Dongbing Han

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Education Background

Columbia University, Fu Foundation School of Engineering and Applied Science — New York, USA
Bachelor in Computer Science, Combined Program, GPA: **3.63/4.00** — 09/2021-06/2023

Dickinson College — Carlisle, USA
Bachelor in Mathematics and Quantitative Economics, GPA: **3.94/4.00** (Mathematics: **4.00/4.00**) — 09/2018-06/2023

- Honors: Alpha Lambda Delta, Dean's List (Fall 2018, Spring 2019, Fall 2019, Fall 2020, Spring 2021) The Henry P.Cannon Memorial Prize in Mathematics (Awarded to #1 Sophomore)

Core Courses:

- Data Structure, Advanced Programming, Introduction to Databases, Artificial Intelligence, Cloud Computing, and Big Data, Software as a Service, Applied Machine Learning, Computer Vision, Intermediate Micro & Macro, Econometrics, Accounting and Finance, Multivariable Calculus, Probability and Statistics I&II, Numerical Methods, Abstract Algebra, Real & Complex Analysis, Time Series Analysis, Stochastic Models, Partial Differential Equation

Programming Project Experience

Online Repair Report Platform (COMS 4152 Engineering Software-as-a-Service) — 10/2022-11/2022

- Implemented an Online Repair Report System based on Rails framework in Ruby, responsible for the modules including login, uploading, updating, sorting, deleting and function of generating and scanning QR code with location information; completed functional, unit, and integration tests (Cucumber and RSpec) for application quality assurance and database migrations with Ruby on Rails and ActiveRecord

Columbia Exchange Platform (COMS 6998 Cloud Computing and Big Data) — 03/2022-05/2022

- Developed a campus second-hand goods trading website based on the AWS platform and received widespread attention; the project used S3, Cognito, SES/SNS, CloudWatch, RDS (connecting with MySQL database), etc.
- Responsible for the development of web modules, including product uploading, modification, searching, and deletion

Squid Game (COMS 4701 Artificial Intelligence) — 11/2021-12/2021

- Employed Python and adversarial search algorithm to implement a Squid Game which is required to defeat the other group's code; we defeated eight of ten opponents. The game is a two-person game on a 7x7 board; every turn, a player moves and then throws a trap; to win, you must trap your opponent such they can't move before they trap you

Professional Experience

CITIC Securities Co., Ltd. — Shenzhen, China
Summer Intern, Investment Banking Department — 06/2021-07/2021

- Participated in the due diligence of an IPO project of an IC company, independently wrote a draft of an Equity Financing Business Plan, Feasibility Study and Investment Decision Report and accepted by associates
- Assisted in financial verification, employed comparative valuation (P/B, P/S, EV/EBITDA) and based on the assumptions of WACC, FCFF and CAPM, assisted analysts in initially establishing a DCF model to predict the company's financial status in the next 5 years

China Merchants Securities Co., Ltd. — Shanghai, China
Winter Intern, Industry Research Department — 12/2020-01/2021

- Independently analyzed photovoltaic glass and lithium industries, collected, and sorted out various data by Wind and Hibor.net and completed the industry research reports and presentations
- Analyzed macroeconomic events and trends (e.g. Annual Government Work Report and Central Economic Work Conference) and monitored industry downside risks and industry swings

Academic Project Experience

Financial Markets and Portfolio Research — 06/2022-08/2022
Online Workshop Instructed by Prof. Alexei Chekhov, Columbia University

- Performed the Markowitz model and the Index model with ten stocks twenty years price data to find the regions of permissible portfolios with additional five constraints
- Concluded that the Index model tends to have higher returns in low-risk areas when seeking efficient frontier and lower returns when seeking inefficient frontier; the Markowitz model performs better in finding risk-efficient portfolios for all constraints; the Index model may be better than the Markowitz model since it minimizes estimations (the correlation between stocks) by linking them to a single index

Returns and Volatility in Chinese and U.S. Equity Markets in the Context of Fed Rate Hikes — 07/2022-09/2022
Paper accepted by 2022 International Conference on Portfolios, Global Marketing and Economic Environment

- Analyzed the Returns and Volatility in Chinese and U.S. Equity Markets in the Context of Fed Rate Hikes by employing a VAR model, and an ARMA-GARCH model in Stata
- The research result shows a slightly negative net effect induced by a higher exchange rate on the Chinese stock market and a negligible influence on the US stock market in the premise of short-term price rigidity and omitting other potential outside variables

Additional Information

- **Computer Skills:** Skilled at of C/C++, Python, MATLAB, Java, Ruby, HTML/CSS/JavaScript, R/R-studio, Assembly (Mips), MySQL/PostgreSQL, Stata, Racket, Prolong, Minitab, Latex
- **Tools & Frameworks:** Amazon AWS, Git, Linux, Figma, Google Cloud, Vim, Pybullet, React, Flask, Bootstrap, etc.
- **Certificates:** Udemy, C++ Programming, Quantitative Finance & Algorithmic Trading in Python; Coursera, Introduction to Data Science in Python, Introduction to Financial Engineering and Risk Management.