SEONGMIN JO

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EDUCATION

Sungkyunkwan University Seoul, Korea
Bachelor`s degree of Global Economics and Mathematics ***GPA 3.8/4.5*** 3/20 – 10/26

- ***Coursework:*** Statistical Analysis for Economics, Intermediate Macroeconomic, Intermediate Microeconomic, Mathematics for Economics, Linear algebra*, Calculus I*, II*, Econometrics*, Financial Econometrics*, Financial Management, Statistics*
- ***Leadership: Head and Principal of FBA Quant student research group***
  Student research association which aims to study quantitative finance research papers, develop a quant project using Python and C++, and micro-structuring equity market using machine learning models

**denotes course of fall 2021*

RESEARCH/PROJECTS

DB Investment Competition 6/21– 8/21

- Virtual investing competition based on allocating assets in global ETFs and managing a portfolio for high profit
- Developed back-testing tool for allocating global ETF using PyPotfolioOpt library in python and optimized the portfolio following momentum and maximizing Sharpe ratio

DB Financial Competition 2/21 – 4/21

- Preprocessed 10-K/Q document from SEC and applied NLP techniques (dictionary approach with Loughran and Mcdonald wordlists and TF-IDF*/Cosine similarity) on MD&A sector to extract sentiment score
- Examined correlation and cointegration between sentiment score and ETF of KOSPI 200 categorized by same GISC sector to predict Korean stock market using sentiment of 10-K/Q

** TF-IDF: Term Frequency–Inverse Document Frequency*

BTC Trade Automation 11/20 – 12/20

- Automized bitcoin trading based on volatility break out system using Upbit API to assess the capacity of strategy
- Tuned hyperparameter K* adaptive to various market conditions and enhanced trading strategy by considering moving average line to trade in only raising market

** K: the coefficient of fluctuation*

EXPERIENCE

QRAFT TECHNOLOGIES Seoul, Korea
Reinforcement Learning Research Assistance 6/21 – 9/21

- **Offline RL:** Demonstrated that offline reinforcement learning can eliminate the need for market simulators for agent learning and reproduced all algorithms of offline reinforcement learning thesis to find the best algorithm for optimal execution
- **State Feature Selection:** Researched not only Natural order book-based state variables such as Signed Transaction Volume but also daily basic financial statement
- **RL Seminar:** Presented basic concept of reinforcement learning and SOTA algorithms for people who are not familiar with reinforcement learning every week

FBA Quant Student Research Group Seoul, Korea
Head of Market Microstructure 1/21 – Present

- **Optimal Execution:** Simulated a trading environment of Almgren and Chriss model and the optimal trading trajectory/list, tuned hyperparameters like risk aversion based on the optimal trade strategy to reduce implementation shortfall
- **Reinforcement Learning:** Exploited DDPG algorithm to generate optimal trading trajectories and compare with the benchmark of Almgren and Chriss model

Student exchange between Korea and Germany to foster unification leaders in the era of peace *(1/19)* Berlin, Germany

- Awarded first prize in province thesis competition about unification and granted two weeks of the government-funded exchanging student with Luther Melanchthon Gymnasium in Germany as local presentative
- Cooperated with HEKO (Germany Adult Unification club) and wrote a thesis about minimizing the cost of Korean unification by analyzing German precedent

COMPUTATIONAL SKILL/OTHERS

- Programming Language: Python
- Affiliations/Certifications: TESAT first-rate
- Languages: English (Intermediate), Korean (Native)
- Interests: StarCraft I, Reinforcement Learning, Market Microstructure