

Reflections

Predicting Gold Prices Using Machine Learning

This study's exploration of predicting gold prices using machine learning techniques reflects the significant potential of models like decision trees and linear regression for financial forecasting. Historical data, coupled with influential financial indicators such as oil prices and the US dollar index, serve as crucial inputs in these models, highlighting the complexities involved in capturing gold price dynamics (Singh & Gupta, 2024; Sadorsky, 2021). The study's methodological approach of preprocessing the data, applying feature scaling, and using hyperparameter tuning through cross-validation ensures that models like decision trees are optimized for higher accuracy (Priyadi & Santony, 2019). By leveraging both simple baseline models like linear regression and more advanced decision trees with tuned hyperparameters, the research demonstrates how machine learning techniques can handle the non-linear aspects of financial time series data (Manzoor & Rehman, 2023). Challenges in terms of computational complexity and missing data were overcome by using techniques such as imputation and model optimization, reflecting a robust approach to financial prediction. The study's findings underscore the importance of incorporating external economic indicators to improve the accuracy of gold price predictions, which can assist investors in navigating volatile markets (Ibrahim, 2022). The potential for future research includes expanding the model to account for additional economic factors or implementing ensemble methods for greater predictive power.