Financial AI

Homework 7

Due at 06:00 pm (Korea Standard Time) on Saturday, November 12

Submit one file: written solutions with executable Python code

Problem 1. Portfolio of momentum, liquidity, and fundamental factors with dollar neutral and sector neutral strategies. Download the daily adjusted closing price, liquidity, and fundamental data for the stocks in constituents.csv from June 11, 2012, through September 30, 2022. You can download this from Yahoo Finance in Python.

(a)   Use the momentum, liquidity, and fundamental signals to construct the portfolio that rebalances on the day you choose. For each factor, choose data freely from yfinance(https://pypi.org/project/yfinance/). The portfolio should be a long-short portfolio based on the signals and neutral strategies. Use the weighting strategy freely. (hint. A sector neutral strategy would be to determine the long short by grouping the sector. If it is difficult, exclude it and solve.)
(b)   Return the weights, Sharpe Ratio, and Turnover for the portfolio in (a)

Problem 2. LeetCode and HackerRank

(a) Solve and Submit LeetCode : 232. Implement Queue using Stacks
(https://leetcode.com/problems/implement-queue-using-stacks/)
(b) Solve and Submit HackerRank : Day 18: Queues and Stacks
(https://www.hackerrank.com/challenges/30-queues-stacks/problem?h_r=internal-search)
(c) Solve and Submit HackerRank : Recursion: Fibonacci Numbers
(https://www.hackerrank.com/challenges/ctci-fibonacci-numbers/problem?h_r=internal-search)