

ROHAN KUMAR

Data Scientist | AI & Machine Learning | Financial Services

Jersey City, NJ · 201.205.7994 · rohandhn@gmail.com · linkedin.com/in/rohansingh · github.com/rohansingh

PROFESSIONAL SUMMARY

Data Scientist and quantitative analytics professional with 8+ years of experience building, deploying, and governing machine learning and statistical models in regulated financial services environments. Hands-on expertise in Python, R, SQL, and SAS across predictive modeling, NLP, anomaly detection, generative AI, and deep learning. Proven track record delivering AI-driven solutions for compliance, risk, and business optimization at Tier-1 institutions (SMBC, Deutsche Bank, Santander, HSBC, CRISIL/S&P Global). Uniquely positioned at the intersection of applied ML engineering and rigorous model governance (SR 11-7), making models that are not only accurate but auditable and regulator ready. M.S. Computer Science in progress (Monroe University); published researcher in trade surveillance modeling (SSRN).

TECHNICAL SKILLS

Languages	Python, R, SQL, SAS, kdb+/q
ML / AI	Logistic Regression, Random Forest, Gradient Boosting, LSTM, CNN, RNN, ARIMA, K-Means, KNN, Decision Trees, Lasso
Generative AI	Large Language Models (LLMs), AI Agents, Agentic Systems, Prompt Engineering, and RAG pipelines
NLP / DL	NLP, Deep Neural Networks, TensorFlow, Keras, Scikit-Learn, SpaCy, Pandas, NumPy
Big Data / Cloud	Azure Databricks, PySpark, Azure, GCP, Hadoop (conceptual), Snowflake, PostgreSQL, MySQL, MongoDB
Visualization	Tableau, Power BI, Matplotlib, ggplot, Excel (Power Query)
MLOps / Tooling	GitHub, GitHub Copilot, JIRA, Confluence, Visio / Lucidchart
Model Governance	SR 11-7, SR 15-8, Model Validation, Model Monitoring, KPI/KRI, Backtesting, AI Governance

PROFESSIONAL EXPERIENCE

Data Scientist / Compliance Analytics BA | SMBC (via [Madison-Davis Consulting](#)) — Jersey City, NJ Jun 2025 – Dec 2025

- Developed and enhanced in-house Market Surveillance ML models using Python, SQL, and Azure Databricks to detect market manipulation and policy-breach behaviors across Fixed Income, FX, and Swaps asset classes — improving detection precision by 20% and reducing false positives by 20–30%.
- Applied anomaly detection and statistical pattern recognition techniques to post-trade datasets covering trade lifecycle events including execution, settlement, and exception handling across structured and unstructured data sources.
- Built automated analytical workflows in Azure Databricks (PySpark/SQL) to process surveillance model inputs and alert reviews, cutting manual processing time by 20–30%.
- Partnered with Compliance, Technology, and Surveillance SMEs to align model logic with SEC, FINRA, and internal SMBC policies; supported annual threshold tuning and back-testing exercises to improve detection sensitivity.
- Produced model documentation, alert logic specifications, and change artifacts aligned with SR 11-7 model risk standards; maintained code versioning in GitHub and documentation in Confluence.
- Served as primary translator between business stakeholders and technology teams within Agile delivery squads, authored user stories and acceptance criteria for model enhancement sprints.

Senior Data Scientist / Model Developer | [Deutsche Bank](#) — New York, NY

Aug 2022 – Dec 2023

- Led development and recalibration of PPNR time series regression models supporting CCAR stress testing across \$5B+ in balance sheet exposures — reducing forecasting errors by 15% through Python/R-based model enhancement.
- Built and maintained financial models for corporate trust, Institutional Cash Management, and Corporate Cash Management portfolios; ran multi-scenario stress projections aligned with Fed regulatory submission requirements.
- Validated key model assumptions, conducted sensitivity analysis, and documented methodology limitations in alignment with SR 11-7 and internal Deutsche Bank Model Governance standards.
- Produced KPI/KRI monitoring frameworks to track model predictive performance as new data became available, escalated methodology risks to Model Risk Management.
- Supported IRRBB analytics including interest rate sensitivity analysis, balance sheet repricing gap analysis, and scenario impact modeling under regulatory stress environments.
- Authored detailed functional specifications, data flow diagrams, and interface documentation consumed by engineering teams; coordinated UAT and production sign-off.

Credit Risk Data Scientist / BA | Santander Bank (via PrimeSoft) — New Jersey May 2020 – Aug 2022

- Developed credit risk models including PD/EAD/LGD scorecards, risk rating frameworks, and CCAR loss estimation models using SAS and Python — delivering 10–15% reduction in processing time and measurably improved model accuracy.
- Led NDOD (IFRS 9) validation analysis for the retail credit portfolio using diverse SAS statistical procedures; ensured 98% compliance with established model development standards.
- Extracted, transformed, and analyzed large structured financial datasets using SQL, SAS, and automation frameworks to support portfolio risk analysis and regulatory reporting (CECL, IFRS9).
- Documented data lineage, business rules, and calculation logic for financial models and reporting pipelines; acted as delivery enabler to resolve requirement ambiguities across stakeholder groups.

Fraud Risk Analytics / ML Modeler | HSBC (via Huxley / Allegis Global) — New York, NY Jun 2018 – Oct 2019

- Executed fraud detection model monitoring at HSBC achieving 99% compliance with bank standards; conducted annual vendor model reviews resulting in 15% improvement in model efficacy.
- Redesigned model documentation for fraud risk ML models; worked with industry-standard platforms including First Data, SAS EFM, and Experian, reducing monitoring cycle time by 20%.
- Partnered with QA teams to validate model outputs against business rules; coordinated UAT cycles and obtained business sign-off on model releases.
- Collaborated in Agile ceremonies across globally distributed teams (standups, sprint planning, backlog grooming, retrospectives) to deliver fraud analytics enhancements.

Quantitative Analyst / Model Validator | CRISIL / S&P Global — New York, NY Aug 2015 – Nov 2017

- Validated fraud detection and PPNR/RWA models for Citi, Bank of America, and BNP Paribas; developed standardized model validation framework improving governance across client engagements.
- Built time series regression models for CCAR submission 2016 in SAS; developed datasets and technical documentation that reduced data processing time by 20%.
- Supported integration of stress testing results into Capital Planning Working Group deliverables across multiple Tier-1 bank clients.

EDUCATION

M.S. Computer Science — Monroe University, New Rochelle, NY	2025 – Present
M.S. Analytics — Harrisburg University of Science & Technology	2019
M.S. Finance / Risk Management — Illinois Institute of Technology, Chicago	2015
MBA — Financial Management — Goldey-Beacom College, Wilmington, DE	2022
B.E. Mechanical Engineering — Manipal Institute of Technology, India	2005

RESEARCH & CERTIFICATIONS

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- Published: Trade Surveillance Detection System — SSRN Abstract ID 6576018 (market manipulation modeling using ML)
 - Bloomberg Equity Essentials — Bloomberg Essentials Training Program

- Exploring: Databricks Data Engineer Associate certification (Microsoft DP-750)