

Logan Venter

Senior AI/Platform Engineer

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Logan Venter is a Senior AI/Platform Engineer with over 20 years of software development experience, based in South Africa. He architects and builds production AI platforms, from multi-protocol server frameworks to agentic chatbot platforms to RAG-powered knowledge bases. His current focus is enabling organizations to deploy LLM-powered systems with enterprise-grade reliability.

Professional Experience

Senior AI/Platform Engineer

Telesure Investment Holdings *Aug 2025 - Present*

Contractor via DotCom Software Solutions

- Architected a multi-project agentic AI platform applying iDesign methodology with strict dependency direction and protocol-based dependency inversion
- Designed and built production RAG pipelines with hybrid retrieval, hierarchical summarization, and hallucination detection
- Implemented agentic planning and orchestration patterns including ReAct, Plan-Execute, and Adaptive strategy selection
- Applied enterprise security patterns: multi-turn attack detection, prompt injection defense, risk-based capability restriction
- Integrated multiple LLM and embedding providers with factory-based routing and graceful degradation
- Built a self-service administration portal for bot lifecycle management, knowledge versioning, and deployment orchestration
- Designed observability infrastructure with structured logging, correlation IDs, and A/B testing metrics
- Leading technical architecture decisions and mentoring team members on AI/ML and clean architecture best practices

Senior Software Developer

Derivco *Nov 2018 - Jun 2025*

- Led internal AI initiative with dynamic prompt generation for OpenAI API integration
- Architected LLM-powered automation tools for SDET and code review workflows
- Applied iDesign architectural methodology for maintainable backend systems
- Led technical development, release, and maintenance of software systems
- Drove CI/CD pipelines and technical roadmap for multiple products
- Mentored junior developers

References: Chris Coetzee (+27 82 548 8817), Ockert Du Preez (+27 72 829 0170), Paul Kotze (+27 82 901 7953), Albie van Zyl (+27 79 492 5393), Gopi Kistasami (+27 83 616 1371)

Senior Software Developer GMIC.Net (Consultant)

Dynamic Visual Technologies (DVT) *May 2016 - Nov 2018*

- Developed features and bug fixes as consultant
- Managed CI/CD build processes
- Handled branch and release management with Git

References: Khumo Jele (+27 81 447 9732)

Software Developer / Team Lead

Seecrypt *Jun 2015 - Apr 2016*

- Windows team lead for encrypted communications application

- Development in C#, C++, WPF, Silverlight
- Database work with SQLite-SQLCipher for encrypted storage

References: Annalinde Singh (+27 76 640 4766), Dino Fizzotti (+44 734 041 5199)

Director

Covariant Consulting *Jul 2014 - May 2015*

- System integration with Syspro ERP
- Business operations and client management

References: Ronete McKenzie (+27 61 682 2350)

Software Developer

UD Trucks *Nov 2012 - Jun 2014*

- UDCS system architecture and integration
- Software development for logistics systems

References: Ronete McKenzie (+27 61 682 2350)

Software Developer

Enermatics *Apr 2011 - Oct 2012*

- Wattkeeper energy management system development
- Software engineering for energy monitoring solutions

References: Melissa Wittstock (+27 82 750 0065)

Software Developer

Infotech *Sep 2009 - Mar 2011*

- Software development and system maintenance
- Technical support and feature implementation

References: Melissa Wittstock (+27 82 750 0065)

Programmer

Information Trade World *Jul 2007 - Aug 2009*

- Programming in COBOL, Visual Basic, and Delphi
- Website development

References: Maria Jacobs (+27 74 254 6027)

Featured Projects

Production MCP Server Framework for .NET 9

A Model Context Protocol server framework supporting multiple transport protocols with session management, JWT and API key authentication, JSON schema validation, and automatic tool discovery. Built for enterprise AI agent integrations.

- 6 transport protocols (stdio, REST, SSE, Streamable HTTP, SignalR, gRPC)
- 12+ production example server implementations
- LangChain/LangGraph integration with Python client support
- Session management with JWT and API key authentication
- JSON schema validation for tool inputs
- Automatic tool discovery from assemblies
- Cross-platform Docker deployment (Linux, Mac, Windows)

[.NET 9](#) [C#](#) [gRPC](#) [SignalR](#) [Polly](#) [FluentValidation](#) [LangChain](#)

Enterprise Agentic Chatbot Framework

Full-stack agentic chatbot platform with a 4-project architecture (Framework, Chatbot, Administration, Common) following strict iDesign dependency direction. Features production RAG with 14 chunking strategies, multi-LLM routing, planning coordination, multi-turn security, and admin portal with bot creation wizard.

- 4-project monorepo with strict iDesign dependency direction (Common ← Framework ← Chatbot/Admin)
- Production RAG engine with 14 chunking strategies, hybrid retrieval (BM25 + vector), RAPTOR hierarchical summarization, and hallucination detection
- Planning coordinator with 3 strategies (ReAct, Plan-Execute, Adaptive) and full agentic tool-calling loop with streaming
- Multi-turn security pipeline with prompt injection scanning, risk accumulation/decay, canary tokens, and capability restriction
- 4 LLM providers (Anthropic, Azure OpenAI, Ollama, GAIA) and 3 embedding providers with factory-based routing
- 6 vector store integrations (FAISS, Qdrant, Chroma, Pinecone, Weaviate, PKL) with semantic caching
- Multi-provider auth (Azure AD, JWT, API key) with RBAC engine
- OpenTelemetry + Elasticsearch observability with correlation IDs and A/B testing metrics
- Real-time audio transcription via WebSocket
- React + TypeScript + Vite frontends for both chatbot and admin UIs

Python LangChain LangGraph FastAPI React TypeScript Vite

Enterprise Agentic Administration Portal

Admin portal for creating, configuring, and managing chatbot agents. Features a 9-tab bot creation wizard with auto-metadata generation, knowledge base versioning with incremental updates, agent deployment management, and monitoring dashboard.

- 9-tab bot creation wizard with real-time validation and SSE progress streaming
- LLM-powered auto-generation of bot personality, system prompt, and greetings
- Knowledge base versioning with incremental updates (delta detection, embedding reuse)
- Agent deployment management with port allocation and health monitoring
- In-browser chat playground for testing deployed agents
- Dashboard with health status, usage metrics, and error logs

Python FastAPI React TypeScript Vite

AI-Powered Azure DevOps Integration via MCP

MCP server exposing Azure DevOps operations as AI-callable tools. Enables LLM agents to manage work items, pull requests, projects, and relationships through natural language.

- Work item management through natural language
- Pull request operations via AI agents
- Project and relationship management as MCP tools

.NET 9 C# Azure DevOps REST API MCP

AI-Powered Knowledge Base System

Production knowledge management platform with hierarchical document organization, semantic search via vector embeddings, dynamic Qdrant container management, and conversational RAG interface. Includes admin dashboard, file upload, and audit logging.

- Hierarchical document organization with tagging
- Semantic search via vector embeddings
- Dynamic Qdrant container management
- Conversational RAG interface for natural language queries
- Admin dashboard with file upload and audit logging

.NET 9 Python React Qdrant FastAPI

Hierarchical Code Review Agent System

Multi-agent system for automated code review and fix orchestration with recursive depth control. 30 specialized agents organized in a hierarchical numbering system covering backend and frontend quality analysis, security, accessibility, performance, and automated fix orchestration.

- 30 specialized review and fix agents with recursive orchestration

- Backend coverage: C#, Java, Python, Go, Node.js, Ruby, Rust, PHP
- Frontend coverage: React, Vue, Angular, Svelte
- Architecture, security (OWASP), test coverage, accessibility (WCAG), and UX heuristic reviews
- Automated fix agents coordinated by master orchestrators
- Hierarchical depth control preventing context fragmentation

Claude Opus Claude Sonnet Agent Orchestration iDesign

Technical Skills

C# / .NET 9 (Primary) — High-performance services, MCP frameworks, enterprise backend systems

Python (Primary) — LangChain, LangGraph, FastAPI, Pydantic, AI/ML pipelines

TypeScript / React (Strong) — Modern frontends, real-time chat interfaces, admin dashboards

Dart / Flutter (Strong) — Cross-platform mobile and desktop applications

SQL (Strong) — T-SQL, complex schemas, query optimization

C++ (Experienced) — Performance-critical and security applications

Frameworks & Tools

- LangChain and LangGraph for LLM orchestration
- Model Context Protocol (MCP) for AI agent tooling
- RAG pipelines with 14 chunking strategies, hybrid retrieval (BM25 + vector), RAPTOR, HyDE, ColBERT, Graph RAG, deep search, and hallucination detection
- Vector databases: Qdrant, FAISS, Pinecone, ChromaDB, Weaviate
- Multi-agent orchestration and recursive agent systems
- AI security: multi-turn attack scoring, risk accumulation/decay, canary tokens, spotlighting, tool chain validation, capability restriction
- Context management: rolling window, fallback summarization, conversation reranking and compression
- Prompt engineering, prompt security, and semantic search
- Multi-protocol backend (gRPC, SignalR, SSE, Streamable HTTP, WebSocket, REST)
- React and TypeScript for web frontends
- Flutter for cross-platform mobile/desktop
- Tailwind CSS for styling
- Docker, Docker Compose, and Rancher for containerization
- Cross-platform deployment (Linux, Mac, Windows)
- Azure cloud infrastructure
- CI/CD pipelines
- xUnit and Vitest for testing
- OpenTelemetry + Elasticsearch for observability
- A/B testing frameworks and experiment management

Architectural Concepts

- iDesign Methodology (trained by Juval Lowy)
- Domain-Driven Design (DDD)
- Clean Architecture
- Microservices and Event-Driven Architecture
- Authentication and Security (JWT, API keys, Azure AD, RBAC)
- Agentic AI Design Patterns (spotlighting, guardrails, tool use governance, human-in-the-loop orchestration, structured output filtering)
- Multi-turn security (prompt injection scanning, multi-turn attack scoring, canary tokens, risk accumulation/decay, capability restriction, output leakage detection)

- Content style enforcement and structured output generation with schema validation
- Database and Vector Storage (PostgreSQL, SQLite, vector databases)
- Observability patterns (correlation IDs, structured logging, OpenTelemetry)

Education

Diploma in C++ Programming

Intec College

Average of 73.1% - highest score in institution history as of 2006

Subjects: Intro to Programming, C++, Advanced C++, Systems Analysis and Design, Management Information Systems

Grade 12 (Matric with Merit)

Goudrif High School

Computer Training Institute floating trophy for best student (2002). Completed entire Matric Computer Studies syllabus in Grade 10.

Personal Interests

- Passionate about solving hard engineering problems
- Built a mobile game with 8,000 downloads on Windows Phone Store
- Built an Eskom load-shedding monitoring app (1,200 downloads in 2 weeks)
- Built a TV backlight system with color perception based on pixel analysis
- Guitar player and vocalist with public performance experience
- Original songs played on Jacaranda radio
- Recorded an album
- Songwriting as a creative outlet

Core Values

- Clean architecture and deliberate design decisions
- Deterministic systems with well-defined failure boundaries
- Code that communicates intent
- Direct feedback and honest technical discourse

References

Derivco

Chris Coetzee: +27 82 548 8817
Ockert Du Preez: +27 72 829 0170
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Gopi Kistasami: +27 83 616 1371

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