JOHN H. MULLER

(617) 669-2204 | jmuller.ics88@gtalumni.org
https://www.linkedin.com/in/john-m-0757304/

ANALYTICS & SOFTWARE DEVELOPMENT PROFESSIONAL

Building pragmatic solutions to complex problems using Algorithms & Quantitative Finance expertise

HIGHLIGHTS OF SKILLS

- Extensive experience in **statistical modeling**, **analytics**, **risk management** and **data visualization**.
- Academic training in **machine learning**, **big data methods** and **quantitative finance**.

PROFESSIONAL EXPERIENCE

Lowe's, Charlotte, NC 2021-present

Contractor, Digital Data Science
- Part of a team building and deploying recommendation algorithms including graph based Neural Nets.

PNC Bank, Charlotte, NC 2019-2021

Contractor, Audit Code Review Team
- Review Python and SQL code, rerun the code and compare output to original and determine if code accurately and completely meets documented requirements. Required skill in and knowledge of Spark, Hadoop and Hive.

ENTER THE DATA, Boston, MA 2018-present
Descriptive and predictive modeling, visualization and data science consulting.

Chief Data Scientist
- estimating the value of a marketing campaign vis-à-vis resulting sales using time series analysis,
- analyzing customer retention using survival analysis to find differences across markets,
- estimating weather effects on sales,
- predicting government employment releases using lasso regression and random forests.

ACADIAN ASSET MANAGEMENT, Boston, MA 2013-2018

Vice President, Associate Portfolio Manager
- Designed and built a Dashboard for PMs to analyze portfolio exposures within and across strategies.
- Rebuilt from scratch a module to orthogonalize one signal to other factors/signals.
- Developed code to add transaction costs to our attribution and a web app (Bokeh) for exploring the results.
- Built an automatic testing program to run simple pass/fail tests on code where no explicit test code exists. Used Python's introspection to find methods and method signatures to assign valid values for arguments.
- Developed a Python version of the R Corrgram method for re-ordering the rows and columns of a correlation matrix to help reveal clusters of related variables.
- Other projects include investment strategy capacity analysis, rebalancing schedule frequency analysis, ranking of broker performance, FX hedge reporting module, access layer to alpha model data, and more.

ENTER THE DATA, Boston, MA 2012-2013
Descriptive and predictive modeling, visualization and data science consulting.

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STATE STREET ASSOCIATES, Cambridge, MA 2007-2012

The research arm of State Street that primarily builds trading signals based on proprietary data.

Head of Visualization and Analytics (2011-2012)

A new role that grew from the success of the Securities Lending Project.

Head of Securities Lending Research (2010-2012)

Led a collaboration between research and the Securities Lending business to build analytic tools to support trading. Worked directly with the lending traders and business heads, analyzed extensive transactional, data and built an end-to-end solution.

- Created back-end database structure combining internal and external data sources.
- Created a front-end trader dashboard, using Spotfire, to serve as the trader's main information portal.
- Analysis and modeling including: predicting hard-to-borrow securities and analyzing the relationship between real and synthetic shorts using options.

Research Manager (2007-2010)

- Team leader for new holdings indicators, i.e. trading signals, for equity and fixed income.
- Team leader and active participant in research and development of the equity holdings indicator.
- Managed teams that developed and released 14 new Foreign Exchange and Equity flow indicators.

BANK OF AMERICA, Charlotte, NC & Atlanta, GA 2001-2007

SVP in Corporate Investments, QUANTITATIVE TRADING STRATEGIES (2006-2007)

Member of a small equity quant group investing approximately $100M running momentum strategies. Responsibilities included:

- Coding (using R) and back-testing various improvements to the existing momentum-style strategy drawing data from MarketQA, IDC, IBES, and Compustat.
- Quantitative support for users of Barra's Enterprise Performance product for return attribution.

SVP in Risk Management, Portfolio Analysis and Optimization (2004-2006)

Provided quantitative support for managing the banks institutional loan portfolio.

- Designed and coded fixed income tools using R and C++.
- Developed code to calculate generic yield curves and bond asset swap spreads.

SVP in Consumer Real Estate, CUSTOMER AND PRICING ANALYTICS (2001-2004)

Recruited for data mining expertise. Conducted extensive analysis of customer database and provided analytic research on the effects of pricing policies to support the mortgage pricing team. Used statistical techniques to analyze loan-level cash flow data and build models to predict servicing profitability based on borrower characteristics and behavior.

Work experience prior to 2001 available on LinkedIn at https://www.linkedin.com/in/john-m-0757304/

EDUCATION AND ACTIVITIES

Ph.D., Computer Science, GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, GA (1989)

Bachelor of Science, Computer Science, UNIVERSITY OF GEORGIA, Athens, GA (1980)

Continuing Education and related activities:

- *Machine Learning with Graphs*, XCS224, Stanford Online (2022)
- *Artificial Intelligence: Principals and Techniques,* XCS221, Stanford Online (2021)
- DeepLearning.ai courses including *Neural Networks and Deep Learning* and *Sequence Models* (2018)
- *Data Science: Data to Insights and Big Data*, MIT professional development online course (2017)
- *Statistical Learning and Data Mining III*, Elements of Statistical Learning authors Tibshirani & Hastie (2011)
- Co-founder and current co-organizer of *Greater Boston useR Meetup Group* (2900+ Members) (2010)
- Certificates in Quantitative Finance, Stanford (2005), Carnegie Mellon (2006)
  Courses Included: Finance, Statistics and Mathematics, Stochastic Calculus, and Interest Rate Models.