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Professional Summary

Quantitative Data Scientist and Financial Analyst with comprehensive expertise in machine learning, statistical modeling, and financial risk management. Strong academic foundation in Mathematics, Corporate Finance, and Data Science, complemented by hands-on experience in fintech environments including **insurance**, **MVNO**, **remittances**, **cryptocurrency**, **FX transactions**, **asset management**, **mutual banking**, and introducing broker services.

Proficient in advanced analytics tools and methodologies, with proven ability to develop predictive models, implement time series analysis, and deliver data-driven insights for strategic decision-making in complex financial ecosystems.

Education

Postgraduate Diploma in Finance

2025–Present

Wits University, Johannesburg

- ✓ **Core Modules:** Principles of Corporate Finance, Principles of Investments, Financial Modelling with Excel and VBA
- ✓ **Advanced Modules:** Portfolio Management, International Finance, Fintech and Big Data Analytics
- ✓ **Specialized Focus:** Data Analysis Backtesting and Optimization, Applications of Derivatives

Postgraduate Diploma in Data Science

2024

Wits University, Johannesburg

- ✓ **Achievement:** Passed with Distinction
- ✓ **Core Expertise:** Applied Machine Learning, Mathematical & Statistical Foundations
- ✓ **Specializations:** Health Analytics, Spatio-temporal Data Analytics, Social Media Analysis

Bachelor of Sciences

2019–2023

Wits University, Johannesburg

- ✓ **Key Disciplines:** Mathematics III, Corporate Finance III, Investments III, Actuarial Sciences
- ✓ **Academic Excellence:** Distinctions in Calculus I, Multivariable Calculus II, Basic Analysis II

Professional Experience

Quantitative Risk Analyst

Jan 2025–Present

eGroupX, Johannesburg

- **Advanced Modeling:** Developed LSTM deep learning networks and GARCH volatility models for USD/ZAR forecasting in remittance operations
- **Time Series Analytics:** Implemented ARIMA/SARIMA models for financial forecasting across multiple fintech verticals
- **Machine Learning:** Applied K-means clustering for customer segmentation and risk pattern identification in MVNO and cryptocurrency data
- **Data Engineering:** Performed multivariate time series imputation using advanced statistical methods for missing financial data
- **Risk Framework:** Designed comprehensive risk management systems covering Credit, Market, Interest Rate, Operational, Liquidity, and Investment Risk
- **Fintech Integration:** Conducted quantitative analysis for insurance products, FX transactions, and asset management strategies
- **Automation:** Developed Python-based automated risk monitoring systems for mutual banking and introducing broker operations
- **Executive Reporting:** Created real-time dashboards using Power BI and Excel for C-suite risk reporting and regulatory compliance

Machine Learning & Data Science Projects

Financial Time Series Forecasting



Developed LSTM deep learning models for cryptocurrency and FX rate prediction achieving 85% accuracy using TensorFlow and advanced feature engineering techniques.

Customer Segmentation & Risk Analytics



Implemented K-means clustering on fintech customer data to identify behavioral patterns, optimize product offerings, and enhance risk assessment frameworks.

Volatility Modeling & Risk Prediction



Built ensemble GARCH models for volatility forecasting and regression models for credit risk assessment in mutual banking and insurance underwriting.

Advanced Data Imputation Framework



Designed multivariate time series imputation methods for handling missing financial data across multiple asset classes using statistical and ML approaches.

Fraud Detection System



Developed comprehensive ML pipeline using Random Forests and Neural Networks for detecting fraudulent transactions in remittance services with 92% precision.

Portfolio Optimization Engine



Implemented modern portfolio theory enhanced with machine learning for dynamic asset allocation strategies and risk-adjusted return optimization.

Technical Expertise

Programming & Development

Languages: Python, R, SQL (MSSQL, MySQL, PostgreSQL), VBA, MATLAB

Environments: Jupyter Notebook, VS Code, PyCharm, RStudio, IDLE

Version Control: Git, GitHub, Azure DevOps, GitLab

Cloud & Infrastructure

Platforms: Microsoft Azure, Amazon Web Services (AWS), Google Cloud Platform

Databases: MSSQL Server, MySQL, PostgreSQL, MongoDB, Redis

Deployment: Docker, Kubernetes, Azure ML, AWS SageMaker

Data Science & ML Libraries

Core Analytics: Pandas, NumPy, Scikit-learn, Statsmodels, SciPy

Deep Learning: TensorFlow, Keras, PyTorch, Neural Networks

Visualization: Matplotlib, Seaborn, Plotly, Power BI, Tableau

Specialized: NLTK, XGBoost, LightGBM, OpenCV

Financial & Statistical Methods

Time Series: ARIMA, SARIMA, GARCH, VAR, Prophet

Risk Models: Monte Carlo, VaR, Stress Testing, Credit Scoring

Fintech Industry Expertise



- **Insurance Analytics:** Actuarial modeling, claims prediction, premium optimization using advanced ML techniques
- **MVNO Operations:** Customer usage analysis, churn prediction, revenue optimization models
- **Remittance Systems:** Cross-border payment optimization, fraud detection, regulatory compliance frameworks
- **Cryptocurrency:** Trading algorithms, risk management, blockchain analytics, regulatory compliance
- **FX Trading:** Real-time pricing models, liquidity management, algorithmic trading strategies
- **Asset Management:** Portfolio optimization, performance attribution, risk-adjusted return analysis
- **Mutual Banking:** Credit scoring, regulatory reporting, operational risk management
- **Introducing Broker:** Client onboarding automation, commission optimization, compliance monitoring

Professional Development & Certifications

In Progress

Planned

- Microsoft Azure Data Scientist Associate
 - AWS Certified Machine Learning - Specialty
 - CFA Institute Investment Foundations
- Financial Risk Manager (FRM) Certification
 - Google Cloud Professional ML Engineer
 - Certified Analytics Professional (CAP)

Core Competencies

Technical Skills	Business Acumen	Leadership
<ul style="list-style-type: none">• Advanced Problem Solving• Statistical Modeling• Algorithm Development• Data Architecture	<ul style="list-style-type: none">• Strategic Communication• Stakeholder Management• Risk Assessment• Regulatory Compliance	<ul style="list-style-type: none">• Team Collaboration• Project Management• Mentoring & Training• Innovation Management

Additional Information

Professional Interests

- Quantitative Finance & Algorithmic Trading
- Fintech Innovation & RegTech Solutions
- Machine Learning in Finance
- Sustainable Finance & ESG Analytics
- Blockchain Technology & DeFi

Languages & Memberships

Languages: English (Native), Zulu (Native), Afrikaans (Conversational)

Professional Memberships:

- South African Statistical Association (Planned)
- CFA Institute (Planned)
- IEEE Computer Society (Planned)