Pritam Dalal

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Summary

- Quantitative professional with 15 years of experience in research, data science, and trading roles.

- University of Minnesota adjunct faculty teaching graduate students data science through appointments in the School of Mathematics and the Carlson School of Business.

- Master's in Financial Mathematics (University of Minnesota) and Bachelor's in Mathematics and Economics (University of California Berkeley).

- Experienced in data science, machine learning and statistics: random forest, gradient boosted trees, GARCH, neural networks, principal component analysis, regression.

- Development experience in Python, R, MySQL, PostgreSQL, Excel and VBA.

- Financial services experience working with options, commodities, futures, variance swaps, interest rate swaps, mortgages, corporate debt, asset-backed securities, annuities.

Experience

RStudio - Minneapolis, MN   2021 - Present
Customer Success Manager

- Work with our largest financial services clients to ensure successful adoption of RStudio's professional products; the primary sales success metric is renewal rate (gross dollar retention).
- For 2021, achieved a gross dollar retention of 93% versus a quota of 89%.
- Conduct a variety of client-facing webinars and seminars on Python, R, and RStudio professional products.
- Lead a series of internal trainings on data wrangling in Python.

Aware Asset Management - St Paul, MN   2019 - 2021
Head of Quantitative Research

- Determined the quantitative research agenda for all of Aware's investment strategies spanning corporate debt, mortgage backed securities, and asset backed securities.
- Developed machine learning models for predicting student loan defaults in JupyterLab with Python's scikit-learn package; features were selected from Intex CDU files, and a variety of classification models were employed including logistic regression, decision tree, and random forest.
- Lead the migration of our research platform into Blue Cross's new AWS architecture and developed a working knowledge of several services including Redshift, S3, EC2.
- Contributed to marketing through media interviews, podcast appearances, and monthly newsletter authorship.

University of Minnesota - Minneapolis, MN   2018 - Present
Adjunct Faculty

- Develop and teach machine learning and data analysis courses using Python and R courses for Master of Financial Mathematics program; tutorials developed in Jupyter Notebooks and R Markdown notebooks, slide presentations written in R Markdown.
- Faculty mentor for final project of Carlson School of Business Master of Science in Finance program.
- Developed an R package to clean and wrangle a large database of historical options data, using on-premise MySQL and PostgresSQL databases for data storage.
- Machine Learning: https://github.com/pritamdalal/python_for_machine_learning_in_finance
- Python: https://github.com/pritamdalal/python_for_data_wrangling_in_finance
- R: https://pritamdalal.github.io/rff_course/

Incenter - St. Paul, MN   2016 - 2017
Trader Analyst

- Priced and calculated sensitivities for MSR, reverse mortgages, and other mortgage products; data warehouses were located in Azure, and computations were executed in Python, R, and VBA.
- Developed and implemented the TBA and interest rate swap hedging strategies; developed custom R functions for valuing interest rate swaps.
- Trade execution for hedge rebalances on TBA positions and interest rate swap positions.

Wolverine Trading - Chicago, IL   2015 - 2016
Data Scientist

- Performed reporting, data analysis, and predictive analytics on various aspect of automated market-making systems utilizing R, SQL, Tableau, and Tableau Server; data sources included OPRA, exchange reporting, and proprietary data generated from the market-making strategies.
- Lead Wolverine's proprietary delta-hedging strategy, a program for saving on transaction costs by holding positions in the underlying (deltas) for short periods of time.
- Lead the analytics development for Wolverine's liquidity taking strategies; created a visualization-based dashboard in Tableau to stratify fill-rate statistics.
- Played a key role in the transition to Tableau for reporting and analysis.

Two Harbors Investment Corp - Minneapolis, MN   2014 - 2015
MSR Servicer Performance Consultant (Contract)

- Analyzed loan-level and repline-level data to develop various portfolio performance analytics for the purposes of MSR subservicer oversight, using C#, VBA, and Excel; data warehouses located in on-premise Microsoft SQL Server databases.
- Analyzed cash-flows and remittances to validate subservicer billing statements to determine if foreclosure processes were properly billed.
- Researched historical delinquency rates in Ginnie Mae collateral by analyzing various data sources provided by the Government Sponsored Entities.

Hedge Fund Launch Development - Minneapolis, MN   2012 - 2014
Principal and Researcher

- Backtested various volatility trading strategies in equities and ETFs, using R and Python; this involved empirical research in portfolio optimization and variance forecasting.
- Built an on-premise MySQL research database for historical end-of-day option prices, intraday option prices, parametric fitted skews, equity corporate actions, and variance estimates.
- Developed a working knowledge of the Interactive Brokers C# API, and used the API for intraday data capture of option prices and order book depth.
- Explored legal and regulatory issues involving the hedge fund industry.

Cargill - Minneapolis, MN   2008 - 2012
Junior Trader

- Developed, backtested, and implemented a proprietary commodity volatility trading strategy; this research was conducted in VBA and Excel, with a Oracle database backend.
- Strategy performance (4/2011-7/2014): $20MM AUM, 16% annualized returns, 1.88 Sharpe-Ratio.
- Managing and hedging portfolios of exotic derivatives on various commodity futures.
- Data analysis of skew-based models for pricing and replicating digital and barrier options using R.
- Developed and implemented an interest rate hedging strategy using Eurodollar futures.
- Extensive experience trading exchange and OTC options on commodity futures.
- Created and presented finance training seminars for non-traders.

Allianz Investment Management - Minneapolis, MN   2007 - 2008
Quantitative Analyst

- Structured, priced, and hedged fixed and variable annuity benefits.
- Systems development for the hedging platform including risk analytics, sensitivity analysis; primary technologies were VBA and Excel.
- Research and backtesting projects on topics such as model selection, Monte-Carlo methods, and option replication.

Education

University of Minnesota, Twin Cities
Master of Financial Mathematics
GPA: 4.0

University of California, Berkeley
Bachelors of Arts, Mathematics and Economics (honors)
GPA: 3.42

Technical Expertise

Computing Technology
Python, R, SQL, Tableau, Excel, VBA

Communication Tools
Jupyter Notebook, R Markdown, Bookdown, LaTeX

Machine Learning, Statistics, and Mathematics
Random Forest, Regression, Logistic Regression, Decision Trees, GARCH, Principal Components Analysis, Neural Networks, Linear Algebra, Real Analysis, Probability

Quantitative Finance
Option Replication, Dynamic Hedging, Futures, Commodities, Variance Swaps, Variance Estimation, Volatility Trading, Interest Rate Swaps, Mortgage Backed Securities, Mortgage Servicing Rights, Student Loan Asset Backed Securities, Corporate Bonds