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SUMMARY

Fast learner and team-player with hands-on experience developing, supporting, automating and optimizing critical ETL and ML pipelines in Airflow and AWS, leveraging CI/CD and MLOps processes. Having grown up with a passion for numbers, my background lies mainly in mathematics, statistics, and actuarial science, with an ever-growing interest and specialization in modern data science techniques and their applications. I am analytical, results-oriented and comfortable working on multiple projects in a fast-paced environment while keeping relevant stakeholders well informed.

COMPUTER SKILLS

- Proficient in:
  - Programming: Python (NumPy, MatPlotLib, Pandas, scikit-learn, Flask/Dash, PySpark) AWS Sagemaker, R, MATLAB, MS Excel, basic Java.
  - CI/CD: Jenkins, Spinnaker, Docker, Git.
  - ETL: Apache Airflow (Python), Pentaho Data Integration, AWS Glue.
  - Database: SQL/NoSQL, AWS S3, AWS RDS, MongoDB, MySQL, AWS Redshift, Data Warehousing.
  - Reporting: MS Excel, MS PowerBI, Pentaho Report Designer, Tableau, Jaspersoft.
  - General: MS Office Suite, batch scripts, Linux command line, AWS Lambda.

EXPERIENCE

Data Scientist January 2021 - Current

Ukheshe Technologies, South Africa, www.ukheshe.com (Financial Services)

- Primary duties and responsibilities include machine learning model development, deployment and maintenance; product development and market research; data warehouse design, maintenance and documentation; weekly and monthly reporting; and keeping stakeholders across multiple departments informed on technical projects.
- Successful Projects:
  - Data Warehouse:
    - Built and documented multiple full-scale data warehouse solutions for financial transactions data using AWS Lambda, Apache Airflow, AWS S3, AWS RDS, Docker, MongoDB and Pentaho Data Integration. Implemented modern dimensional modelling techniques and optimized query performance for reporting and dashboarding, increasing query speeds by over 90%.
    - Built automated reporting systems on the back of multiple data sources using tools such as AWS Lambda, Apache Kafka, MS Excel, Pentaho Report Designer, Tableau and Windows batch scripts.
  - Machine Learning:
    - Reduced fraud volumes on the MasterPass payments processing system by over 60% using a ML fraud detection system based on XGBoost and KNN algorithms.
    - Led a team of data engineers, scientists and business analysts in designing and deploying a fraud detection solution for a subdivision of one of South Africa's leading banks. Built a system capable of analyzing user registrations and transactions and classifying them as fraudulent or legitimate with +80% accuracy.

- Side Projects:
  - Built a web app that allows a user to experiment with various machine learning algorithms that predict the future price of a chosen cryptocurrency.
  - Built an application that outputs the optimal investment strategy that a pension planner should follow when investing on behalf of a group of individuals with risk preferences coming from a known statistical distribution.
  - Currently building a web application that allows a user to log in, set a risk tolerance level, initial wealth level, target wealth level, preferred investment term, and then construct a portfolio of cryptocurrencies along with proportions of the initial wealth to be invested in each that will maximize the probability of achieving the target wealth level by the end of the investment term.

Data Scientist Intern December 2020

Ukheshe Technologies, South Africa, www.ukheshe.com (Financial Services)

- Up skilled in MS Excel, SQL/NoSQL Databases, AWS Services, reporting tools such as PowerBI and Tableau, Python, R and Docker.
- Compiled and distributed various weekly and monthly reports to clients and stakeholders.

EDUCATION

MSc Quantitative Finance & Actuarial Science, Tilburg University (2020 – Current)

Tilburg, The Netherlands

- Dissertation: *'Optimal collective investment for heterogeneous agents'* (Defence date November 2021)
- Coursework (grades):
  - Valuation and Risk Management (75%): Contingent claim pricing, numerical methods, risk measures, the term structure of interest rates, credit risk.
  - Data Science Methods (75%): Principal components, clustering, pattern recognition, forward model selection, regression trees, classification trees, causal inference and big data.
  - Decision Making Under Uncertainty (75%): Monte Carlo simulation, stochastic programming, simulation optimization.
  - Panel Data Analysis (75%): Overview of empirical models used to analyze panel data on individual decisions and outcomes, focusing on life cycle decisions related to savings, portfolio choice, labor supply, retirement, and health.
  - Asset Liability Management (70%): The application of econometric techniques used in pension funds and insurance companies.
  - Empirical Finance (65%): Predictability, CAPM and multi factor models, behavioral finance, the finance of pensions and ageing.
  - Risk and Regulation (60%): Risk measures and risk capital, capital allocation methods, regulatory requirements, pricing and hedging of complex financial products, macro finance.

BSc Mathematical Sciences, Stellenbosch University (2019)

Stellenbosch, South Africa

- Majors in applied and financial mathematics.
- Distinction for final year research task *'Linear Dynamic Systems'*
- Formed part of 4EverKits, a non-profit organization providing voluntary tutoring services to scholars from underprivileged communities in business studies, mathematics and general life skills.
- 2019 South African Mathematical Modelling Competition:
  - 1st Place: Best MATLAB Code.

- 1st Place: Best forecasting model.
- 3rd Place overall.

INTERESTS

- Data science topics (machine learning, AI, neural networks and big data, credit risk modelling, cryptocurrency trading).
- Investing and the mechanics of financial markets.
- Reading, exercising and the outdoors.
- Jazz and blues music.

REFERENCES

References/recommendations available on request.