



Kobus van Schoor

Senior Software Engineer

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Experience

Tech Lead - Senior Software Engineer

DataProphet

Cape Town (Remote)

Nov 2022 - Present

Lead the engineering team for Edge, a real-time compute and ingestion data pipeline for factory environments. Responsible for systems architecture, optimization of real-time data streams, and low-level Linux systems security for a globally distributed fleet.

High-Performance System Optimization (Golang & Kafka): Re-architected the real-time cloud message broker using Golang, embedding an MQTT server and running data-streaming pipelines into Kafka. This achieved a **20x increase** in maximum ingestion rate while maintaining neutral compute costs and significantly improving fault tolerance.

Low-Level Systems Engineering (Linux Kernel): Designed a custom Full Disk Encryption (FDE) solution for distributed hardware, developing custom initramfs modules and a Tang-based key recovery service to maintain autonomous operation. Presented this work on securing the boot chain at the **Linux Security Summit Europe 2025**.

Data Pipeline & Protocol Architecture (Python): Refactored the core Python-based Edge software to support ODBC and File-based ingestion, broadening data support while improving on-device ingestion reliability across diverse industrial protocols.

Engineering Maturity & Operational Excellence: Spearheaded the transformation of the Edge team's operational standards by implementing the company's first Disaster Recovery (DR) SOP and testing procedures. Formalized the development lifecycle by standardizing release procedures, development environments, and guidelines across multiple projects.

Robust Network Architecture (Wireguard): Engineered fault-tolerant networking services, including a custom wrapper for Wireguard VPNs that manages multiple tunnel endpoints to ensure connectivity and failover in restrictive factory environments.

Infrastructure as Code & Scalability (Saltstack): Overhauled deployment automation, enabling the fleet to scale **3x** without increasing infrastructure costs.

Technical Leadership: Defined the product roadmap and technical strategy while providing strategic input on key contracts. Mentored junior engineers and conducted technical interviews to scale the Edge team.

<https://dataprophe.com/>

Education

BEng. Computer Engineering

University of Pretoria

2017 - 2021

Skills

Linux ↗ Python ↗ C/C++
↗ Golang ↗ FPGA ↗ Verilog
⌚ AWS ⌚ IaC ⌚ K8s

Talks

Recoverable, tamper-resistant full-disk encryption at the distributed Edge

Aug 2025

Linux Security Summit Europe

<https://youtu.be/ccWHZtsfk2M>

Certifications

Financial Analysis for Investment

Dec 2024

Gordon Institute of Business Science

Awards

Entelect Challenge 2022: 1st Place

Placed 1st in the Entelect Challenge, a programming competition where you design an AI bot to compete against other players in an RTS game.

<https://challenge.entelect.co.za>

Cloudflight Coding Contest: Top-35 Worldwide

Placed 32nd internationally in the 34th Cloudflight Coding contest, a coding competition where you have 4 hours to solve problems of increasing difficulty.

<https://register.codingcontest.org>

Experience (cont.)

DevOps Engineer & Developer

Momentum Investments

Pretoria, South Africa (Remote)

Jan 2022 - Oct 2022

Architected and streamlined DevOps operations and internal tooling for a large-scale financial services environment supporting over 100 projects. Focused on automating security within the SDLC, migrating critical cloud infrastructure to high-security environments, and enabling developer self-service through Infrastructure-as-Code.

Security Automation & Vulnerability Management (Python & Docker): Designed and developed "CVE Hunter," an automated security platform that discovered, cataloged, and scanned Docker containers for vulnerabilities and exposed secrets. By integrating this into the SDLC, overall software vulnerabilities were significantly reduced, and the system became a primary KPI for measuring development team security.

Infrastructure as Code & Cloud Migration (Terraform & EKS): Led the end-to-end architectural migration of all key cloud infrastructure - including Kubernetes (EKS) clusters, Cognito, and S3 - to a new strategic account. Rebuilt the environment to be fully reproducible and significantly reduced infrastructure costs by transitioning clusters to spot-instance-based compute.

Developer Enablement & Internal Tooling (Flask & AWS): Took over and advanced the development of core internal deployment orchestration tools using Python and Flask. This enabled decentralized development teams to independently maintain and provision standardized, secure AWS infrastructure.

Systems Hardening & Technical Debt Reduction: Initiated and deployed organization-wide projects to improve engineering maturity, including the implementation of hardened base Docker images, automated dependency updates, and static code analysis. Managed the ongoing maintenance of both AWS services and on-premises Linux infrastructure.

Team Lead: Developer and Linux Systems Administrator

University of Pretoria

Pretoria, South Africa

Jan 2018 - Dec 2021

Academic Platform Development: Led the full-stack development of the department's primary academic platform using Python (Django), replacing legacy infrastructure with a modern, scalable solution for handling mass student submissions and automated analysis.

Remote Code Execution: Designed a high-availability "automarker" system that processed and validated algorithmic code submissions, which posed significant security challenges and required performance tuning to handle burst traffic during assessment periods.

Projects

Custom C++ Machine Learning & Trading Simulation Library

Developed a high-performance, from-scratch C++ library for evolutionary strategy optimization. Engineered a Genetic Algorithm (GA) engine to autonomously evolve and optimize Neural Network weights and Decision Tree parameters for algorithmic trading.

Winning AI Bot (Entelect Challenge)

Built the 1st place AI agent for a national coding competition. Used Go to create a high-performance simulation engine that processed thousands of game states per second to optimize real-time strategy and decision-making.

EMG-Controlled Hand Exoskeleton

Developed an assistive wearable for paralysis using C on an STM32 microcontroller, achieving a 90% final project grade. Engineered a low-latency signal processing pipeline and an on-device machine learning classifier to translate raw neuromuscular data into five distinct mechanical grips, focusing on deterministic, real-time execution within a resource-constrained environment.

References (contact details available upon request)

Danie Olivier

IT Development Manager

Momentum Investments

Cornelius van Rooyen

Team Lead

University of Pretoria