

# SAMUKELO SOLLY MAKHANYA

## DATA SCIENTIST | BI & ANALYTICS SPECIALIST | FULL-STACK DEVELOPER

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### PROFESSIONAL SUMMARY

Highly versatile and analytical Computer Science Honours graduate (NQF Level 8) with a comprehensive technical background spanning machine learning engineering, full-stack application development, and business intelligence (BI) frameworks. Proven track record architecting data-driven automation engines, constructing optimized ETL/data engineering pipelines, and developing predictive ML models over complex enterprise datasets. Currently embedded at the Compensation Fund (Department of Employment & Labour), translating raw transactional data layers into actionable insights and strategic reporting solutions. Proficient across Python, SQL, R, and Power BI; recognized for pairing technical execution with clear stakeholder communication in fast-paced agile environments.

### CORE COMPETENCIES & TECHNICAL MATRIX

#### Languages:

- Python (Advanced)
- SQL (Proficient)
- R Programming
- HTML, CSS, JavaScript

#### Cloud & Systems Architecture:

- AWS (Certified Solutions Architect)
- Microsoft Fabric & Teams Ecosystems
- SAP Professional Fundamentals

#### ML & Analytics:

- Scikit-Learn / ML Pipelines
- Pandas & NumPy Analytics
- Predictive Modeling
- Anomaly & Fraud Detection

#### Professional Attributes:

- Stakeholder Requirements Gathering
- Agile Frameworks & Sprints
- Advanced Data Storytelling

#### Data Engineering & BI:

- Pipeline Design & Optimization
- Power BI (ETL, DAX, Modeling)
- Relational Database Systems
- Data Quality Frameworks

### PROFESSIONAL EXPERIENCE

#### Data Analyst & Machine Learning Engineer

March 2025 – Present

##### Department of Employment & Labour (Compensation Fund)

Pretoria, Gauteng

- Build and iterate predictive ML models using Python and SQL to extract performance metrics and surface operational trends across large institutional data layers.
- Architect and optimize high-volume ETL data pipelines, enforcing strict data quality, completeness, and consistency checks that achieved 100% data integrity for downstream deployment.
- Translate complex algorithmic findings and predictive anomalies into clear, decision-ready data storytelling dashboards presented directly to BI units and executive stakeholders.
- Collaborate with cross-functional data teams (Senior Data Scientists, Engineers, and Business Analysts) to scale enterprise analytical workflows while maintaining strict code reproducibility standards.
- Map ambiguous organizational data problems to robust technical scripts within agile sprints, aligning data solutions with broader corporate strategy and governance.

#### E-Learning Assistant — Data Analytics & System Support

March 2023 – December 2024

##### Walter Sisulu University

Eastern Cape

- Applied Python scripting and statistical logic to analyze large educational data systems, uncovering performance trends and flagging systemic operational anomalies.
- Executed end-to-end data discovery, cleaning, and normalization workflows, preparing raw multi-source user data for integration into predictive risk and network models.
- Managed user profile databases and automated system data entries, presenting emerging visual trends in cross-functional forums to drive swift corrective platform adjustments.
- Produced clear, reproducible technical documentation covering script dependencies, algorithmic logic, validation gates, and development roadmaps.

## KEY DIGITAL SOLUTIONS & PORTFOLIO PROJECTS

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### Financial Anomaly Analytics Suite & Predictive Pipeline

*Data Science / Engineering*

- Engineered an end-to-end analytics engine (Python: Pandas, NumPy, Scikit-Learn + SQL) that automates multi-source transaction ingestion, data cleansing, and ML-driven risk-impact isolation, significantly eliminating manual validation times.

### "Loan Shack" Full-Stack FinTech Prototype

*Full-Stack Web Development*

- Developed a responsive full-stack application prototype utilizing HTML, CSS, and JavaScript featuring an automated estimation calculator algorithm and secure document upload workflows for streamlined processing.

### Automated Governance & Risk Modeling Engine

*Automation / DevOps*

- Designed and deployed a defensive Python data validation framework that enforces strict pipeline quality controls and guarantees 100% data consistency as a prerequisite gate for model ingestion.

## EDUCATION & ACADEMIC CREDENTIALS

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### BSc Honours in Computer Science (NQF Level 8)

2025

Walter Sisulu University

*Focus: Advanced Algorithmic Design, Machine Learning Applications, Data Science Principles, and Distributed Systems.*

### BSc in Computer Science (NQF Level 7)

2024

Walter Sisulu University

*Focus: Relational Database Architecture, Core Data Structures, and Software Engineering Foundations.*

### National Senior Certificate (Matric with University Exemption)

2017

Chief Charles Secondary School

## PROFESSIONAL CERTIFICATIONS

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- **Data Analysis with Python** — *IBM Certified*
- **Architecting Solutions on AWS** — *AWS Certified*
- **Data Modeling & ETL in Power BI** — *Microsoft Certified*
- **Data Analysis with R** — *Google Certified*
- **SAP Professional Fundamentals** — *SAP SE*
- **IT Audit & Cyber Security (iNkanyezi)** — *Absa*

## PROFESSIONAL REFERENCES

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**Mr. Daise Sibanda** — Mentor & Data Scientist (073 183 8105)    **DD Makgabo Kgomo** — ICT Manager, Compensation Fund (060 522 1324)

**Tumiso Malatjie (ASD)** — Supervisor, Compensation Fund (060 983 2639)    **Mr. Cwala** — E-Learning Supervisor, Walter Sisulu University (067 805 5267)