FINA4380 Outline

1. Strategy Design

Signal Generation

- Factor Selection
  - Fundamental:
  - Statistical:
  - Macro:
- Construction of Factor Return
  - Non-negative Matrix Factorization (NMF)
    - Dimension deduction, construct statistical factor
    - Macro
  - Quantile Approach: (Fundamental)
  - Information Coefficient (IC)
    - filter low correlation factors
- Kalman Filter
  - State Variables: Factor Exposure (β)
  - Observed Variables: Asset Return
  - Output: Expected Future Return

Portfolio Construction

- Long x quantile, Short $1-x$ quantile. x is determined by optimizing Sharpe ratio.

2. Backtest

Data

- Bloomberg

Tool

- Backtrader

Performance Evaluation

- VaR, Max Drawdown, Sharpe Ratio, Cumulative Return