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PREDICTING FISH SPECIES USING ARTIFICIAL INTELLIGENCE AND EARTH OBSERVATION SATELLITE DATA

Abstract

The global fishing industry generates over 80 billion dollars a year and employs over 200 million people. The fishing industry contribute about 2 percent of the total global carbon dioxide emissions due to conventional procedures of mechanized fishing practices. To reduce the level of emission and improve the efficacy of catch, a new practice of fishing must be adopted that involves the use of an Artificial Intelligence model that can analyze satellite data provided by Ocean Sat-2 and ocean parameters, seasonal effects, dwelling and traveling of targeted fish species in a selected region, and predict the presence of the species in a certain region with respect to the GPS coordinates of the vessel. This will help in minimizing the carbon footprint by reducing the consumption of fuel and also help in saving cost of fishing. For the purpose of developing the model, the western coast of Maharashtra state in India is selected as the state of Maharashtra accounts for over 34.26 percent of India's fish wild catch. For the simplicity of the model we target the species Rastrelliger Kanagurta (Indian Mackerel) which is having a natural habitat in the coast. The model is tend to predict the Potential Fish Zone for a species based on the real-time oceanographic parameters with respect to the vessel position. This will help in the development of a new fishing technique that will make the fishing industry eco-friendly and more sustainable.