

# ARIMA Short Term Prediction

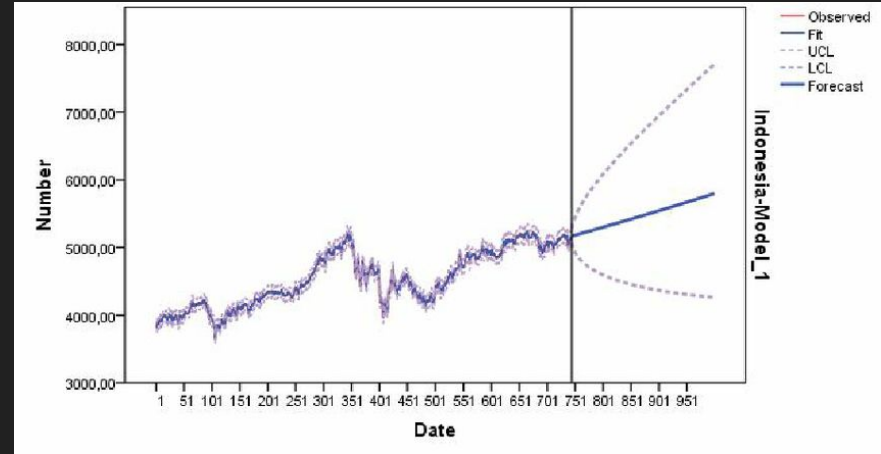
Chenxi Zhang

# Basic Idea

- ARIMA is a powerful technique for time series analysis and prediction
- Builds on ARMA with differencing

## Strategy

- Fit ARIMA every week to historical data
- Use prediction results to predict future values
- Based on <https://blog.quantinsti.com/forecasting-stock-returns-using-arma-model/>

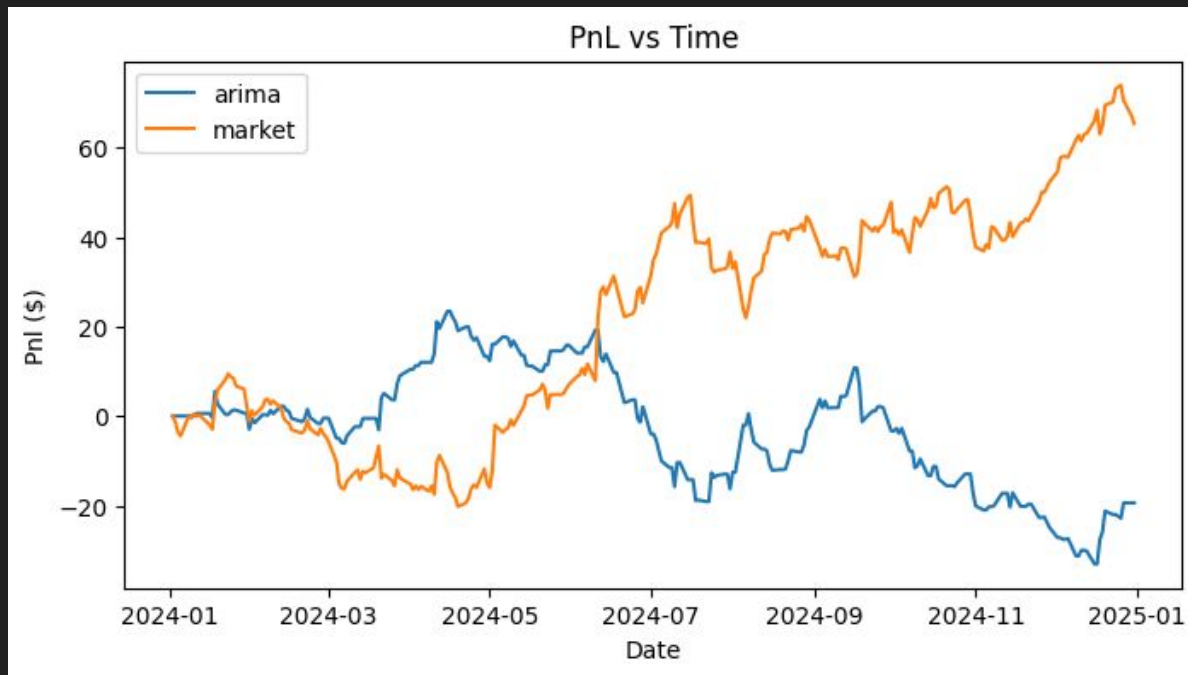


Typical ARIMA Forecast

ARIMA was fit every week on AAPL for 1 year, each fit used 800 days of historical data

ARIMA would attempt to predict the next closing price

Position limit of 1 share



# Conclusion

- Final PnL: \$-19.43
- ARIMA is a powerful technique, but needs more effort and likely higher quality data
- Note that ARIMA was outperforming market for a few months, so a more refined strategy could potentially have positive return