**STOCK PRICE PREDICTION**

**Abstract:**

Applied data science plays a pivotal role in enhancing the accuracy and effectiveness of stock price prediction models, enabling informed decision-making in financial markets. Data preprocessing is an essential step in applied data science for stock price prediction. It involves cleaning, normalization, and transformation of historical stock price data to make it suitable for modeling. Machine learning algorithms, including regression models, decision trees, and ensemble methods, are commonly applied in data science for stock price prediction. Deep learning techniques, such as recurrent neural networks (RNNs) and long short-term memory networks (LSTMs), have also gained popularity for capturing complex patterns in time-series data. Time-series analysis is a fundamental component of data science in this domain, as it allows for the modeling of temporal dependencies and seasonality in stock price movements. Additionally, the use of external data sources, such as news sentiment analysis and economic indicators, can further enhance prediction accuracy. Model evaluation and validation are critical to assess the performance of predictive models. Techniques like cross-validation and back testing are employed to measure predictive accuracy and robustness, ensuring that the models generalize well to unseen data. Furthermore, ethical considerations in applied data science for stock price prediction are emphasized, including the responsible use of automated trading algorithms and the potential impact on market stability.

Stock price prediction is a critical area in finance, and the application of data analytics in emerging markets, such as the Congo Stock Market, presents unique opportunities. The study begins by collecting historical stock price data, financial reports, and market-related information specific to the Congo Stock Market. Data preprocessing techniques, including cleaning and normalization, are applied to ensure data quality and consistency. Next, a range of data analytics approaches is explored, such as time series analysis, machine learning models, and sentiment analysis of news and social media related to the Congo Stock Market. These methods are tailored to the specific characteristics of the Congo market, which may exhibit different dynamics compared to more established markets. It also emphasizes the importance of feature engineering and model selection, highlighting the need to adapt algorithms to account for local economic conditions, regulatory changes, and geopolitical factors that can influence stock prices in the Congo.Additionally, ethical considerations in the context of data analytics and stock price prediction are discussed. It underscores the significance of responsible data handling, transparency, and fairness in modeling, particularly when dealing with financial data that impacts investors' decisions and market stability.This abstract showcases how data analytics can be harnessed to enhance stock price prediction in emerging markets like the Congo Stock Market. It underscores the need for a data-driven approach that respects local nuances and ethical principles to provide valuable insights for investors, policymakers, and financial professionals operating in such markets**.**