Patrick Ding

884 West End Ave Apt. 53, New York, NY 10025
patrickding00@gmail.com • 585-857-6949
Github: https://github.com/delimited0 • Website: http://delimited0.github.io/

Education

Princeton University, Princeton, NJ   June 2015
Degree: BSE in Operations Research and Financial Engineering, with Honors
          Certificate in Applications of Computing
GPA: 3.58
Coursework includes: Machine Learning, Bayesian Statistics, Regression and Time Series, Finance, Probability and Stochastic Systems, Algorithms and Data Structures, Optimization

Experience

AllianceBernstein, New York, NY
Associate, Multi-Asset Solutions   June 2015 – Present
Intern, Multi-Asset Solutions   June – August 2014
• Researched and developed factor return models for equity index options and variance swaps
  - Models guided investment decisions in accounts with billions of dollars in assets
  - Applied models to researching market timing and cross-sectional strategies
• Developed new Matlab infrastrucure for backtesting option strategies
  - Simulated strategies to submit for requests for proposal from institutions and managers
• Implemented Leisen-Reimer tree method for pricing American options
  - Enabled more accurate research and backtesting of ETF options

Educational Testing Service, Princeton, NJ   June – July 2013
Intern, Data Quality Services
• Applied reliability analysis using SAS to gauge exam administration and scoring quality
• Conducted survey to measure cost and time savings for ETS due to Data Quality Services
• Created prototype of web portal for showing data quality statistics using Twitter Bootstrap

Research

Predicting Equity Index Volatility with Text Information   September 2014 – April 2015
Senior Thesis
• Employed penalized linear models to deal with high-dimensional text data
• Applied Latent Semantic Indexing to retrieve informative low-dimensional features
• Found that some text sources can improve forecasts of equity index volatility

Effect of Bedrock Age on Earthquake Frequency   November 2011 – January 2012
Geoscience Seminar
• Analyzed USGS earthquake data, found no relationship between bedrock age and earthquake frequency

Projects

Artistic Choices of New York Philharmonic Conductors   August 2016 - Present
• Deployed R shiny app visualizing the top composers of NY Phil conductors

Topic Modeling the Daily Princetonian   April 2016 - Present
• Implemented Gibbs sampler in Rcpp for inferring Latent Dirichlet Allocation model to analyze topics in *Daily Princetonian* opinion articles and their comments

Skills

Computer: R (Rcpp, ggplot2, tm), Matlab, Python (beautifulsoup, Selenium), C, Java, Microsoft Office, SQL