

Crystal Jacobs

Driving Innovation & Excellence



Honour in Info Technology (Data Science)
B.Sc. in Info. Technology (Software Engineering)
National & International Experience

PERSONAL DETAILS

Date of Birth: 14 October 1988
LinkedIn: [LinkedIn/Crystalj888](#)
Website: [Portfolio Website](#)
All Certifications: [My Certification's](#)
Availability: 1 Calendar Month
Drivers Licence: Yes
Criminal Record: No

Languages: English
Afrikaans

CORE 8 SKILLS

- Data Analysis / Science
- IoT & Sensor Networks
- AI & Machine Learning
- System Architecture & Automation
- Cloud & On-Premises Data Engineering
- Python & Java Development
- International Collaboration
- Project & Team Leadership

CERTIFICATIONS

- PCEP – Certified Python Programmer:
- Certification Number: [ZYWk.tAEJ.550V](#)
- Microsoft Power Automate Associate:
- Certification Number: [8B0AD4-KE94C9](#)
- Microsoft Business Central Associate:
- Certification Number: [7AA4IF-3275BD](#)

CRYSTAL JACOBS

AI Automation Engineer | Data Analytics Engineer | Intelligence Systems Engineer
Designing intelligent models, automated pipelines, and systems leveraging Python, SQL, and cloud solutions to solve real-world problems across industries

📍 Cape Town, SA

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SUMMARY

AI Automation and Data Engineer with 15+ years of experience designing intelligent, automated systems that solve operational challenges across agriculture, manufacturing, medical, and financial sectors. I build systems that ingest, analyse, and operationalize data, enabling better decisions, reduced manual intervention, and measurable performance improvements.

Core technical expertise: Python, SQL, data modelling, advanced analytics, scalable ETL pipelines, and cloud deployment (Azure / on-premise). I specialize in end-to-end system intelligence — from data ingestion to analytics and automation pipelines — transforming raw data into actionable outcomes.

My domain experience is strongest in AgriTech, Finance, and Manufacturing, contributing to smart farming initiatives, production optimization, and monitoring solutions that dynamically respond to environmental and operational signals. Alongside my professional work, I develop independent R&D projects exploring applied AI, system intelligence, and automation, including AI-ready agricultural intelligence platforms and rural connectivity solutions for data-scarce regions.

Pursuing a B.Sc. Honours in Information Technology (Data Science), I am deepening my expertise in applied machine learning and intelligent systems engineering. I aim to leverage my skills in Data and AI Engineering to build adaptive, high-impact systems that drive measurable improvements in agriculture, finance, and infrastructure domains.

[Please go to my Portfolio Website for links to all my Github projects. \(Past and currently active\)](#)

TECH SKILLS

Data Engineering & Intelligent Systems

- End-to-end data pipelines (ingestion, transformation, storage)
- SQL analytics, data modelling, and warehousing (incl. Fabric ecosystem)
- On-premise & cloud architectures
- Large-scale data processing with Apache Spark, PySpark & Databricks

Programming & Analytics

- Python for analysis & system automation (Pandas, NumPy, Matplotlib, Seaborn)
- Distributed data processing with PySpark
- Exploratory data analysis and analytical problem solving

Machine Learning, Automation & System Architecture

- Supervised & unsupervised ML fundamentals
- Python-based ML workflows (scikit-learn)
- Foundations in deep learning (TensorFlow, PyTorch)
- Process automation, CI/CD, and workflow orchestration

Senior Data Analyst and AI Automation Engineer

January 2024 - Present

Bestbar Manufacturing | Bitberry IT (Westview Group) | Remote (Australian Hours)

I design, automate, and deploy enterprise-level data systems that support executive decision-making across Finance, Production, Manufacturing, and Group Operations. My work enables leaders across Westview Group to manage budgets, profitability, forecasting, and daily production through intelligent, automated, real-time data platforms.

Executive-Level Analytics & Financial Intelligence

Designed and delivered mission-critical dashboards for Directors and Executives, including:

- Budget vs Actual, Profit & Loss (P&L), Forecasting, Labour Efficiency, Production KPIs, and Operational Cost Analysis.
- Automated financial data ingestion from Business Central, Great Plains (GP), Navision, and SQL-based systems to ensure real-time, accurate reporting.
- Built advanced data models for MTD/YTD financial tracking, cash flow trends, and scenario modelling.

Enterprise Data Automation & System Integration

- Engineered end-to-end automated pipelines that extract, transform, and load data from ERP systems into SQL, On-Premises and cloud-based environments.
- Delivered fully automated production dashboards used daily across factories for scheduling, material flow, manufacturing throughput, and QA monitoring.
- Eliminated manual reporting processes, improving data availability from hours to minutes.

AI-Driven Automation & Predictive Intelligence

- Developed intelligent automation solutions using Python, TensorFlow, Pandas, PySpark, and API integrations.
- Built predictive models for demand, production efficiency, and inventory planning to support operational and strategic business decisions.

Data Visualization & Business Intelligence

- Designed enterprise reporting structures using Power BI, Python visualizations (Matplotlib/Plotly), SQL, and custom APIs.
- Developed a unified, automated reporting ecosystem used across multiple states and departments.
- Ensured high standards of data integrity, governance, and auditability across all reporting layers.

Leadership, Strategy & Cross-Functional Collaboration

- Acted as Team Lead on priority automation initiatives for Finance, Production, and Group IT.
- Drove Agile sprints, defined project scopes, managed risks, and coordinated with international teams across Australia and South Africa.
- Partnered closely with Directors to translate business needs into technical delivery with measurable impact.

Senior Business Analyst (Agile Scrum)

June 2023 – December 2023

Kaplan UK | Seaside Extended | Hybrid (United Kingdom Hours)

Kaplan UK is a national leader in professional education and a Microsoft Partner environment, operating one of the largest custom Business Central development ecosystems in Africa while implementing advanced Microsoft Cloud and Power Platform solutions:

Agile Delivery:

- Led Scrum-based delivery cycles with developers, testers, and product owners to deliver high-impact digital solutions.
- Produced clear requirements, process flows, and end-to-end documentation supporting major modernization initiatives across the organisation.

Microsoft Partner Ecosystem:

- Worked within a large-scale Microsoft Partner environment, contributing to Business Central custom development, Power Platform integrations, and cloud-based data transformation initiatives using Microsoft Azure and analytical tools.

Quality Assurance:

- Worked within a large-scale Microsoft Partner environment, contributing to Business Central custom development, Power Platform integrations, and cloud-based data transformation initiatives using Microsoft Azure and analytical tools.

SQE Digital Transformation:

- Supported the Solicitors Qualifying Examination (SQE) transformation by collaborating with cross-functional teams (Data Analysts, Product Managers, BAs). Delivered critical BA inputs for Business Central enhancement and digital delivery improvements.

Senior System Analyst & Developer

February 2022 – May 2023

Afriplex Manufacturing (Pty) Ltd | Paarl, South Africa | Hybrid

Afriplex is a leading pharmaceutical manufacturer specializing in medical innovation and regulated product development. The IT division provides advanced systems integration, clinical technology solutions, and enterprise digital transformation for the broader group of companies.

Systems Integration & Development

- Designed and implemented a full seed-to-sale pharmaceutical traceability system using Business Central AL, ensuring complete SAHPRA compliance and enabling real-time tracking from cultivation to finished product sale.
- Engineered a custom ERP traceability platform aligned with strict medical and regulatory frameworks, improving auditing accuracy and operational reliability by over 50%.
- Managed vendor and customer relationships throughout the integration lifecycle, ensuring efficient delivery, risk mitigation, and end-user alignment.

Clinical Technology Development

- Built and deployed a clinical research traceability platform using HTML, CSS, JavaScript, and Azure API integrations to support medical research, documentation automation, and compliance.
- Automated clinical trial document workflows, reducing manual effort and turnaround times by 40–60%.
- Developed secure SharePoint hubs across multiple companies, automating compliance documentation, user roles, and approval flows.
- Implemented and supported Microsoft 365 across the organisation, streamlining communication, identity management, and document governance.
- Utilised SQL for advanced data analysis, reporting, and regulatory data validation.

Training & System Rollout

- Delivered weekly training programs to administrators and end-users, ensuring full adoption of the traceability systems, process compliance, and organisation-wide digital literacy

Promotion to Agronomy Production Manager

- Promoted to lead the digital transformation of facility operations at a medically registered cannabis facility, implementing IoT systems, HVAC automation, and environmental data monitoring for improved compliance, energy efficiency, and production stability.
- Enabled data-driven decision making across cultivation and processing, strengthening operational oversight and regulatory adherence.

Chief Executive Officer

December 2014 – November 2020

TauMililo Transport Services | On-site & Travel (South African Time Zone)

A national and cross-border logistics company specializing in Agricultural, FMCG and speciality freight, including warehouse operations and temperature-sensitive transport.

Strategic Operations & Data-Driven Leadership

- Led the full operational ecosystem across transport, warehousing, client delivery, and financial planning.
- Used data-driven decision-making (fleet utilisation analytics, cost modelling, route optimisation) to improve margins and operational efficiency across a multi-region logistics network.
- Data & Analytics-Driven Operations: Leveraged SQL-based reporting, fleet telematics, and cost analytics dashboards to optimise routes, reduce downtime, and improve fuel efficiency across national and cross-border operations.
- Performance Monitoring & Decision Intelligence: Built and monitored key operational datasets (fleet utilisation, delivery performance, warehouse throughput) to support strategic planning, forecasting, and executive decision-making.

Risk, Compliance & Workforce Oversight

- Managed regulatory and industry compliance, including ISO 9001 warehouse standards and cross-border freight regulations (SADC region).
- Oversaw workforce planning, safety, operational KPIs, and cross-functional team performance.

Client Relationship & Contract Governance

- Managed enterprise-level clients in agriculture and FMCG sectors, building long-term strategic partnerships.
- Led contract negotiations, service-level governance, and issue resolution to ensure operational continuity and client satisfaction.

Operations and Livestock Manager

January 2008 – October 2014

Conquela Agrilogistics | On-Farm & Travel (South African Time Zone)

Specializes in full-scale agricultural operations, including feedlots, small stock herd management, and crop production. The company also focuses on cattle shows and stud genetic breeding programs utilizing global bloodlines, with a strong commitment to sustainable practices and regulatory compliance.

Agricultural Operations & Livestock Management:

- Directed full-scale feedlot, dairy, and small-stock operations, managing irrigation systems, crop cycles, nutrition planning, and stud breeding programs (A.I. and embryo transfers). Ensured productivity, sustainability, and compliance with industry regulations through hands-on oversight.

Sales, Marketing & Client Engagement:

- Managed auction preparation, livestock sales, genetics marketing, and client relationship development. Positioned high-value stud bloodlines and agricultural products competitively, supporting revenue growth and brand visibility.

Agronomy & Irrigation Optimization:

- Oversaw crop production cycles, soil management, and irrigation planning. Drove improvements in yield and resource efficiency through proactive field monitoring, research-based practices, and innovation in water usage.
- Operational Data Tracking & Performance Insights (Added Bullet): Implemented structured data tracking for feedlot performance, crop yields, and resource usage, enabling informed decision-making and improved operational forecasting.

HIGHER EDUCATION

Bachelor of Science (Honours) in Info Tech (Data Science):

(Feb 2026 – Nov 2026)

- Student Number: *CON-1020924-M1L0*

Eduvos University

Bachelor of Science in Information Technology (Software Engineering):

(Feb 2019 – Dec 2021)

- Final Year GPA: *3.8 / 10 Distinctions*

Richfield University

S.A.C Diploma in Agricultural Management:

(Feb 2009 – Jun 2011)

- Final Year GPA: *3.8 / 90% +*

Stonebridge Collage

Advanced Agronomy and Plant Nutrition:

(Feb 2006 – Nov 2007)

- Final Year GPA: *3.8 / 90% +*

Nosa Agriculture

PROFESSIONAL CERTIFICATIONS

PCEP – Certified Entry-Level Python Programmer:

Achieved: 8 Sept 2025

- Certification Number: *ZYWK.tAEJ.550V*

Microsoft Power Automate Functional Associate MB-200:

Achieved: 8 May 2024

- Certification Number: *8B0AD4-KE94C9*

Active (Yearly Renewal)

Microsoft Business Central Consultant Associate MB-800:

Achieved: 25 Sep 2023

- Certification Number: *7AA4IF-3275BD*

Active (Yearly Renewal)

BADGES



[ZYWk.tAEJ.550V](#)
Certification ID



[AFDCF8-504659](#)
Certification ID



[7AA4IF-3275BD](#)
Certification ID

OTHER SKILLS

Fruit Sorting:

Rhode's Food Group

- Peach's
- Plum's
- Pear's

Agriexpo Coordinator:

Chairman (Cattle section)

- Planning
- Marketing
- Sponsorships

SPORTS & HOBBIES

SPORTS

- Surf Ski
- Mountain Biking
- Hiking

HOBBIES

- Safaris & Outdoor Activities
- Research and prototyping
- Attending Auctions

ADDITIONAL EDUCATION



Computer Science

Feb 2018 - Jan 2019

Sheep Husbandry

Feb 2012 - Dec 2013

Stable Management

April 2008 - May 2010

Sustainable Agriculture

June 2013

Wool Classification

June 2013

Stockman (*Practical*)

August 2012

Award

A.I. & Pregnancy (*Practical*)

Aug 2010

Livestock Management

April 2010

Sheep Classification

October 2009 & 2010

Management Assistant

Feb 2009 - Nov 2011

TEFL

August 2019

Diploma in Computer Science

John's Academy

Advanced Certificate

ACS Distance Education

- Terminology and Breeds.
- Selection and Breeding.
- Nutrition of Sheep.

H.S. Dip. in Stable Management

Stonebridge Collage

Certificate in Agriculture

Nutri-Tech Solutions

- Mineral Management
- Microbe Management
- Plant Management
- Pest Management

Accredited in Wool Classification

CAPE WOOL & MOHAIR:

Junior Wool Classification

Stockmans Certification

Aldam Stockman's school

Top 10 out of a 150 Candidates.

Accreditation in Cattle

Rothman Livestock Services

- Artificial Insemination (Cattle)
- Pregnancy Inspection (Cattle)

Certificate in Management

Mildex Livestock Training

- Backgrounding
- Actioner Planner

Dorper Sheep Accreditation

Dorper Sheep Breeders Society

- Junior Classification
- Senior Classification

Microsoft Office

Dept of Education, Kathu Collage

- Introduction N4
- N4
- N5
- N6

Teaching English Language

Let's TEFL International

OTHER ADDITIONAL INFORMATION

AI-Driven Smart Farm Management System – Independent Project

- Architecting and developing a modular, AI-powered ecosystem for zone-based precision agriculture, IoT integration, and agri-business intelligence.
- Leveraging machine learning, deep learning, and NLP for real-time soil and environmental analysis.
- Designed to enable intelligent decision-making, predictive insights, and data-driven resource optimization across multiple agricultural sectors.
- Technology Stack: Python, Pandas, NumPy, PyTorch/TensorFlow, IoT Sensor Networks, Azure Cloud.

Cultrax Seed-to-Sale Tracing System – Company Project (Afriplex Pty Ltd)

- Enterprise-level pharmaceutical traceability system using Microsoft Business Central AL, Visual Studio, and Azure database management.
- Built a custom ERP system ensuring full compliance with SAHPRA regulations, tracking production from planting to final product sale.
- Delivered automated dashboards and reporting pipelines for operational efficiency.

Website: www.cultrax.com

Metadata Clinical Trial Platform – Company Project (Afriplex Pty Ltd)

- Developed a secure web platform for research doctors focusing on chronic pain clinical trials.
- Automated patient sign-up, medical history documentation, and compliance with medical regulations and privacy standards (POPI/Personal Information Act).
- Integrated Azure APIs and SQL for data storage, retrieval, and reporting.

Website: www.metadata.co.za (*site no longer active*)

PUBLICATION AND RESEARCH

- **Hereford Journal, 2011:** Hereford Top Breeder and Bio. [Publication Link](#)
- **Landbouweekblad, 2013:** Aldamstockmans School, Top 10 out of a 130 Candidates. [Publication Link](#)
- **Hereford Youth Show, 2014:** Hereford Youth Show Championship. [Publication Link](#)

OTHER ADDITIONAL INFORMATION

SPECIALIZATION:

- **Postgraduate in Data Science:** Enrolled for 2026
- **Future Studies:** Artificial Intelligence in Energy, AgriTech and Manufacturing