

Graduate Statement of Purpose

Since I was child, I have been interested in finance industry especially investment. Because of my interest in investment, I started investment when I was in high school. At the first time, I got interested in investment method using business analysis with financial statements analysis. However, while I was investing in financial products such as stocks and options, there were many situations that I felt necessity of quantitative approach.

During sub-prime mortgage crisis, I experienced huge decline in stock markets and my return of portfolio decreased sharply. Because of this experience, I wanted to prevent huge loss of my portfolio during my investment period. Thus, when Euro Zone crisis happened, I tried to hedge risk of my portfolio with derivatives. Also, I tried to implement risk-neutral strategy such as long short stocks strategy to protect my portfolio return from huge loss due to unexpected crisis. While implementing risk-neutral investment and hedge strategies, I realized the necessity of deep understanding of derivatives and risk management.

Optimization was another issue that I felt necessity of quantitative approach. During my investment period, I have always confronted with problems of how to optimize portfolio return with low risk. However, I could not get ideal answer from financial statement analysis. Thus, I got more interested in quantitative approach in finance. This is why I apply for Columbia University financial mathematics program.

Columbia University is my best option because of its prestigious reputation for math and finance. Also, great location for getting job and flexibility of course selection are other reasons that why I love to apply for Columbia financial mathematics program.

Since, I have always interested in investment, I want to learn more about quantitative approach for asset management at Columbia University. For instance, I want to learn more about risk management for asset management. After experiencing huge crises during my investment period, I felt importance of risk management when it comes to portfolio management. Thus, I want to prepare myself as a better portfolio manager by deeply understanding risk management. Also, I want to study more about financial derivatives and many investment and hedging strategies using derivatives. While I was taking financial derivatives classes during my undergraduate study, I got chance to simulate derivatives trading strategies by using real data from Bloomberg and I got interested in trading strategies using derivatives. Moreover, I want to study more about quantitative investment strategies for diverse asset classes such as commodities and currency. My interest areas are not bounded to these subjects. Credit rating is another area that I want to study more. During EURO Zone crisis, I got interested in idea of investing credit spread and it would be really interesting to learn more about credit rating and investment strategies using credit rating.

To learn about finance industry, I worked as a statistics assistant for business analysis at the central bank of Korea. Also, I am currently working as a research assistant at one of the best credit rating firms in Korea.

To study quantitative finance, I not only take many finance and economics courses but also honed my quantitative skills by taking from basic math courses such as calculus to advanced math courses such as probability theory and differential equation. Also, I passed FRM exam for further understanding about quantitative approach for finance. For preparation for programming skills, I studied MATLAB and objected oriented programming. Also, I simulated investment strategy by using C language. To strengthen my computer skills, I planned to study C++, VBA and other programming language such as R before I join the financial engineering program.

My career goal after graduation from Columbia University is to become an quantitative researcher for investment. Since, I have always interested in stock markets, I want to implement diverse stock investment strategy such as momentum strategy and long short strategy by using quantitative skills. Also, I got really interested in the idea of investing in credit spread of bonds after experiencing Euro zone crisis and noticing credit spread between high rated bonds and low rated bonds got bigger during crisis. Thus, it would be interesting to find investment opportunities with credit rating..

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