scope and infection frequency, international public health agencies were unable to plan and allocate surveillance resources efficiently. An RNA test will be done on the subjects if they are found to be infected with Zika virus. By training the specified characteristics, the suggested Hybrid Optimization Algorithm such as multilayer perceptron with probabilistic optimization strategy gives forth a greater accuracy rate. The MATLAB program incorporates numerous machine learning algorithms and artificial intelligence methodologies. It reduces forecast time while retaining excellent accuracy. The projected classes are encrypted and sent to patients. The Advanced Encryption Standard (AES) and TRIPLE Data Encryption Standard (TEDS) are combined to make this possible (DES). The experimental outcomes improve the accuracy of patient results communication. Cryptosystem processing acquires minimal timing of 0.15 s with 91.25 percent accuracy.

1. Introduction

An infection's prelude and rapid spread to other regions of the globe attract the attention of the international community. Climate change is also a significant contributor to the rapid spread of illness. The species *Aedes aegypti*, which is widespread in urban areas, is the primary source of the illness, according to the CDC. Zika virus is a mosquito-borne illness that is comparable to dengue fever, west Nile virus, Chikungunya virus, and yellow fever, all of which are spread by mosquitoes. It is believed that mosquito bites are causing the spread of these illnesses and that *Aedes* mosquitoes are the primary vectors of these infections. Humans have had a significant challenge as a result of those, and this has mostly resulted in the transience of many tropical and subtropical nations [1]. It is an intrauterine illness caused by the Zika virus; the symptoms of Zika virus are often moderate fever, joint discomfort, and rashes, which are similar to those of dengue and Chikungunya virus. If an infected mosquito bites a pregnant woman and she becomes sick, the virus may spread across the placenta and affect the fetus. It is believed that pregnant women who are infected with the Zika virus will have neurological problems such as microcephaly and may give birth prematurely to their children. Even males who are infected with the 20 viruses may spread the virus to their sexual partners via anal, oral, or