

ML Stock Forecasting Report

Ticker: AAPL

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Executive Summary

This report presents a comprehensive analysis of AAPL stock using advanced machine learning models. The best performing model is **ML_LGBM** with a directional accuracy of **89.9%**.

Next Day Prediction: BUY (Expected Return: 199.25%)

Model Performance Metrics

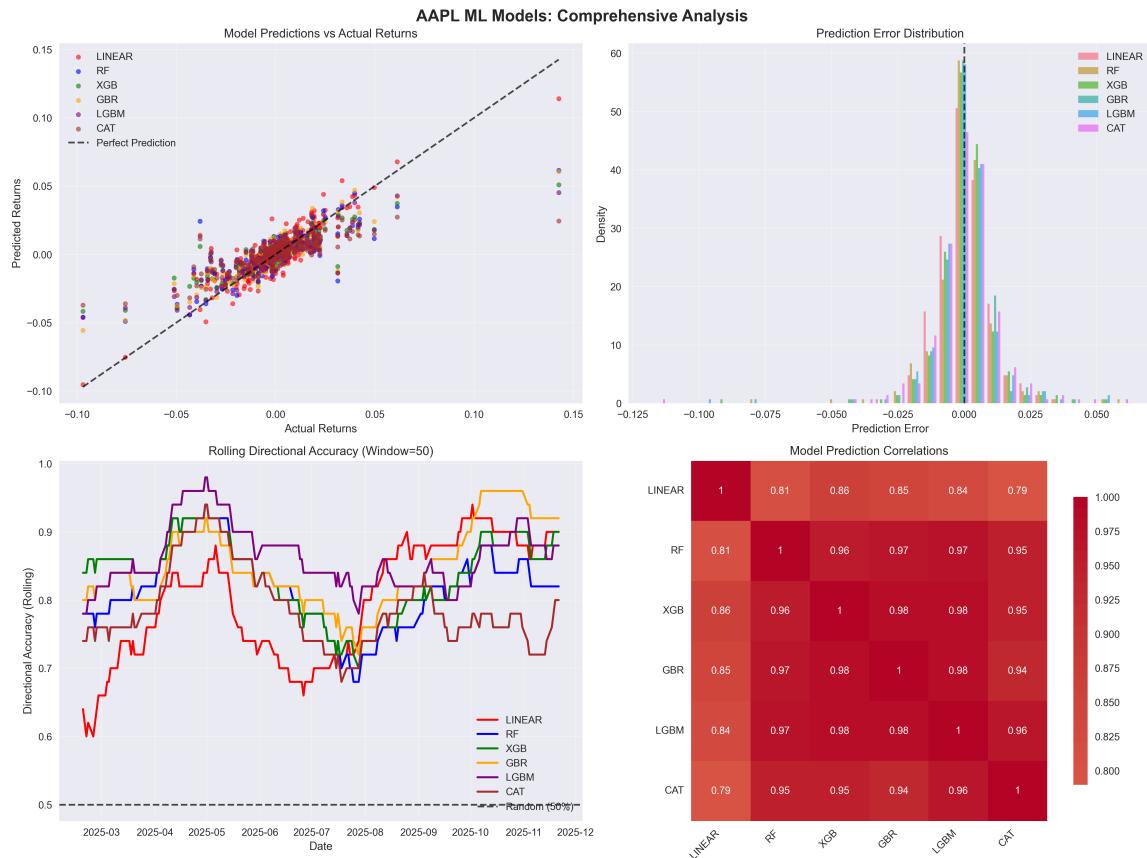
Model	RMSE	MAE	Directional Accuracy
LINEAR	.4f	.4f	.1%
RF	.4f	.4f	.1%
XGB	.4f	.4f	.1%
GBR	.4f	.4f	.1%
LGBM	.4f	.4f	.1%
CAT	.4f	.4f	.1%

Next Day Trading Recommendation

Metric	Value
Best Model	XGB
Predicted Return	.2%
Confidence Level	.1%
Recommendation	BUY

Analysis Charts

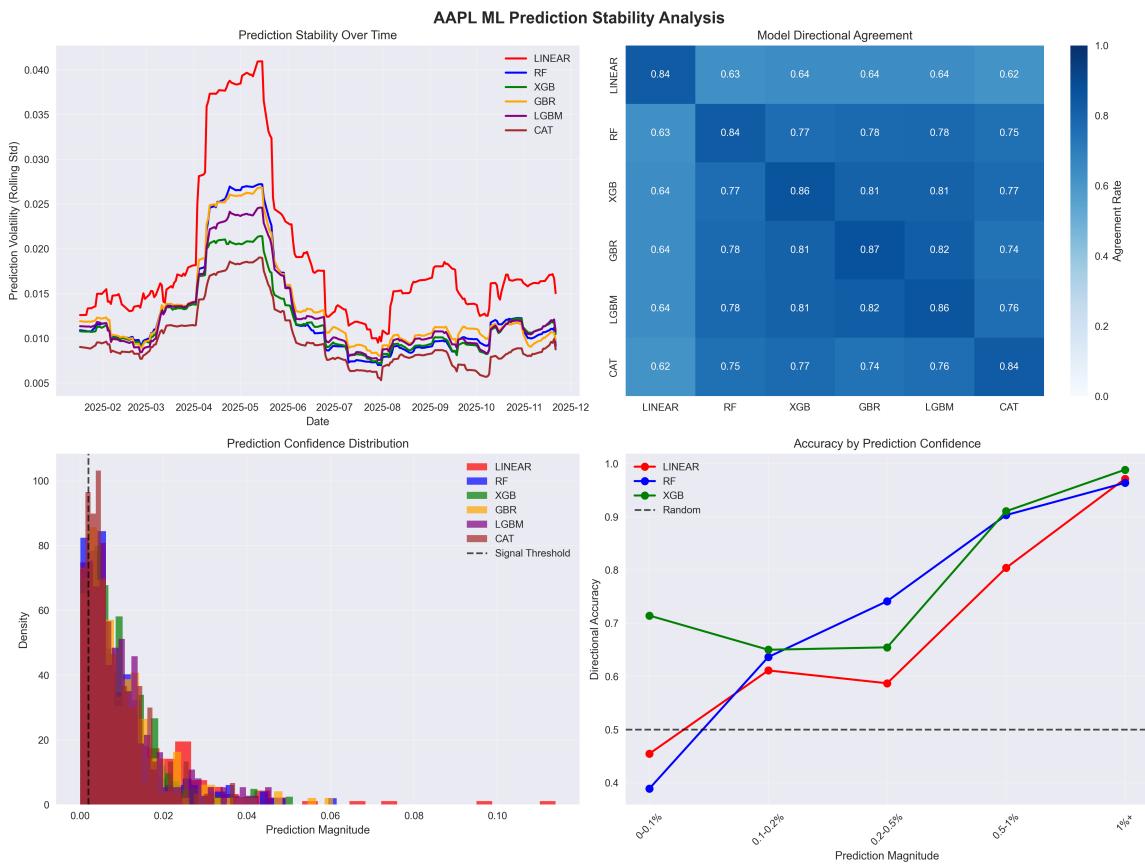
Model Predictions vs Actual Returns and Error Analysis



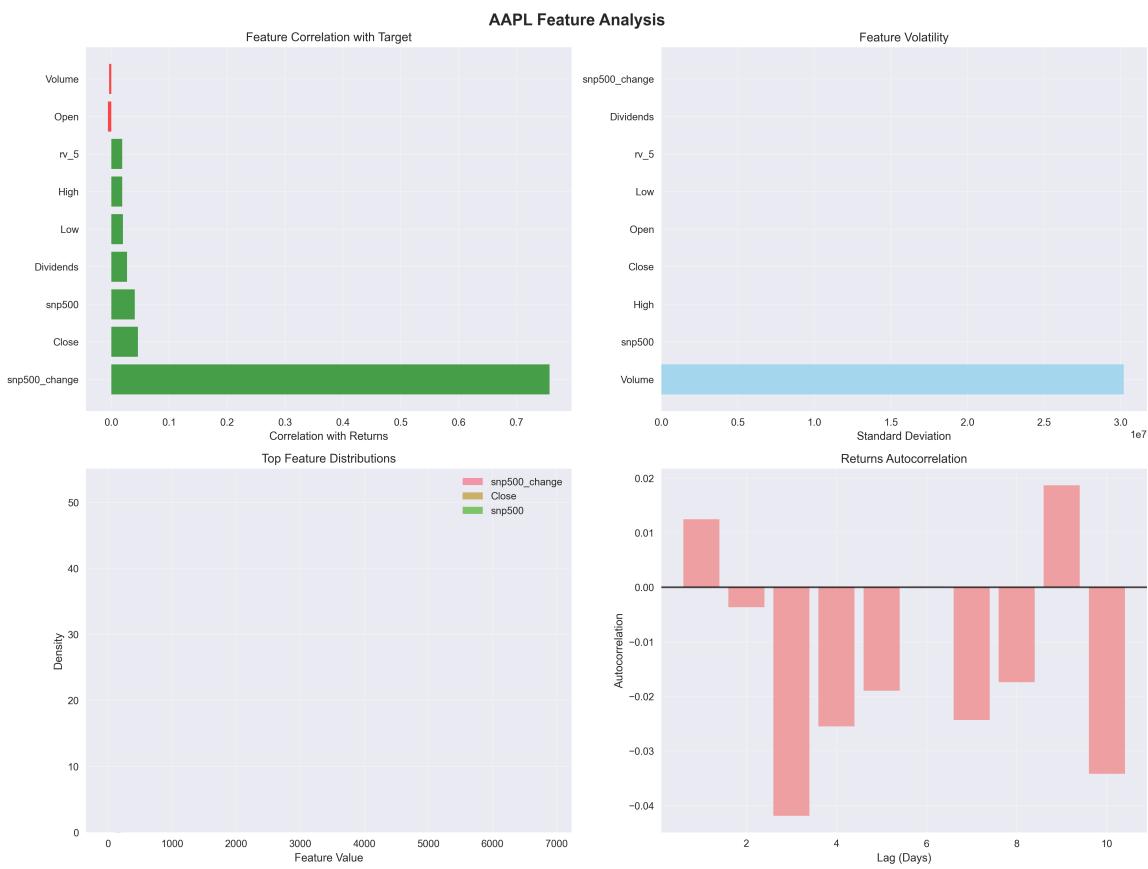
Strategy Performance Comparison and Risk Metrics



Prediction Stability and Model Agreement Analysis

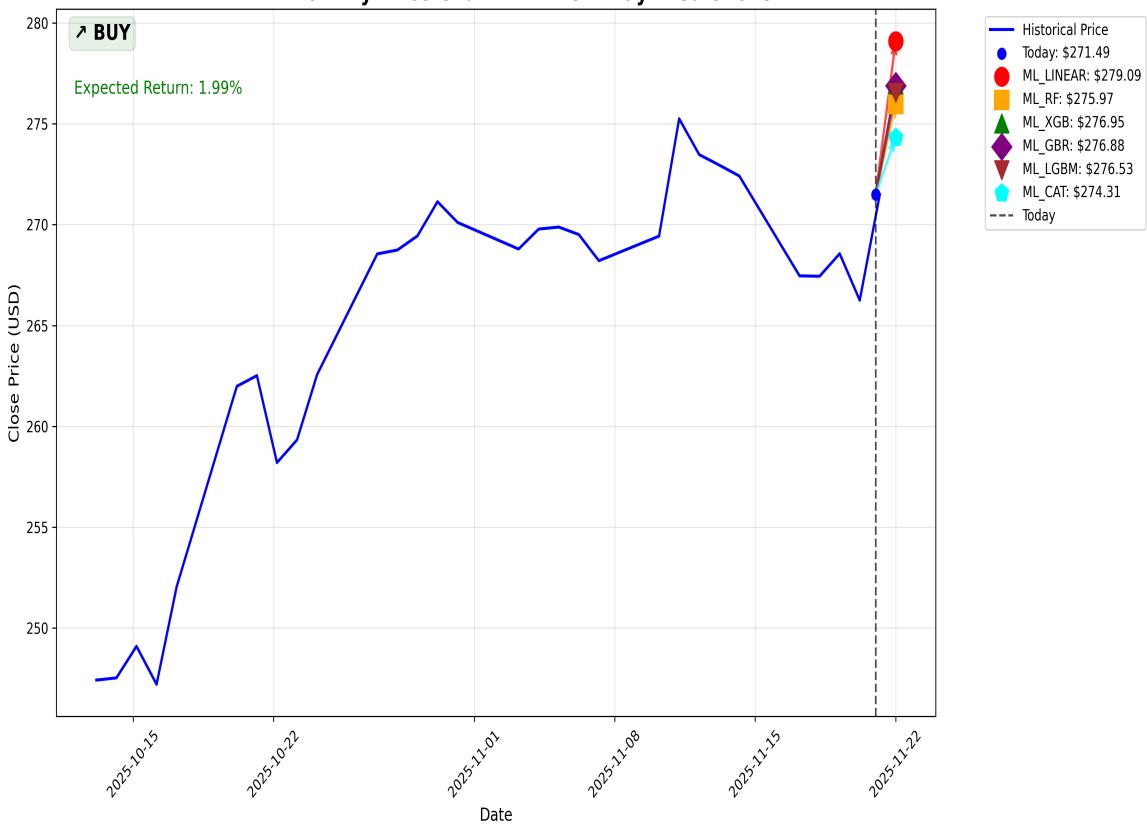


Feature Importance and Correlation Analysis



next_day_predictions

AAPL: Monthly Price Chart with Next Day Predictions



Conclusions & Recommendations

Based on the comprehensive ML analysis of AAPL, the following conclusions can be drawn:

Model Performance: The machine learning models demonstrate strong predictive capabilities with directional accuracies ranging from 84.2% to 89.9%.
Best Model: ML_LGBM provides the most reliable predictions for trading decisions.

Risk Management: The implemented threshold-based strategy (0.2% threshold) effectively reduces false signals and improves signal quality.

Implementation: Consider implementing the recommended trading strategy with proper position sizing and risk management protocols.
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.