Crude Oil Price Prediction Using Particle Swarm Optimization and Classification Algorithms

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Abstract

Crude oil prices are linked to significant economic activity in all nations across the world, since changes in crude oil prices usually impact the pricing of other commodities and services. As a result, forecasting crude oil prices has become a primary goal for academics and scientists alike. Crude oil has been the most important commodity in the world market and some countries like Nigeria, has it as the main trading commodity to other countries. Crude oil price fluctuations therefore cause problems on global economies and its effects are far reaching leading to either positive or negative economic growth rates. This study present an intelligent system that predicts the price of crude oil. The method used major economic factors that determine the price per barrel as inputs and outputs the price of crude oil. The data for usage came from the West Texas Intermediate (WTI) dataset, which spanned 24 years, and the experimental findings were quite hopeful, demonstrating that support vector machines could be used to forecast crude oil prices with a reasonable level of accuracy. Particle Swarm Optimization (PSO), Support Vector Machine (SVM), and K-Nearest Neighbors were employed in this investigation (KNN) for predicting Crude oil prices and the accuracy of the K-Nearest Neighbours was found to be higher than the Support Vector Machine by 9%.

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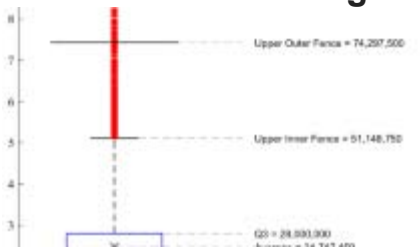

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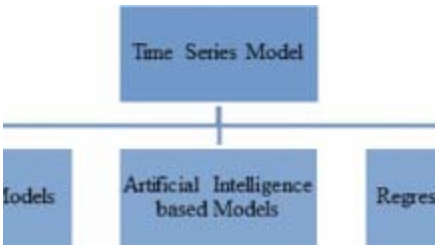

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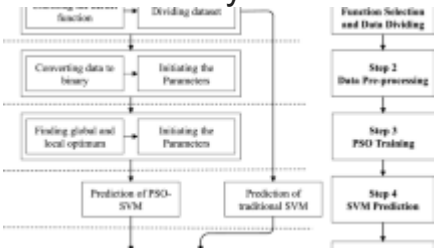

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