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

- ***Relevant Coursework:*** Statistical Analysis, Intermediate Macroeconomic, Intermediate Microeconomic, Mathematics for Economics, Linear algebra*, Calculus I*, 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 thesis of offline reinforcement learning to find the best algorithm for optimal execution
- **Feature Selection:** Researched Natural order book-based state variables such as Signed Transaction Volume and daily basic financial statement for modeling state feature
- **RL Seminar:** Presented basic concept of reinforcement learning and various 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:** Modeled trading simulation environment under the Almgren-Chriss framework and visualized trading list and trading trajectory of trade execution algorithm, Tuned hyperparameter like risk aversion of trader
- **RL:** Simulated deep deterministic policy gradient (DDPG) algorithm and computed average realized implementation shortfall to demonstrate advantage over benchmark model, Almgren-Chriss model, in terms of transaction cost

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)