SEONGMIN JO

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EDUCATION

Sungkyunkwan University Seoul, Korea

Bachelor`s degree of Global Economics ***GPA: 3.8/4.5*** Mar 2020 **–** Aug 2024

- Leadership: Head of Market Microstructure, FBA Quant Student Research Group, May 2021 – Present

RESEARCH/PROJECTS

2021 DB GAPS Investment Competition May 2021 – Present

- Developed backtesting tool to access the capacity of portfolio optimization based on mean-variance optimization strategy, risk parity related strategies, and conventional 60/40 portfolio to advance sharp ratio

2021 DB Financial Economics Competition Jan 2021 – Mar 2021

- Crawled 10-K/Q document from SEC and preprocessed filling data by removing HTML tags and lemmatizing
- 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

MD&A denotes Management Discussion and Analysis*

TF-IDF denotes Term Frequency–Inverse Document Frequency*

BTC Trade Automation based on Volatility Breakout Strategy Nov 2019 – Dec 2020

- Automized and backtested 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
- Boosted order method of trading to reduce order failing by selling IOC best order and buying FOK best order

K denotes the coefficient of fluctuation*

COURSEWORK/SKILLS

- **Mathematics**: Mathematics for Economics, Number theory*, Linear algebra*
- **Statistics**: Statistical Analysis for Economics, Mathematical Statistics*
- **Finance**: Financial Derivatives*
- **Economics**: Intermediate Macroeconomic Theory, Intermediate Microeconomic Theory, Econometrics*
- **Programming languages**: Python

**denotes 2021 fall course*

EXPERIENCE

FBA Quant Student Research Group Seoul, Korea\

Head of Market Microstructure May 2021 – Present

- **Multi-Agent DDPG**: Simulated physical deception scenario of Open AI based on multi-agent DDPG in competitive scenarios; identified that setting good agent to order and adversary to cancel the order in competitive scenarios based multi-agent DDPG can improve order execution action

Member Jan 2021 – Present

- **Optimal execution:** Visualized and simulated the optimal trading trajectory/list and trading environment of Almgren and Chriss model, tuned different model parameters based on the optimal trade strategy, and implemented trading list to calculate implementation shortfall
- **Reinforcement Learning:** Exploited DDPG algorithm to generate optimal trading trajectories and benchmarked against the Almgren and Chriss model
- **Portfolio optimization**: Computed random portfolios and efficient frontier and constructed sharp optimum portfolio and capital asset pricing model from the sharp optimum portfolio in Excel

Student exchange between Korea and Germany to foster unification leaders in the era of peace. Jan 2019

- 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 Unification) club and wrote a thesis about minimizing the cost of Korean unification by analyzing German precedent

ADDITIONAL INFORMATION

- Languages: Korean (Native), English (Intermediate)
- Interest: Interval running