Backtesting

Background/Use

1. Used to assess the viability of of trading strategy on historical data
    a. Performance on historical data can estimate performance in future
2. Similar to machine learning model:
    a. Divide data into training and test
    b. Use training data to tune “hyperparameters” but don’t overfit!
    c. Test final model on test set
3. Things to account for:
    a. Include companies that went bankrupt, etc.
    b. Factor in trading costs
    c. Decide whether to include rare events (stock market crash)
4. Metrics collected from backtesting:
    a. Want at least 30 trades simulated for statistical significance
    b. Gain Profit/Gross Loss (Total Net Profit = Gain Profit - Gross Loss)
    c. % Profitability
    d. Max Drawdown
    e. Sharpe Ratio: measure risk-adjusted performance
        i. Assumes normal distribution

TODO (this is an important concept so everyone needs to do these):

1. Read about backtesting
2. Do research on how the simulation is run
3. Research how to implement it (Python or C++) - we will start implementation next week!
4. Fill out the feedback form!

Resources

- https://www.investopedia.com/terms/b/backtesting.asp
- https://blog.quantinsti.com/backtesting/
- Chapter 1 of Algorithmic Trading by Ernest Chan (let me know if you don’t have the book)
- Quantopian