INFORMATICS INSTITUTE OF TECHNOLOGY

IN COLLABORATION WITH THE

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LOCATION BASED DENGUE PREDICTION MODEL

A MACHINE LEARNING APPROACHED DENGUE PREDICTION SYSTEM

A DISSERTATION BY

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Abstract

Dengue is a menacing disease which has endangered almost half of the worldwide population. This viral disease is deliberated as one of the most rapid escalating diseases in the earth. The main reason for this is the medicines for preventions from this are still in levels of research. Subsequently, researches are conducted in the fields of medicine and computation for controlling and preventing this global threat. The main attention of this paper is given to dengue-endemic Sri Lanka because very few types of research were carried out in Sri Lanka, for reduction and prevention of this health issue not only that Sri Lanka is in a critical situation due this rapid escalating menacing.

This research is conducted on the computational approaches of dengue prevention with the use of correlations of several environmental and social influences affecting the proliferation of Dengue in Sri Lanka. The main aim of the research is on the approach of Machine Learning for identifying the correlations of the facets and for the forecasting of the disease outbreaks. The factors which are considered significant in this research for disease spread are climate, population, dengue case data, and vegetation. The aim is achieved by training the machine learning model with the collected data for predictions in Sri Lanka. For that, the classification machine learning approach is utilized.

Satisfactory level of accuracy could be achieved from the classification machine learning algorithm approach. This research will provide much help to Sri Lankans for preventing from the huge outbreaks of dengue, from the knowledge on future epidemics. Therefore, from the results and feedback from evaluators, it shows the overall result from this research is at a satisfactory level.

Keywords: Dengue, Sri Lanka, Environmental factors, Social factors, Machine Learning, Classification Algorithms