



**INFORMATICS
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INFORMATICS INSTITUTE OF TECHNOLOGY

In Collaboration with

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**‘CRUDOILY’
MACHINE LEARNING APPROACH FOR ANALYZING AND FORECASTING
BRENT AND WTI CRUDE OIL PRICES.**

A Dissertation by

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ABSTRACT

The economy plays a vital role in the growth of a country, with energy serving as a critical feature within it. Notably, crude oil exerts a significant impact on a country's economy as it can directly influence it. Various nations have faced bankruptcy due to insufficient foresight regarding crude oil prices, resulting in challenges such as difficulties in import-export of essential goods like health foods. This phenomenon is increasingly common in the present day, with numerous examples worldwide.

The dire situation at hand has gravely impacted numerous families worldwide, leaving them destitute and without access to basic necessities such as food and shelter. To address these issues, it is imperative to obtain accurate future price forecasts for major crude oil markets and prepare financially to face them. In this regard, a precise and fitting model is required to analyze and predict future crude oil prices for both Brent and WTI crude oils on a daily and weekly basis. Unfortunately, there are only a few studies that have attempted to predict both daily and weekly prices for crude oil. Therefore, the author has made a significant contribution by presenting a novel dataset that spans over ten years of past data for Brent and WTI crude oil prices, along with an ARIMA model for predicting prices on a daily and weekly basis.

The outcome of the project was exceedingly satisfactory, successfully achieving the primary aims and objectives by developing a precise model to predict the prices of primary types of crude oil.

Keywords: Crude oil, Price Prediction, ARIMA, Machine Learning, Crude oil types, Brent, WTI

Subject Descriptors: A.0: GENERAL, D.1.0: General, E.1: DATA STRUCTURES, D.2.1: Requirements/Specifications, D.2.2: Design Tools and Techniques, D.2.3: Coding Tools and Techniques, D.2.5: Testing and Debugging, D.2.10: Design