

CHRISTIAAN NEL

Staff Engineer | Solutions Architect | Event-Driven AWS Platforms

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CAREER PROFILE

Solutions Architect with 18 years designing and operating high-scale software platforms for startups and large enterprises across parking, payments, community management, cryptocurrency, ICT services, and FMCG. The work is staff-level individual-contributor scope: org-wide architecture stewardship plus key senior implementation on the hard path, not pure advisory. At admyt, architects event-driven Amazon Web Services (AWS) microservices that process 42 million+ monthly parking and payment events, sustain 150+ peak events per second, and serve 200,000+ monthly active users.

Core competencies include solution design, system architecture, event-driven architecture, serverless and containerized microservices, payments orchestration, Infrastructure as Code with AWS CDK (CloudFormation), cloud cost optimization, observability, technical leadership, and full-stack delivery on Node.js, TypeScript, PostgreSQL, and React Native.

CAREER HIGHLIGHTS

- Lifted payment conversion above a historical 75% and raised payment availability by building a provider-agnostic orchestration layer that routes PayFast, Zapper, and PayU in parallel.
- Architected independently deployable event-driven AWS microservices (EventBridge, SQS/SNS, Lambda, ECS, EC2, ALB, Auto Scaling, MongoDB Atlas, RDS PostgreSQL) for a national ticketless-parking and payments platform now processing 42 million+ monthly events at 150+ peak events per second for 200,000+ monthly active users.
- Reduced month-to-month AWS infrastructure cost by more than 30% at Glovent Solutions, a 50,000+ MAU community-management platform, by re-architecting the serverless estate (API Gateway, Lambda, DynamoDB, RDS PostgreSQL, CloudFront, CloudWatch, SNS, EventBridge) and removing legacy CPU and storage bottlenecks.
- Reduced FMCG financial reporting turnaround from 8 days to 10 minutes by building Electron desktop applications that process large SAP exports into automated reporting pipelines.
- Compressed typical 3+ month software projects to delivery within one month by building an agentic software factory that automates specification, implementation, review, QA, and deployment.

PROFESSIONAL EXPERIENCE

ADMYT (PTY) LTD · Cape Town, South Africa

Dec 2024 – Present

Solutions Architect

National ticketless-parking and payments platform. 200,000+ monthly active users. Staff-level IC: architecture stewardship plus key senior implementation on high-risk platform work.

- Raised payment conversion above a historical 75% and improved payment availability by designing a provider-agnostic orchestration layer that dynamically routes PayFast, Zapper, and PayU in parallel.
- Architected event-driven AWS microservices (EventBridge, SQS/SNS, Lambda, ECS, EC2, ALB, Auto Scaling, MongoDB Atlas, RDS PostgreSQL) that process 42 million+ monthly parking and payment events and sustain 150+ peak events per second, designed to a 200 million monthly-event envelope (not achieved throughput).
- Streamed parking and payment event ingestion with Amazon Kinesis.
- Compressed typical 3+ month delivery cycles to about one month by building an agentic software factory from specification through implementation, review, QA, and deployment.
- Replaced a six-year React web application with React Native and Expo, improving mobile usability and enabling single-codebase iOS and Android releases.
- Gave operations real-time visibility of cameras and platform health across South Africa and Poland with Zabbix, and reduced AWS operating cost across EC2, ECS, ALB, and Auto Scaling by removing legacy CPU and storage bottlenecks.
- Stood up a Kubernetes proof-of-concept on EC2 with Terraform, and deployed Zabbix with Terraform.
- Integrated Amazon Cognito with identity federation (OAuth 2.0 / OpenID Connect).

KUBERKON (PTY) LTD · Pretoria, South Africa

Feb 2023 – Present

Managing Director and Tech Lead · Part-time consultancy alongside full-time roles

- Founded a cloud and software consultancy that rescued in-flight client systems and reduced delivery cost, including a rebuild of a 10-year-old PHP parts-acquisition platform for a major auto-parts insurer.

GLOVENT SOLUTIONS (PTY) LTD · Pretoria, South Africa**Apr 2020 – Mar 2022; Apr 2023 – Dec 2024****Senior Full-Stack Engineer***Community-management software company serving residential estates.*

- Reduced month-to-month AWS infrastructure cost by more than 30% by re-architecting the serverless estate (API Gateway, Lambda, DynamoDB, RDS PostgreSQL, CloudFront, CloudWatch, SNS, EventBridge) and removing legacy CPU and storage bottlenecks.
- Streamed community events with Amazon Kinesis and Kinesis Data Firehose, and delivered targeted resident communications with AWS Pinpoint.
- Grew a cloud-native community-management platform to 50,000+ monthly active users across web and hybrid mobile applications.
- Opened a new revenue stream with a full advertising and banner service for community administrators.
- Made AGM, SGM, trustee, and board voting live and tamper-resistant with WebSockets and an immutable ledger, and connected residents to national armed-response services through an SOS / panic feature.
- Designed a privacy-preserving, consent-gated dual-record identity model so a resident owns one platform profile while each community keeps its own first-class resident record. Sharing is opt-in, invite, or request only; when a resident leaves, sync stops and the community retains only its historical slice.
- Built primary user authentication on Amazon Cognito (OAuth 2.0 / OpenID Connect), and ran Amazon Aurora Serverless v1 and v2 proof-of-concepts.
- Stood up Agile and DevOps delivery and shipped the platform to production in five months.

LUNO SA (PTY) LTD · Johannesburg, South Africa**Apr 2022 – Mar 2023****Senior Web Developer***Global cryptocurrency exchange.*

- Stabilized crypto onboarding by leading a refactor of critical KYC-to-first-purchase web flows, improving reliability and maintainability.
- Enabled card-funded crypto purchases by integrating Stripe, and raised release confidence by introducing Cypress end-to-end tests.

SELF-EMPLOYED · Pretoria, South Africa**Oct 2019 – Apr 2020****Software Developer · Contract delivery for an FMCG operator**

- Reduced FMCG financial reporting turnaround from 8 days to 10 minutes, and Volume–Price–Mix analysis from 14 days to 15 minutes, with Electron desktop apps that process large SAP exports into automated reporting pipelines.

UNIVERSITY OF PRETORIA · Pretoria, South Africa**Aug 2018 – Sep 2019***Full-time sabbatical · Completed Master of Theology (M.Th, awarded 2020)***BIG BRAVE / BEVERAGE INSIGHTS · Johannesburg, South Africa****Jan 2015 – Jul 2018****Senior Software Developer and IoT Engineer**

- Delivered production web platforms and APIs with Paygate, Twilio, and loyalty integrations supporting payments, messaging, and marketing.
- Built end-to-end IoT beverage-consumption telemetry using ESP8266, C++, MySQL, and Google Cloud, and kept a commercial property-management platform available on load-balanced Ubuntu and MySQL / MongoDB clusters.

CONTRACT ENGINEERING · Johannesburg / Pretoria**Feb 2014 – Nov 2017****Freelance Software Developer · BTCSA · RGB Vision · Vektron Energy**

- Launched an online student-payment portal with SnapScan and PayGate integrations, reduced hosting cost for a tertiary institute, and delivered WordPress / LAMP platforms plus energy-telemetry reporting portals.

BCX · Johannesburg, South Africa**Feb 2008 – Feb 2014****System Engineer***Large African ICT services provider. Winner of the 2010 BCX X-Calibre Award.*

- Recovered revenue and tightened overtime control by delivering a Delphi / MySQL workforce and billing information system for leave, tasks, calendars, and charge-back.
- Kept MySQL highly available across data centres, provided DBA consulting to enterprise clients including Africa Bank, removed ASG-Zena bottlenecks for a large retailer, and maintained IBM AIX, Sun Solaris, and IBM P595 systems.

TECHNICAL SKILLS**Architecture:** Event-Driven Architecture, System Architecture, Microservices, Serverless Architecture, Distributed Systems, Solution Design, Cloud Cost Optimization, Payments Orchestration, Observability, Technical Leadership**Cloud & Data:** Amazon Web Services (AWS), AWS Lambda, Amazon API Gateway, Amazon SQS, Amazon SNS, Amazon EventBridge, Amazon Kinesis, Amazon Kinesis Data Firehose, Amazon ECS, Amazon EC2, Elastic Load Balancing (ALB), Auto Scaling, Amazon CloudFront, Amazon CloudWatch, Infrastructure as Code, AWS CDK (CloudFormation), Terraform, AWS Secrets Manager, Amazon RDS, Amazon Aurora, Amazon DynamoDB, MongoDB Atlas, Amazon S3, Amazon Cognito, AWS Pinpoint, OAuth 2.0, OpenID Connect (OIDC), AWS Amplify, Docker, PostgreSQL, MySQL, MariaDB, MongoDB**Languages & Stack:** Node.js, TypeScript, JavaScript, Python, PHP, REST APIs, Express.js, WebSockets, React Native, Expo, React, Angular, Ionic, Capacitor, C++**Delivery:** CI/CD, Git, GitHub, GitLab, Bitbucket, Zabbix, Cypress, Test-Driven Development (TDD), Nx, Agile, Scrum**EDUCATION AND TRAINING****University of Pretoria — Master of Theology (M.Th)****2020****Baptist Theological College of Southern Africa — B.Th Cum Laude (2017), Dip.Th (2016)****2016 – 2017**

MySQL for Database Administrators, Oracle University (2013) · AWS Developer Associate exam preparation (Udemy, 2020) · Agile Fundamentals (Scrum and Kanban) (Udemy, 2020) · Test-Driven Development (Udemy, 2022) · React Native — The Practical Guide (2021) · Angular Testing Masterclass (Udemy) · Angular and NodeJS — The MEAN Stack Guide (Udemy) · Angular — The Complete Guide (Udemy) · Beginning C++ Programming – From Beginner to Beyond (Udemy) · Machine Learning with JavaScript (Udemy)