

CURRICULUM VITAE: JACO MOOLMAN

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CV: <https://jacomoolman.co.za/curriculum-vitae/>

Personal Projects: <https://jacomoolman.co.za/projects/>

OVERVIEW

I am a Machine Learning Engineer and versatile information technology professional with more than 20 years of experience across banking, telecommunications, insurance and IT. My background combines production operations, software support and systems administration with Python automation, AWS cloud engineering and applied AI. I design reliable, maintainable workflows that move machine learning beyond experimentation into production through model lifecycle practices, infrastructure automation, testing, monitoring and operational support. I have introduced MLflow across production models, delivered event-driven cloud and data pipelines, and built internal AI services used across a major bank. I am certified in AWS machine learning and cloud technologies, Red Hat Linux and IBM AIX, and bring deep financial-services context, practical problem-solving and a strong focus on performance, reliability and continuous improvement.

SUMMARY OF EMPLOYMENT

CAPITEC	<i>Machine Learning Engineer, Level 2</i>	<i>Sep 2026 - Present</i>
	<i>Machine Learning Engineer, Level 1</i>	<i>2022 - Sep 2026</i>
	<i>Automation Engineer</i>	<i>2017 - 2021</i>
FIRST NATIONAL BANK	<i>Software Support Engineer</i>	<i>2015 - 2017</i>
SPI	<i>Systems & Software Specialist</i>	<i>2015</i>
MTN	<i>System Administrator (AIX)</i>	<i>2012 - 2015</i>
IBM	<i>System Administrator (AIX)</i>	<i>2007 - 2012</i>
	<i>Systems Operations Monitor</i>	<i>2006</i>
DISCOVERY HEALTH PTY LTD	<i>Systems Operations Monitor</i>	<i>2001 - 2006</i>
JOHANNESBURG STOCK EXCHANGE	<i>Systems Operations Monitor</i>	<i>2000 - 2001</i>
SOUTH AFRICAN RESERVE BANK	<i>Systems Operations Monitor</i>	<i>1999 - 2000</i>
BRUNEL	<i>Information Technology Administrator</i>	<i>1998 - 1999</i>

REFERENCES

1. [Francois Ferreira](#), Team Lead, AI Platform, Capitec
2. [James Ostrowick](#), Manager at FNB (now Capitec)
3. [Deon Naude](#), Manager and Team Lead at MTN

Additional references: <https://jacomoolman.co.za/references/>

CURRENT MACHINE LEARNING & AUTOMATION DELIVERY

- Introduced MLflow and repeatable MLOps practices across multiple production models, covering training, registration, deployment and monitoring.
- Designed an automated MFT-to-n8n migration platform that provisions workflows through backend APIs across multiple SDLC environments, with validation, testing and failure alerting.
- Built VASQL, an LLM-powered natural-language-to-SQL service combining multiple bank data sources and enabling company-wide self-service access, including executive users.
- Delivered an SFTP-to-cloud-to-ETL-to-warehouse licence-data pipeline and an AWS Bedrock/Claude service that converts enquiry emails into structured entities.
- Implemented real-time downtime monitoring and anomaly alerting for production services; rolled out Grafana, QuickSight and n8n for reporting and observability.
- Supported cloud architecture with Terraform-based automation, cross-account access, monitoring integration, tagging standards and automated non-production shutdown for cost control.
- Automated file transfer, cloud-storage migration, job scheduling, voucher redemption, travel and gifts-compliance approvals, vendor invoicing and secure multi-environment vendor integrations.
- Built automated executive outage reporting from multi-source chat and image evidence, plus a graph database exposing hidden relationships and transaction flows for fraud detection.
- Led AI enablement across a 70+ person engineering team and served as a technical escalation point for AI, cloud and infrastructure issues.

SKILLSET AND SYSTEM APPLICATION EXPERIENCE

Programming & Scripting

- Python, PowerShell, Bash, SQL, Terraform, MQL4/5, DOS Batch

Production ML & MLOps

- MLflow, SageMaker, model training and registration, deployment, monitoring, inference workflows, Hugging Face, RAG, anomaly detection

CI/CD & Engineering

- GitHub Actions, GitHub, GitLab, Bitbucket, SourceTree, API integration, Flask, Postman; automated validation and testing

AWS Cloud

- S3, Lambda, EventBridge, Glue, Bedrock, CloudWatch, CloudTrail, IAM, EC2, SQS, SNS, API Gateway, Step Functions, Secrets Manager, Athena, Textract

Data, Scheduling & Observability

- MySQL, PostgreSQL, MS SQL Server, Grafana, Kibana, Elasticsearch, Control-M, GoAnywhere MFT, Jira, ITSM, PagerDuty

Platforms & Virtualisation

- Red Hat, CentOS, VMware, Hyper-V, VirtualBox, Docker (working knowledge), Anaconda, Windows Server, AIX, Solaris

CERTIFICATIONS

AWS Certification in Machine Learning Specialty	2023
AWS Cloud Practitioner	2019
Agile Certified Disciplined Agilist	2017
RED HAT Certified System Administrator (Linux 7)	2017
IBM System Administrator (AIX 7)	2014

PRESENTATIONS

1. Generative AI and the impact on modern work life. <https://tinyurl.com/genaitalk1>
2. Generative AI for accessibility, presented at a technical meetup. <https://tinyurl.com/genaitalk2>
3. Claude Code AI Productivity Masterclass.

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PERSONAL PROJECTS

Selected highlights are below; the full portfolio is available at <https://jacomoolman.co.za/projects/>

1. Built a recruiter-facing RAG assistant for virtual interviews.
<https://jacomoolman.co.za/livechatbot/>
Created an OpenAI-backed retrieval system, hosted API and custom HTML chat interface.
2. Built an end-to-end accessibility application for visually impaired users.
<https://jacomoolman.co.za/snapsight/>
Combined generative AI, AWS, vision APIs, Android development and text-to-speech.
3. Designed a self-improving and self-correcting ML code platform.
<https://jacomoolman.co.za/auto-code-bot/>
Used LLMs to generate, test and iteratively improve machine-learning code.
4. Automated realistic synthetic bank-statement generation for fraud research.
<https://jacomoolman.co.za/trainingbankstatements/>
Produced real and fraudulent PDF data for anomaly-detection training.
5. Explored genetic algorithms for lottery-number experimentation.
<https://jacomoolman.co.za/genetic-lotto/>
Used PowerShell to build, run and graph genetic algorithms.
6. Created a fully automated video-generation workflow.
<https://jacomoolman.co.za/automating-youtube-fame/>
Used Python to generate video, audio, backgrounds and text automatically.
7. Automated grocery expenditure tracking from receipt photographs.
<https://jacomoolman.co.za/ai-shopping-list/>
Used OCR and generative AI to extract purchases and calculate monthly costs.

OTHER TRAININGS

A Modern & Essential Guide to Mastering the Python Programming Language (Udemy)	2024
AWS Solutions Architect Associate SAA-C03 (Udemy)	2023
Introduction to Machine Learning (Kaggle)	2021
Data and Analytics Foundation Programme (Capitec Leading Edge Academy)	2021
Python for Beginners (Simplilearn)	2021
Data Analytics Fundamentals (AWS)	2021
MySQL for Beginners (Torque IT)	2016
CA Service Desk Manager (CA Southern Africa)	2011
SA200-S10 Intermediate System Administration for Solaris 10 OS	2005
SA 118 Fundamentals of Solaris	2003
Tandem Concept & Facilities	2001
Matric Senior Certificate	1998

Copies of certificates are available at <https://jacomoolman.co.za/curriculum-vitae/>