

Graduate Data Scientist

BSc Computer Science | Machine Learning and AI | Analytics and BI

PROFILE

I am a BSc Computer Science graduate with a specialisation in machine learning and a strong foundation in Python, SQL, and statistical modelling. My thesis applied supervised classification and XGBoost to network intrusion detection, finding rare anomalous events in large, imbalanced datasets. I have three years of commercial experience working with real business data, building reports, tracking performance trends, and supporting data-driven decisions across inventory, sales, and financial operations. I am eager to bring that combination of academic ML rigour and hands-on analytical experience into a financial analytics environment where models have real-world consequences.

KEY SKILLS

Python: pandas, matplotlib, scikit-learn, XGBoost, OOP and functional programming

Machine learning: Supervised classification, anomaly detection, feature engineering, model evaluation (precision, recall, F1, AUC, ROC), imbalanced datasets, hyperparameter tuning

Analytics and BI: Power BI (dashboards, interactive reports, DAX measures), Excel (advanced), KPI reporting, variance analysis, trend analysis, data storytelling

SQL and databases: MySQL, PostgreSQL, MongoDB, dimensional modelling, snowflake schema, ETL processes, data quality and validation

Mathematics: Probability, descriptive and inferential statistics, algorithms and data structures (Mathematics I graded 1.0)

Cloud and big data: Big Data Technologies, Cloud Computing (AWS and Azure fundamentals)

Tools: VS Code, Git, Jupyter, generative AI tooling

Soft skills: Analytical rigour, independent research, cross-functional collaboration, written and verbal communication (English C1, Afrikaans native, Dutch B1)

WORK EXPERIENCE

IT Analyst | Gummy Berry Juice South Africa | *December 2022 to present*

- Maintained and analysed customer, sales, inventory, supplier, and operational datasets to support reporting, business intelligence, and data-driven decision-making.
- Produced operational reports, business performance tracking, and analytical insights using Microsoft Excel and related reporting tools.
- Analysed inventory levels, stock trends, supplier performance, and logistics data to support purchasing decisions, identify supply risks, and improve operational efficiency.
- Monitored customer and supplier payment trends to support cash-flow planning and business performance analysis.
- Identified operational inefficiencies through data analysis and contributed to process improvement initiatives across multiple business functions.
- Supported business reporting requirements through data collection, validation, organisation, and analysis.
- Built and maintained Power BI dashboards and reporting templates used by management for day-to-day decision-making.
- Managed and maintained business technology systems, e-commerce platforms, operational databases, and digital infrastructure.
- Administered online sales channels ensuring accurate product information, inventory management, pricing, order processing, and data integrity.
- Provided first-line IT support, diagnosed and resolved technical issues to improve system reliability and operational continuity.
- Collaborated across operational, sales, and administrative functions to improve data accuracy, reporting quality, and business efficiency.

Founder and Operator | Custom Print Side Business | *Ongoing*

- Managed the full production and fulfilment cycle independently, using CorelDRAW and Canva to design and produce custom products, handling all customer and order management.

RESEARCH AND PROJECTS

Bachelor's Thesis: ML in Network Intrusion Detection | | Completed 2026

Grade: 1.0 (highest distinction). Colloquium defence: 1.0.

- Applied supervised machine learning to classify network traffic as normal or anomalous — the same binary classification problem underlying fraud detection and financial anomaly detection.
- Conducted a systematic literature review covering over 60 papers across multiple ML algorithm families, evaluating approaches for detecting rare events in large, imbalanced datasets.
- Designed and implemented a reproducible XGBoost classifier on CICIDS2017, including feature engineering, hyperparameter tuning, and evaluation using precision, recall, F1-score, and AUC.
- Benchmarked model performance across three real-world datasets (NSL-KDD, CICIDS2017, UNSW-NB15), demonstrating the ability to work with structured data at scale and communicate results to a specialist audience.

SQL Data Mart | MySQL |

- Designed a 20-table snowflake-schema data mart in MySQL, applying normalisation and dimensional modelling to structure data for analytical querying and reporting.
- Built queries, views, and aggregation structures to support multi-dimensional business reporting.

Habit-Tracking Application | Python and PostgreSQL |

- Built a PostgreSQL-backed application in Python covering data validation, schema design, storage, and retrieval — demonstrating end-to-end data pipeline thinking at a project level.

EDUCATION

BSc Computer Science | IU International University of Applied Sciences | 2023 to 2026

Overall grade 2.5 on the German scale (1.0 highest). Thesis and colloquium: 1.0 (highest distinction). Thesis: *Machine Learning Approaches in Network Intrusion Detection Systems*. Top module grades: *Mathematics I* (1.0), *Introduction to Programming with Python* (1.3), *Software Engineering Project* (1.3), *Software Quality Assurance* (1.7). Key modules: *machine learning and AI, algorithms and data structures, database systems, statistics, big data and cloud technologies, cybersecurity*.

Generative AI Mastermind | Outskill | 2026

Practical application of generative AI tools, prompt engineering, and AI-assisted workflows.

National Senior Certificate | Hoerskool Hugenoet | 2022

Mathematics 79%, Computer Applications Technology 84%, Physical Sciences 69%. Top 20 academic leaderboard 2018 to 2022. Prefect and student council member.

ADDITIONAL

Languages: English (C1 Advanced), Afrikaans (home language), Dutch (B1 Intermediate).

Driver's licence held. Travel experience in the Netherlands.