MINSU YEOM, CFA, FRM

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Candidate for Master of Science in Data Science with background in financial quantitative analysis and computer science. 8 years of experience in global portfolio management, quantitative research, and risk modeling. Ranked #1 vs institutional peers for managing ETF portfolio which outperformed benchmark. Skilled in applying machine learning and deep learning models to analyze financial data for forecasting, portfolio management, and designing trading strategies.

EDUCATION

Columbia University in the City of New York Expected Dec 2019
M.S. in Data Science, GPA 3.5

- Courses in Machine Learning (ML), Bayesian ML, Reinforcement Learning, Deep Learning, NLP, Algorithms, Statistical Inference.
- Research Area: Variational Inference, Hierarchical Structure

Korea University, College of Informatics, Seoul, KR Aug 2006
B.S. in Computer Science and Engineering, GPA 4.1/4.5

The University of British Columbia, Vancouver, CA Sep 2004 – Apr 2005

- Selected as top 2 out of 80 Korean students for exchange student program

WORK EXPERIENCE

Korea Investment Management, Seoul, Korea, 2010 – 2018
Hired as Risk Manager in 2010, performing risk management for hedge fund investments starting in 2012. Solely responsible for designing risk management system. Top-ranked Portfolio Manager overseeing ETFs portfolio.

Portfolio Manager, 2013 – 2018

- **Ranked #1 out of 5 institutional peers**. Managed portfolio of ETFs since 2014. **Outperformed benchmark by 4%** with IR of 2, annualized. Senior PM in charge of 5-person team. **Grew AUM to over $1 billion** USD.
- Built quantitative model (DM/EM allocation). Generated alpha via macro, fundamental analyses and sector investments.
- Managed SMA by delegating PM roles to 10+ sub-managers globally through RFP process.
- Created statistically reliable investment cycle indicator using time-series analysis with EViews.

Risk Manager, 2010 – 2013

- Evaluated portfolio performances using Brinson and factor-based attribution, covering equity funds and hedge funds.
- Analyzed portfolios' ex-ante risk through lens of multi-factor models provided by BarraOne and Bloomberg PORT.
- Authored due-diligence report on 9 New York hedge fund managers. Evaluated managers on 5 factors including NAV pricing, operational risk, and fund structures.
- Specified risk management system requirements for hedge fund investments after they were legalized in South Korea in 2012. Wrote and developed risk management modules for Volatility Decomposition, VaR Analysis, and Performances and Risk Reports.

PROJECTS

Adversarial Reinforcement Learning for Portfolio Management

- Simulated competing investment strategies through continuous refinement in virtual stock market setting. Strategies based on Reinforcement Learning algorithms adjusted weights to different stocks over time to maximize profits.
- Used Deep Neural Network to represent Actor-Critic network, which takes input of stock prices and portfolio weights, and outputs vector of portfolio weights.
- https://github.com/my2582/Adversarial-RL

Forecasting P/E Ratios in Small-Cap Tech Sector using Deep Neural Networks

- Built RNN to forecast forward Price-to-Earnings ratios in small-cap technology sector using TensorFlow.
- Collected fundamental data in financial statements such as balance sheets and income statements, and stock price momentum via Wharton Research Data Services (WRDS), Center for Research in Security Prices (CRSP) and Compustat.
- RNN significantly outperformed current methods for forecasting P/E ratios with a **65% improvement in MSE**.
- www.github.com/my2582/predicting-per

SKILLS & TECHNOLOGIES

Modern programming languages: Python, C/C++, Java, R.
Machine Learning: regression, clustering, classifications, feature engineering, deep learning, reinforcement learning, NLP
Open Source: TensorFlow, PyTorch, scikit-learn, D3, Bokeh, Pyro, OpenAI Gym, XGBoost
Quantitative Modeling: VaR, stress testing, operational risk, interest rate risk, securities pricing, probabilistic programming