

FOREX trading algorithm

Nathan Gershteyn
Science & Engineering
Manalapan High School
Englishtown, NJ
425ngershteyn@frhsd.com

Nirvik Patel
Science & Engineering
Manalapan High School
Englishtown, NJ
425npatel@frhsd.com

Abstract

Our project is to develop an advanced automated foreign exchange trading system that uses machine learning and sentiment analysis to predict currency movements and execute profitable trades. We combined historical market data with real-time sentiment extracted from global news to provide a framework for making data-driven trading decisions. The core of the model is built using XGBoost, a gradient boosting algorithm, optimized to minimize losing trades while also reducing missed opportunities. Key features of the project include integrating advanced technical indicators such as moving averages, relative strength index, and volatility metrics, along with sentiment scores derived from news analysis. A phased exit strategy and decision matrix for trade signals ensure that trades are optimized to maximize profitability with constantly changing market conditions.

Index Terms

foreign exchange, FOREX, trading, algorithm, currency, news, sentiment analysis, XGBoost, gradient boost, moving average, relative strength index, volatility metrics, optimization