Analyzing Fisheries Market, Shrimp Farming and Identifying Fish Species using Image Processing

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Abstract

The fisheries industry is vital to the Sri Lankan economy because it provides a living for more than 2.5 million coastal communities and meets more than half of the country's animal protein needs. Today, the fishery community in Sri Lanka is facing several monetary problems. Among them, not getting a reasonable fish price for their harvesting, the inability to identify diseases in shrimp cages in the early stages, and the inability to identify fish species by observing their external appearance. This research developed a prototype mobile application Malu Malu to avoid the above-mentioned problems. It facilitates the prediction of market fish prices, identifying shrimp diseases in their early stages, and identifying fish species by observing their external appearance. The proposed predictive models of the Malu Malu contains three main models developed using inception V3 Convolutional Neural Network (CNN) model for image classification and Linear Regression is used for creating a model for predictions. The experimental results of these models showed above 85% of accuracy.

Keywords

Price Prediction, Diseases, Fish Species, Inception V3, Linear Regression, CNN