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Forecasting the Real-Time Weather Data and Fuel Consumption to Find Out the Optimal Shipping Route

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Abstract

Background: Safety is considered to be one of the most important point in transporting cargoes by vessels. The increasing of the numbers of the ships get along with the increasing of the amount of fuel consumption in each ship which is greatly contributed to the global warming issues [1]. Nowadays, the application of some latest technologies in 4th industrial revolution is more and more familiar with the shipping companies. With the development of the Internet of Things (IoT) and Bigdata, they play a vital role in supplying and analyzing the information to the shipping company and the carriers to know clearly about the weather conditions and flexibility in changing to a suitable shipping route [2].

Objective: In this paper, all of the information relating to the weather conditions occurring around the area of the shipping route in the past and the present will be used constantly with the purposes of finding out the optimal route to secure the goods transported. The information of fuel consumption will be based on the record of the vessels which had run in previous times. All of the information will be used to forecast to find out the optimal route with economic multi purposes.

Methodology: All of the data collected will be used to forecast and plan some optimized shipping routes which not only provide an ideal route but also minimize fuel consumption. Forecasting and find out some ideal vessel route will be applied in this research to forecast the weather conditions based on real-time weather data and the serial fuel consumption data [3].

Results, discussions and future works: This model has been in the making for several years but some reasons have prevented its development. The cyberattack will be the biggest barrier in preventing. The author believes that this scheme can be very beneficial in optimizing vessel routes and reducing atmospheric CO_2 during the global warming crisis.

References

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