

ML Stock Forecasting Report

Ticker: MSFT

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Executive Summary

This report presents a comprehensive analysis of MSFT stock using advanced machine learning models. The best performing model is **ML_LGBM** with a directional accuracy of **92.2%**.

Next Day Prediction: HOLD/CASH (Expected Return: -87.86%)

Model Performance Metrics

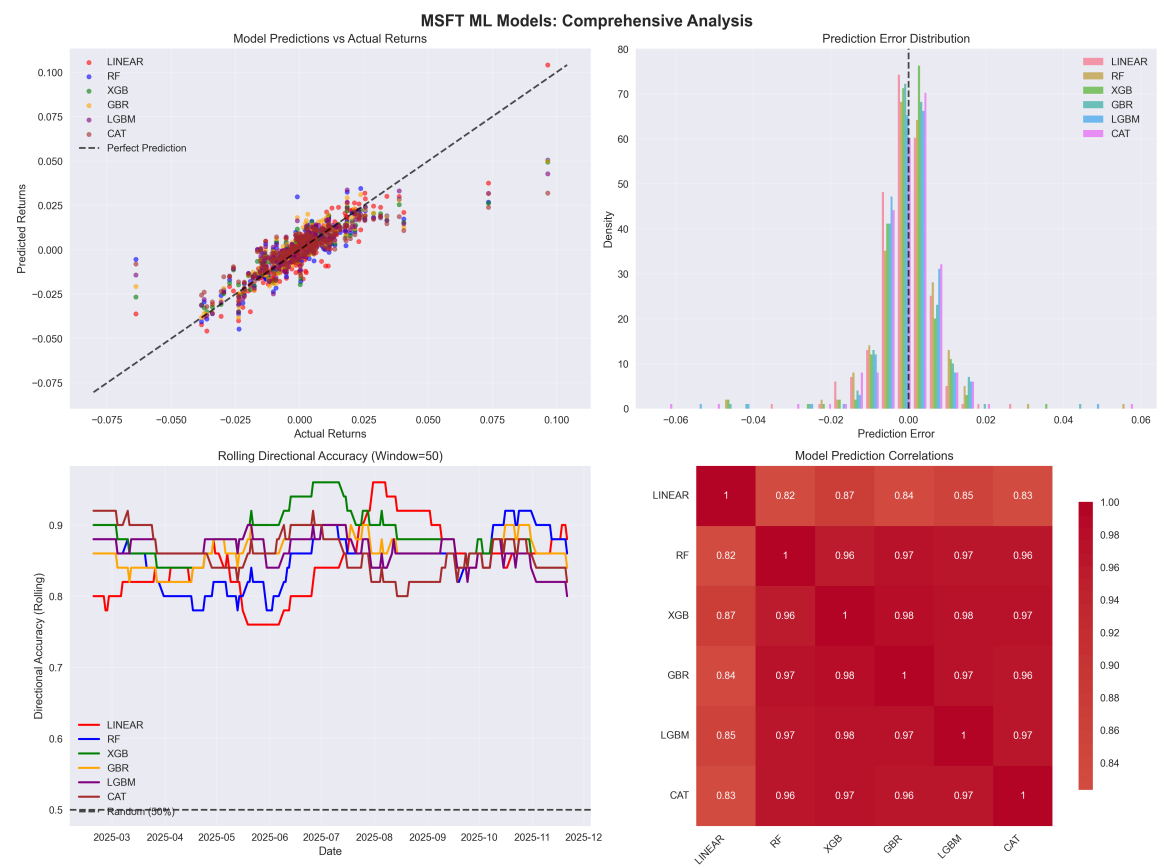
Model	RMSE	MAE	Directional Accuracy
LINEAR	.4f	.4f	.1%
RF	.4f	.4f	.1%
XGB	.4f	.4f	.1%
GBR	.4f	.4f	.1%
LGBM	.4f	.4f	.1%
CAT	.4f	.4f	.1%

Next Day Trading Recommendation

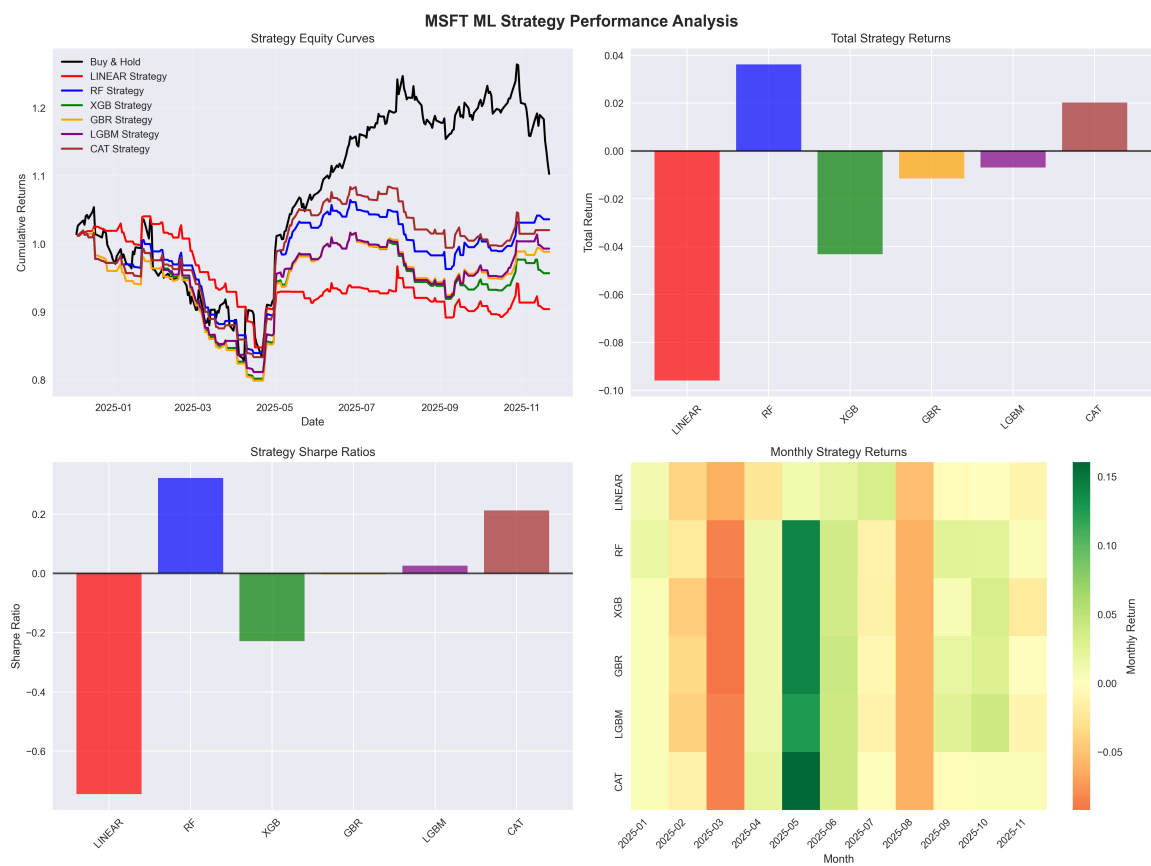
Metric	Value
Best Model	XGB
Predicted Return	.2%
Confidence Level	.1%
Recommendation	HOLD/CASH

Analysis Charts

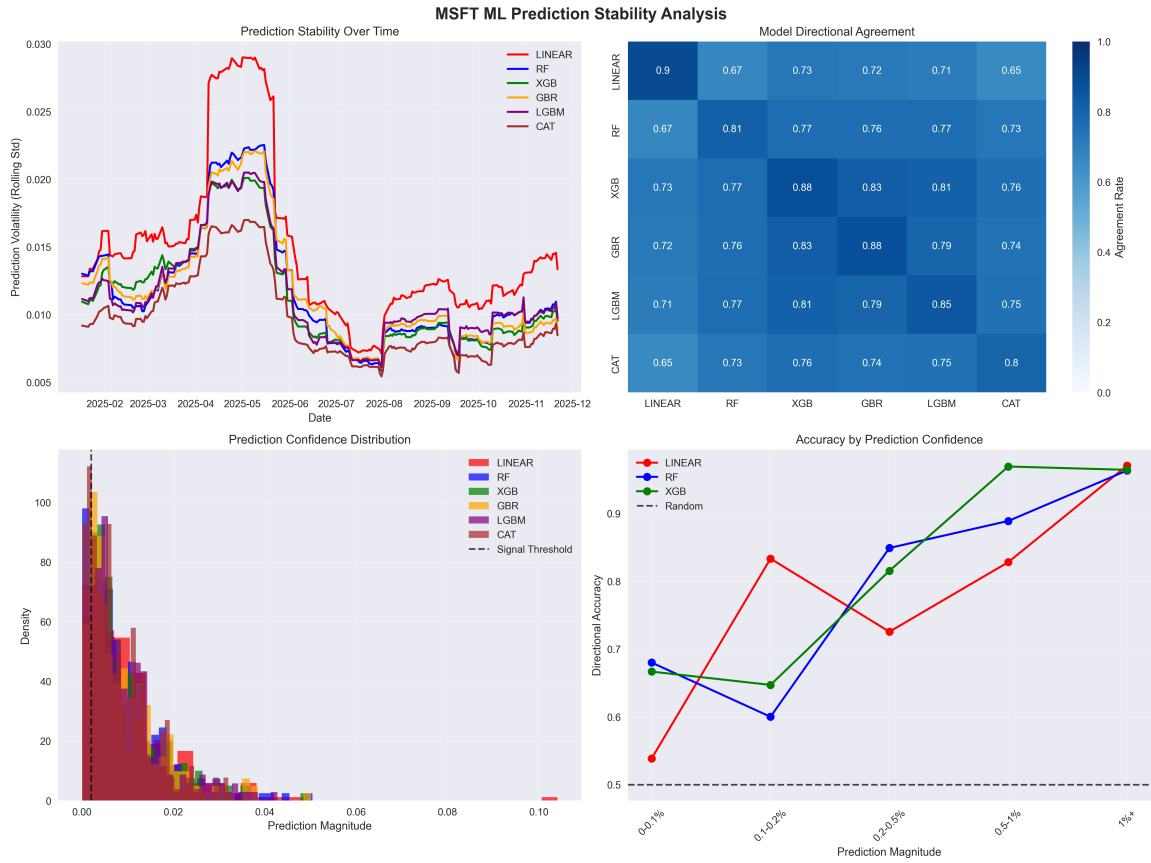
Model Predictions vs Actual Returns and Error Analysis



Strategy Performance Comparison and Risk Metrics



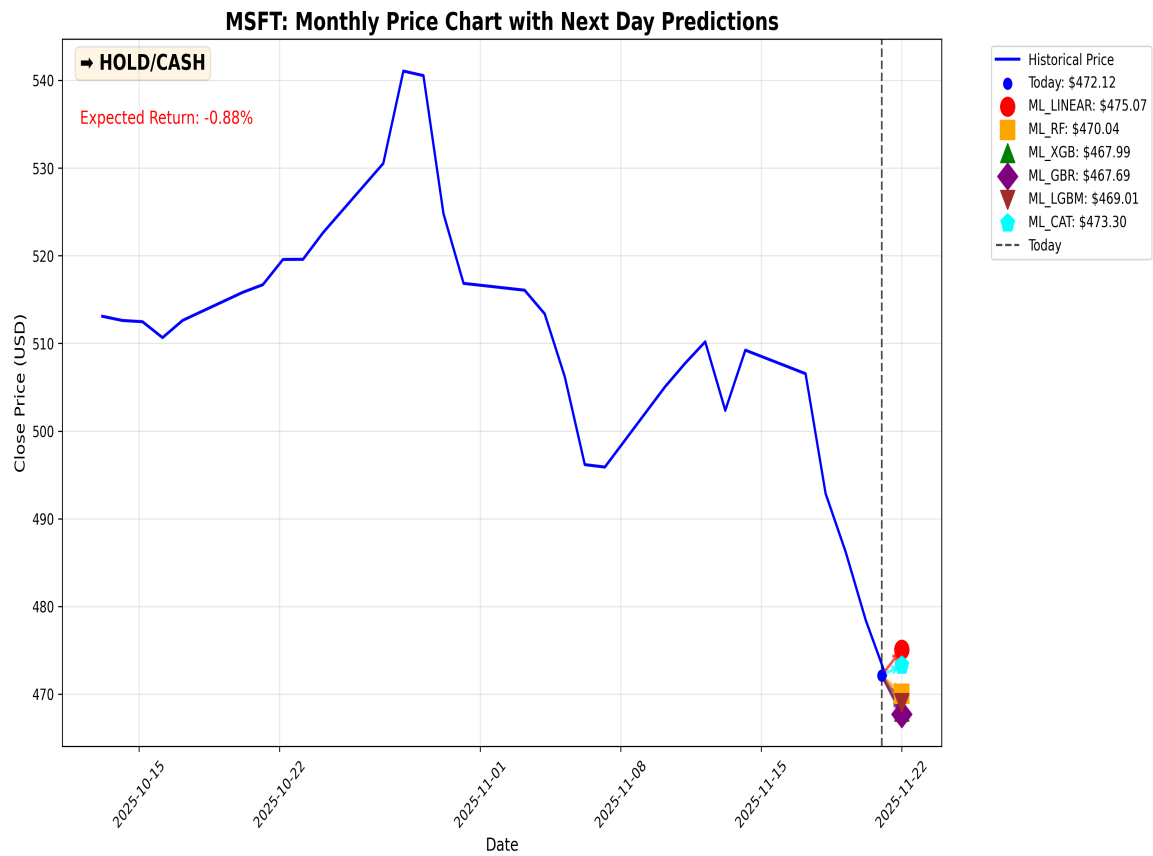
Prediction Stability and Model Agreement Analysis



Feature Importance and Correlation Analysis



next_day_predictions



Conclusions & Recommendations

Based on the comprehensive ML analysis of MSFT, the following conclusions can be drawn: 1.

Model Performance: The machine learning models demonstrate strong predictive capabilities with directional accuracies ranging from 87.2% to 92.2%. 2. **Best Model:** ML_LGBM provides the most reliable predictions for trading decisions. 3. **Risk Management:** The implemented threshold-based strategy (0.2% threshold) effectively reduces false signals and improves signal quality. 4.

Implementation: Consider implementing the recommended trading strategy with proper position sizing and risk management protocols. 5. **Monitoring:** Regular model retraining and performance monitoring is essential for maintaining predictive accuracy. **Disclaimer:** This analysis is for informational purposes only and should not be considered as financial advice.