

Dr. Wajahat Gilani

CONTACT INFORMATION	Rutgers Business School Newark & New Brunswick Rutgers University 100 Rockafeller Road, Room 5144 Piscataway, NJ 08854 USA	Tel: +1-718-702-6780 waj@business.rutgers.edu www.business.rutgers.edu/faculty/wajahat-gilani
TEACHING INTERESTS	<ul style="list-style-type: none">• Quantitative Value Models using R and Python• Business Analytics Programming (Python)• Business Intelligence (R)• Business Applications for Machine Learning (R)• Management Information Systems (SQL)• Web based Data Dashboard Programming (Python, fastAPI, SQLAlchemy)	
RESEARCH INTERESTS	<ul style="list-style-type: none">• Targeted Demographic Search with Big Data• Optimal Pivoting in Data-Driven Entrepreneurship• Bayesian Learning• Machine Learning Applications in Opportunity Discovery• Product-Market Fit Finance Modeling	
CITIZENSHIP	US Citizen.	
EDUCATION	<p>Ph.D., 2016, Rutgers University, Newark, NJ, USA.</p> <ul style="list-style-type: none">• Dissertation: <i>Optimal Investing in Illiquid and Incomplete Markets</i>• Dissertation Adviser: Professor Michael N. Katehakis• Area of Study: Management Science and Information Systems & Finance <p>Masters in Quantitative Finance, 2004 Rutgers University, Newark, NJ, USA.</p> <ul style="list-style-type: none">• Area of Study: Quantitative Finance• Specialization: Quantitative Research and Derivative Pricing <p>B.S., 2001 Rutgers University, Newark, NJ, USA.</p> <ul style="list-style-type: none">• Major: B.S. in Computer Science• Major: B.A. in Economics	
TEACHING EXPERIENCE	<p>Instructor</p> <p>Columbia University, School of Professional Studies, New York City, New York</p> <ul style="list-style-type: none">• Lecturing on applying analytics in a corporate setting. Topics ranging from finance to supply chain. <p>Assistant Professor of Professional Practice Instructor</p> <p>Rutgers University, Department of Management Science and Information Systems, Newark and New Brunswick campuses, New Jersey</p> <ul style="list-style-type: none">• Masters in IT and Analytics Advisor, and on the admittance board• Lectured Statistical Methods In Business• Hosted career info sessions for MISA and BITS organizations• Panelist at BAIT major introduction events• Presenter at MBA open house for MSIS department• Panelist and Financial Analytics Conference in Malaysia• Guest lecturer at La Salle University on the future of Financial Analytics and Big Data	<p>September 2019 - present</p> <p>September 2017 - present</p> <p>September 2012 - July 2017</p>

- Reipient of the 2017 Rutgers Business School Professor of the Year Award
- Lectured Business Research Methods
- Lectured Management Information Systems
- Lectured Information Systems Security
- Developed and Lectured the class Investment Modeling in R, including course materials
- Developed and Lectured the class Business Analytics Programming in Python for MBA students and MISA students new to programming, including course materials
- Developed and Lectured an R based version of the class Analytics in Business Intelligence for MBA students and MISA students new to programming, including course materials
- Attended MSIS Brown Bag Seminar
- Attended MSIS Department Seminar
- Advisor to students on Honors Thesis

Director of Data Analytics Labs (Independent Study)

January 2016 - Present

Founded the Data Analytics Labs with students to conduct entrepreneurial experiments using techniques learned in the B.A.I.T program

- Lectured at Seminars in the New Brunswick on data and entrepreneurship
- Lead workshops in New Brunswick on lean business development using the lean canvas framework
- Recruited Alumnis to mentor students on future projects
- D.A.L. Incubator Independent Study where working together with students, we launch their own web based businesses
 - **Bellemint** Initially an online community for make-up artists. The team used Instagram API and screenscraping to idenify target make-up artists and automatically created profiles, while sending them direct messages to tell them it happened. Unfortunately, due to changes in laws in Europe and the U.S., we had to pivot to becoming the hub on make-up and products that are infused with healthy ingredients. The goal is to release our own product under the Bellemint brand.
 - **Ace My Career** An online platform where students can find tutor who have taken the same specific class, with the same specific professor, with the idea that a fellow student who has already done well in the same course, can be a more effective tutor. In addition, the platform is meant to allow students to get help with their resumes and interviews from fellow students that have successfully completed and internships that the student is targeting. Currently, Ace My Career is active, but we are now pivoting to a search methodology, where a student submits the service they are looking for and our system searches possible people for them to network with.
 - **www.loftaway.com (Ended)** A membership based flight app used for people commuting be-tween states, using small regional charter planes. The team is going to use twitter feeds to identify and advertise people that use amtrak trains and Newark airport for business travel between states. We unfortunately ended the business because there were many competitors entering this field and our analytics wasn't going to give us a competitive advantage.
 - **www.coffejaunt.com (Ended)** A peer-to-peer coffee delivery service for a college campus. Students could be compensated for picking up coffee or small snacks for fellow students on their way to the same location. Although the idea had promise, we closed this project because the profit margins would be small and it required us to invest in a phone app that would take considerable amount of initial investment.

HARDWARE AND SOFTWARE SKILLS Computer Programming:

- Html, Java, R, VBA, SQL, Python (pandas, numpy, scipy, flask), Matlab, C, Visual C++, Ampl (CPLEX, LP Solvers), SAS, Perl, Scheme, JavaScript, Oracle, Sybase, Unix, and Kornshell

Quantitative Analysis:

- Numerical pricing techniques, multi-tier trees, matrices, iterative methods, R/S analysis, Continuous and finite stochastic simulations, Ampl optimizers, Monte-Carlo Simulations, Dynamic Programming and various time series

Desktop Editing and Productivity Software:

- Microsoft Office, OpenOffice.org, LibreOffice, Corel WordPerfect, Google Docs
- RStudio, Spyder, Pinegrow, TexStudio

Operating Systems:

- Microsoft Windows family
- Apple OS X
- Linux and UNIX

BOOKS	[1] (Pending) Quantitative Value Investing in R
PROFESSIONAL JOURNAL PUBLICATIONS	[1] (Pending) Trading S&P 500 ETF's using Neural Networks [2] (Pending) Re-thinking Project based Muni-Bonds: A case for revenue-based structures
AWARDS	<ul style="list-style-type: none">• 2017 Thomas Motts Jr., Rutgers Business School Professor of the Year Award.• Rutgers University MSIS Teaching Excellence Award for 2016-2017.• Rutgers University MSIS Teaching Excellence Award for 2018-2019.
ACADEMIC SERVICE	Panelist on Presenting the BAIT major to underclassmen, sponsored by BITS Presentation on Data Analytics to underclassmen interested in attending RBS , sponsored by BITS Presentation on MSIS for the Rutgers MBA Open House, sponsored by the Graduate Program Hosted career-night info session, sponsored by MISA
PROFESSIONAL EXPERIENCE	StrikeValuation , Investment Data Scientist, Princeton, NJ April 2008 to Present <ul style="list-style-type: none">• Designed, built, maintained and expanded the hedge-fund database for fundamental research data, investor/accounting data, and market price data in SQL Server using 3NF standards• Developed a platform for upstream data sourcing and transformation (using C#, stored procedures),and the integration into downstream data from 3rd party API (Bloomberg, Back-Stop, Enfusion), and the development of processing analytics on the accuracy of data processing• Lead data sourcing projects in collaboration with portfolio managers and researchers, to quantify the impact value of new data on research and models• Redeveloped legacy code into smaller modules that are easier to update for junior developers and easy to monitor for the analytics teams, the emphasis on a flexible platform that allows for quick updates and experimentation, while maintaining legacy processes• Build in C# and R, a stock screener for domestic and international stocks using fundamental ratios (ROIC, Earnings Yield, Current Ratios, etc.)• Developed an R program to calculate cost of capital, for stocks in all the major indices• Worked on implied volatility program in C# and R, using non-normal distributions• Built a C# program that connected to a 3rd party API to source fundamental loan data, and combine it with in house proprietary data to run monte-carlo simulations in the hedge-fund's proprietary simulator• Developed a daily exposure and performance system using SQL Server and MS Reporting services for a multi-strategy hedge fund

- Design and developed an alpha generation tool in Java, that utilized Earning Power Value and price volatility, to generate and backtest trading ideas

Citigroup, FX Derivatives Quantitative Analyst, New York, NY July 2007 to April 2008

- Purchaser Price Parity modeling, testing for reversion trends, auto-correlation
- Emerging market Early Warning System, constant monitoring of macroeconomic variables to ensure no outlier events are taking shape
- Time-series analysis, stationary/non-stationary, distribution analysis
- Short-term momentum strategies/long-term carry strategies
- FX linked commodity valuations based on short-term volatility

Libertas Partners, Quantitative Desk Analyst (CDO/CMBS/ABS), Greenwich, CT February 2006 to July 2007

- Developing basic models and simulations for pricing different HY bond strategies and CDO's
- CMBS DSCR analysis
- CDO OC/IC ratio analysis, coverage test analysis (geography, property type, etc)
- Collateral analysis (technical & fundamental), includes traditional bonds, airplanes, shipping containers, medical technology, etc.
- CDO and ABS cash-flow forecasts based on historical and quantitative analysis
- Track and measure industry standards and trends in regard to structuring, collateral, and spreads
- Extensive use of Intex (desktop & web)

JP Morgan & Chase, Quantitative Credit Research Analyst, Iselin, NJ February 2005 to February 2006

- Designed and implemented valuation score-cards in C++ signaling MSA's that are excessively high in value and in turn, advising short-term to long-term changes in loan policies in those branches operating within those MSA's. Utilized explicit finite matrices to evaluate values.
- Wrote various VBA applications for weekly/monthly reporting, ranging from market analysis to portfolio evaluation, utilizing VBA and Excel functions in various macros
- Prepared summary and analysis reports on various products and their relative performances for upper management and their expected performances based on continuous normally distributed stochastic processes.
- Developed benchmarks, based on relevant factors, to measure relative performance of real estate portfolios. In designing benchmarks, used Ampl and LP solver optimization to design hybrid product benchmarks.
- Market analysis and commentary on the economy and relevant products for upper management and horizontal teams utilizing SAS statistical and reporting functions.
- Worked with product development testing and analyzing new products probability and scope of profitability by giving expected returns based on historical data as well as simulations done using binomial/trinomial trees.

Merrill Lynch Investment Managers, Junior Quantitative Analyst/Investment Technology Analyst, Princeton, NJ August 2001 to February 2005

- Developed and tested Genetic Programming Simulation utilizing Visual C++ or Japanese Equity factors analysis. Genetic Programming is the next step beyond ARCH and GARCH simulations, but nonparametric, and a step behind Neural Networks. The computer randomly generates combinations of factors and back tests the factors against various time frames of historical data. The result showed overall which factors statistically did better than others and within various time periods (the Asian Market crisis) how certain factors performed.
- Developed/Supported traders VBA/Excel applications. Ranged from redesigning to troubleshooting various subs and functions, as well as programming of 3rd party tools such as Bloomberg's blp functionality

- Developed volatility analysis excel sheet that pulled in securities held via ado call to Oracle database and historical data via Bloomberg, and wrote a GARCH sub that performed volatility analysis on securities for trading purposes
- Developed Asset Allocation Model for the FDP Series of diversified investment products. The Model utilized non-linear/linear optimizers, efficient frontiers, and volatility analysis. It is currently used as part of the investment decision-making process for Asset Allocation. Developed a Java GUI Front end that sat on top of Java classes and Ampl in combination with the CPLEX solver that would optimize combinations of various chosen assets to produce efficient frontiers and optimized portfolios.
- Performed VBA development/support for traders and portfolio managers, ranging from single to multiple sheets interacting with 3rd party tools (Bloomberg, factset).
- Monitored emerging market total foreign exchange risk within portfolios, to assist Senior Quantitative Analyst in using currency options, futures and forwards hedging against various international currency exposures.
- Performed attribution analyses for the ML Equity Growth funds and credit analysis for emerging market funds, daily and weekly reports that showed which sectors were performing better and which securities within those sectors were performing the best, and then comparing them with our portfolio selections to show PM's where we were under and over performing.
- Assist FX Manager in financial reporting to both internal and external reporting agencies.
- Back-tested and implemented various trading strategies for Senior Quantitative Analysts and traders, utilizing moving averages, ARCH, and finite stochastic optimizations. Wrote trading strategies in Java and Visual Basic.
- Designed and implanted Black-Scholes finite equation and Implicit and Numerical Matrices to triangulate option prices and measure implied volatility, as well as measured and reports all the Greeks for the Capital & Investments Fund which took positions in equity options. Wrote this in Visual C++ and created an executable.
- Implemented 3Phase FCFE cashflow model into a web-application including analytical and historical data, utilizing j2ee, EJB, and oracle back-end
- Developed business alert system database and web front-end for measurement against benchmarks and account rules, utilizing j2ee, xml, and an oracle back-end
- Created securities & accounts portal for fixed income investment managers utilizing 3rd party software, Plumtree, j2ee, and an oracle back-end
- Developed equity research web application which included FactSet market data, j2ee, EJB, queues, and an oracle back-end

CLASS SURVEYS

Course Information (2012-2019)		Course Evaluation	
Sem/Year	Course Title	Teaching Effectiveness	
		Instructor	Dept. Mean
Spring/2019	Business Analytics Programming	4.83	4.26
Spring/2019	Business Analytics Programming	4.60	4.26
Spring/2019	Business Analytics Programming	4.53	4.26
Spring/2019	Investment Modeling R	4.96	4.23
Spring/2019	Investment Modeling R	4.96	3.74
Fall/2018	Investment Modeling R	4.68	3.96
Fall/2018	Investment Modeling R	4.82	3.99
Fall/2018	Analytics Business Intelligence	4.50	4.26
Fall/2018	Analytics Business Intelligence	4.45	4.26
Spring/2018	Investment Modeling R	4.76	3.99
Spring/2018	Investment Modeling R	4.71	4.06
Spring/2018	Business Analytics Programming	4.50	4.18
Spring/2018	Business Analytics Programming	4.30	4.18
Fall/2017	Management Info Systems	4.79	4.02
Fall/2017	Foundation Business Programming	4.19	4.02
Fall/2017	Investment Modeling R	4.21	4.02
Fall/2017	Investment Modeling R	4.45	4.05
Spring/2017	Investment Modeling R	4.61	3.47
Spring/2017	Business Analytics Programming	4.02	4.08
Spring/2017	Business Analytics Programming	4.63	4.08
Fall/2016	Investment Modeling R	4.62	3.61
Spring/2016	Investment Modeling R	4.68	3.75
Spring/2016	Investment Modeling R	4.78	3.90
Fall/2015	Business Research Methods	4.57	3.96
Fall/2015	Investment Modeling R	4.67	3.93
Spring/2015	Investment Modeling R	4.64	3.94
Spring/2015	Info System Security	4.85	3.94
Fall/2014	Investment Modeling R	5.00	3.77
Fall/2014	Investment Modeling R	4.56	4.08
Spring/2014	Investment Modeling R	4.62	3.96
Spring/2014	Investment Modeling R	5.00	4.21
Fall/2013	Excel VBA Investing	4.62	3.98
Spring/2013	Management Info Systems	4.35	3.72
Spring/2013	Management Info Systems	4.55	3.72
Fall/2012	Business Research Methods	4.75	4.03
Fall/2012	Business Research Methods	4.55	4.03