

Maurice Van Der Merwe

AI Engineering Leader | Head of Technology | Cloud & AI Platform Architect

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Mauritian Passport (Visa-free EU & UK access) • US B1-B2 Visa • SA Passport

PROFESSIONAL SUMMARY

AI engineering leader and technology executive with 21+ years designing and delivering enterprise-grade cloud, data, and software platforms — combining hands-on engineering with architecture leadership across distributed systems, microservices, API platforms, event-driven processing, and full lifecycle delivery.

Co-Founder & Head of Technology at Nova Res, building a medical AI platform with GPT-5.4 reasoning, MedCPT embeddings, 4 live agents (11-agent architecture), RAG pipelines, containerized ingestion, and KEDA autoscaling on Azure. Building PRISM, an agentic SDLC platform with interchangeable model backends (GPT, Claude, Gemini) and human-in-the-loop orchestration. Previously designed security architecture, IPv6 dual-stack migration, and application architecture for a custom Palantir Foundry platform as Senior Software Engineer at BMW IT Hub.

Known for aligning technical design with business outcomes, improving platform reliability, and shipping secure, scalable systems in regulated environments. AWS Security Specialty certified.

KEY ACHIEVEMENTS

- **90% security incident reduction** through AWS firewall modernization aligned to Well-Architected SEC06 (BMW IT Hub) and automatic monitoring and remediation of Wiz findings
- **€1.2M annual cost reduction** — as a team we won 'Loser of the Year' award 2025 for largest spend reduction via storage optimization, data pipeline efficiency, EC2 right-sizing, and serverless migration (BMW IT Hub)
- **Implemented IPv6 dual stack migration** across 5 AWS accounts through zero-downtime for the custom Palantir Foundry platform serving > 5000 active customers (BMW IT Hub)
- **NIST CSF 2.0 outcomes** reconciled and delivered with executive remediation roadmap (Hariss International)
- **Designed and led the implementation of medical AI decision support system** with containerized 4-stage ingestion pipeline, KEDA autoscaling, 9 agentic orchestration for high accuracy, low hallucination and grounded answers verified against medical guidelines (Nova Res)
- **Developed agentic SDLC orchestration SAAS platform** with MCP server, tiered access control, and multi-agent orchestration with human in the loop guards (PRISM)

PROFESSIONAL EXPERIENCE

Co-Founder & Head of Technology | Nova Res (via Zuse Systems)

Jan 2026 – Present

Durban, KwaZulu-Natal, South Africa

- Led a team of 3 developers and 1 project manager delivering the Nova Res medical AI platform
- Built FastAPI backend with React frontend integrating Azure OpenAI, LangChain, and Neo4j knowledge graphs
- Developed PubMed and ClinicalTrials.gov data services with near real-time updates
- Designed modular microservices architecture for rapid iteration and HIPAA readiness
- Architected 11-agent clinical AI architecture with 4 core agents live (Coordinator, Retriever, Generator, Verifier) and 7 specialized medical agents in development (Drug Safety, Clinical Reasoning, Knowledge Graph, Guideline, Patient Context, Scorer, Safety Gate)
- Architected and operated a containerized four-stage mass-ingestion pipeline (parser, processor, embedding, indexer) on Azure Container Apps
- Implemented KEDA event-driven autoscaling on Blob/Event Hub backlog with consumer-group isolation and throughput-oriented scaling profiles

- Built PubMedQA evaluation pipelines for side-by-side legacy vs agentic benchmarking with deterministic sampling, row-level telemetry, and reproducible outputs
- Implemented dataset quality gates and contract validation harnesses to ensure leak-resistant evaluation inputs and benchmark artifact integrity

Founder & Software Architect (Concurrent Venture) | AverSoft

Jan 2008 – Present

Durban, South Africa

- Independent consultancy delivering 30+ engagements across retail, real estate, IoT, logistics, and manufacturing
- Designed and built PRISM (Alpha — in active internal use), an agentic SDLC platform with multi-agent orchestration, interchangeable LLM backends (GPT, Claude, Gemini), context engineering, and human-in-the-loop workflow control
- Implemented streaming LLM orchestration loops with model-agnostic provider abstraction, tool execution, lifecycle state tracking, and recovery-aware workflow control
- Built checkpoint-driven human-in-the-loop controls with idempotent responses and reconnect-safe pending checkpoint recovery
- Delivered execution and verification APIs that discover plans, launch agents, persist verification snapshots, and enforce approval gates
- Designed hardware/software stack for IoT home automation and energy monitoring platform

Cybersecurity Assessment Lead (Consultant) | Hariss International - Uganda Plant

Jan 2026 – Mar 2026

Uganda

- Conducted 13 stakeholder interviews across 8 departments in a 5-day assessment window
- Assessed and reconciled 24 in-scope CSF outcomes using an evidence-weighted scoring model
- Produced client-ready deliverables including detailed assessment report, presentation guide, and top critical findings
- Prepared and delivered executive presentation of assessment findings and remediation roadmap to C-level leadership
- Built validation and scope-filter workflows to separate in-scope vs out-of-scope outcomes and reduce scoring drift

Senior Software Engineer | BMW IT Hub

Nov 2022 – Dec 2025

Johannesburg, South Africa

- Designed architecture for security, IPv6 dual-stack migration, and application layers for the custom Palantir Foundry platform within a 16-person platform engineering team
- Architected ServiceNow and Palantir Foundry integration platforms with microservices patterns, API routing, role-based controls, and real-time synchronization
- Designed and migrated enterprise IPv6 dual-stack transformation across Foundry domains, including ALB/NLB traffic paths, Route53 DNS (A/AAAA), NAT64, and PrivateLink connectivity
- Defined and executed IPv4 reduction strategy across multiple AWS accounts, including reclaim analysis, migration sequencing, and validation runbooks
- Architected AWS firewall and security group modernization aligned to Well-Architected SEC06 principles with defense-in-depth controls
- Integrated Wiz cloud security capabilities into security governance workflows to strengthen posture visibility and remediation tracking
- Established CI/CD standards, automated testing gates, and observability practices for reliable multi-environment platform delivery
- Led cloud cost optimization — storage lifecycle automation, data pipeline improvements, EC2 right-sizing, server-to-serverless migration, and unused asset cleanup

EARLIER CAREER — INDEPENDENT CONSULTING & CONTRACT ENGINEERING (2005–2022)

17 years delivering software engineering, cloud infrastructure, BI, IoT, and systems integration across retail, gaming, real estate, manufacturing, logistics, and fintech. Notable engagements:

- Saqqara Business Discovery / Turners Shipping (2020–2022) — Contracted to Saqqara, subcontracted to Turners. Designed AWS infrastructure (VPN, DR, autoscaling), hybrid cloud architecture with on-prem Active Directory integration, and database migration using AWS DMS
- Digiflo (2022) — Cloud Engineer delivering Azure integration services and API deployments using Service Bus, Functions, and Terraform
- Boxer Superstores (2006–2019, multiple engagements) — AI-powered demand forecasting system (ARIMA/ETS/TBATS in R with multi-seasonal modelling) feeding custom budgeting application via SQL Server ML Services, demand planning & pricing tools, route optimization (genetic algorithms), BI platforms (SSAS, Power BI, ETL/Kimball), mobile GRV scanner integration
- Disruptive Vision UK (2014) — Led IPTV endpoint and portal development with Android multicast and VLC core integration
- Acutts Real Estates (2010–2012) — Built N-tier real estate platform adopted by 120+ franchises with Property24 integration
- Boss Gaming / Babylon Casino (2009–2016) — Scheduling optimizer (genetic algorithms), sports betting engine (BetFair API), bingo automation with embedded hardware
- International Prepaid Meters (2017) — Payments-enabled utility token platform with hardware cryptography integration

CERTIFICATIONS

AWS Certified Security – Specialty • AWS Certified Solutions Architect – Associate • AWS Certified Developer – Associate • AWS Certified Cloud Practitioner • Oracle Cloud Infrastructure (OCI) AI Engineering

TECHNICAL SKILLS

Cloud & Infrastructure: AWS (EC2, Lambda, API Gateway, VPC, ALB/NLB, Route53, WAF, Network Firewall, RDS, DMS), Azure (OpenAI, Container Apps, Event Hubs, Functions, ACR), Terraform, CloudFormation, KEDA, Microservices Architecture, IPv6 Architecture, DNS

AI/ML & Orchestration: Azure OpenAI, Claude SDK, OpenAI SDK, Gemini SDK, LangChain, Agent Orchestration (Multi-Agent, Tool Execution Loops), Model-Agnostic Provider Abstraction, Context Engineering (Document Extraction, Provenance Tracking), MCP Protocol (Agent SDK), Human-in-the-Loop Checkpointing, RAG Pipelines, Prompt Engineering, PubMedQA Benchmarking

Data & Integration: Palantir Foundry, Snowflake, Kafka, Neo4j, FastAPI, REST/GraphQL, DynamoDB, S3, Event-Driven Ingestion, FHIR-aligned Processing, PubMed APIs

Security & Compliance: AWS Well-Architected, NIST CSF 2.0, OWASP, Wiz, IAM, KMS, Secrets Manager, PHI Access Controls

Development: TypeScript, Python, C#/.NET, Java, Angular, React, Vue, Node.js, Next.js, PHP/Laravel

DevOps: GitHub Actions, Harness, CI/CD Pipelines, Docker, Azure DevOps, Infrastructure-as-Code, Pytest, Jest

EDUCATION

National Diploma IT Software Development — Durban University of Technology, 2003–2005

LANGUAGES

English (Native) • French (Conversational)