

ABSTRACT

Potential tsunamis are a threat that must always be of more concern because of the vast administrative area, large population, and a large amount of infrastructure exposed in tsunami-prone areas. The important thing to understand is that it is difficult to estimate tsunamis and control the impact of tsunamis. However, there is an alternative in the form of machine learning models that can help in estimating tsunamis and controlling tsunami impacts. In this research, alternative models are made to overcome this problem. The first model can estimate whether an earthquake will cause a tsunami, the second model can estimate the height of a tsunami that will occur, and the third model can estimate many tsunami victims. In this study, the first alternative model was made using a combination of latitude, longitude, magnitude, depth and country code as features and extra-trees classifier as the basis for an algorithm that produces 81% accuracy. The second alternative model is created using a combination of latitude, longitude, magnitude, depth and day as a feature and logistic regression classifier as the basis of the algorithm which produces 81% accuracy. The third alternative model can be created using a combination of latitude, longitude, magnitude, month and a maximum height of the tsunami as a feature and k-nearest neighbors classifier as the basis of an algorithm that produces accuracy up to 79%. These three models can help to react quickly, reduce the delay factors for an emergency response to disasters so that the tsunami disaster management process in terms of emergency response and rapid response can be carried out effectively and efficiently..

Keywords : Earthquake, Tsunami, Machine Learning