

Neil Crow

Staff Engineer | Systems Architect | Financial Infrastructure

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Executive Summary

Staff Engineer / Systems Architect (Financial Infrastructure & Distributed Systems)

Staff-level engineer and systems architect with 25+ years designing and operating business-critical financial systems across banking, capital markets, securities settlement, trading, reconciliation, and ledger platforms.

Extensive experience building systems where correctness, consistency, auditability, resilience, and financial integrity are primary design concerns. Delivered sub-ledger, settlement, reconciliation, transaction processing, integration, and reporting platforms supporting regulated financial institutions across multiple jurisdictions.

Strong background in distributed and event-driven architectures, messaging systems, high-availability environments, and large-scale system integration. Experienced in designing fault-tolerant services, financial source-of-truth platforms, and operational workflows under regulatory scrutiny.

Hands-on technical leader with a proven track record of owning complex systems end-to-end, influencing architecture, mentoring engineers, and partnering with business, operations, and compliance stakeholders.

Education

BSc	University of South Africa , Information Technology and Computer Science Software Engineering Stream	Nov 2011
NC	University of South Africa , National Certificate in Data Metrics • cum laude	Oct 2006

Certifications

AWS Certified Solutions Architect - Associate	May 2026
Sun Certified Java Programmer	June 2002
National Diploma in Structured COBOL Programming	Nov 1994

Courses

Tibco - EMS301 Enterprise Messaging Service	June 2007
Tibco - BW611 BusinessWorks Integration	June 2007
Informatica - Data Integration (ETL)	Sept 2007
Platinum Education - SQL Programming for DB2	June 1996
IBM - CICS Command Level Coding	June 1995
IBM - CICS Advanced Application Coding	June 1995
Cobol Programming - Advanced Structured Cobol	Nov 1992

Experience

Apex Group, System Architect / Staff Engineer

IQ Application Suite, ESG Platform & Loans Lab

London, UK

Oct 2021 – present

4 years 10 months

- Lead development of containerised applications and supporting microservices deployed on Kubernetes, designing reliable service boundaries, integration patterns, and operational processes across multiple environments.
- Architected and delivered distributed applications and supporting services, improving observability, deployment consistency, operational resilience, and integration across the wider technology estate.
- Designed and implemented CI/CD pipelines supporting automated build, test, and deployment workflows with authorization.
- Collaborate closely with product managers to shape, prioritise, and deliver roadmap features across iterative releases for the Private Equity focussed ESG Platform.
- Led adoption of AI-assisted capabilities within the Apex platform, initially integrating services from an external AI partner before transitioning to internally governed solutions using Azure AI Foundry. Introduced AI-assisted engineering practices using Microsoft HVE and agent-based tooling, improving developer productivity and accelerating delivery through architectural analysis, code generation, and documentation support.
- Provide leadership on architectural decisions spanning service boundaries, data modelling (Oracle), and integration patterns to downstream systems including Snowflake and an AI partner platform.
- Defined data models and integration patterns supporting auditability, traceability, and controlled data movement across regulated investment-management workflows.
- Improved observability and operational excellence through structured logging, metrics, and alerting across multiple environments.
- Operate within a SAFe-scaled agile framework, with prior experience across multiple agile methodologies.
- Drive technical excellence by balancing hands-on delivery with design oversight, pair programming, and proactive mentorship.
- Guided the loans lab team on the containerisation initiative using similar principles to the ESG platform above but with different tooling based on AWS and Github.

Standard Bank / Infomet, Staff Engineer / Technical Lead

Pan-African Sub-Ledger Platform

Johannesburg, ZA

Apr 2011 – Sept 2021

10 years 6 months

- Architected and delivered a mission-critical financial sub-ledger platform deployed across 18 African countries, serving as a financial source of truth for trading, core banking, credit-card, and asset-finance systems.
- Acted as technical authority for posting engines, data ingestion, reconciliation, and financial correctness across multiple asset classes, including bonds, FX derivatives, loans, and money markets.
- Ensured financial consistency and integrity across distributed processing workflows involving bonds, FX derivatives, loans, money-market instruments, and other asset classes.
- Partnered closely with finance, operations, and risk stakeholders to ensure regulatory and reporting requirements were reflected in platform design.
- Led incremental evolution of the platform over a decade, including database upgrades, infrastructure modernisation, and build/deploy automation.
- Developed reusable financial and technical components adopted across multiple streams, reducing duplication and operational risk.
- Worked closely with business analysts and finance stakeholders to translate complex financial requirements into robust, auditable systems.
- Improved delivery reliability through automated deployments, environment promotion, and source-control standardisation.

Standard Bank, Software Engineer / Technical Lead

CIB Treasury Calypso Trading System

- Served as technical lead for the Calypso trading platform within CIB Treasury, owning the technical design and implementation for onboarding new product types, including government and corporate bonds and floating-rate money market instruments.
- Acted as the primary technical authority on Calypso for treasury and capital markets workflows, supporting business analysts and front-office stakeholders in translating complex product requirements into robust system implementations.
- Represented Standard Bank CIB on industry-wide working committees with the Central Securities Depository, contributing to and influencing market-wide interface specifications that were subsequently adopted as the country standard.
- Led significant improvements to the development lifecycle for Calypso teams, migrating builds from Ant to Maven, introducing unit testing, and establishing a standardised build structure adopted across multiple teams.
- Improved technical and business documentation practices by introducing structured, shared documentation via internal wiki platforms, reducing knowledge silos and improving operational transparency.
- Remained hands-on throughout, contributing directly to code, build tooling, and integrations while providing technical leadership across the platform.

Johannesburg, ZA

Jan 2010 – Mar 2011

1 year 2 months

Rand Merchant Bank, Domain Architect - Integration

Lead for Integration Centre of Excellence

- Served as Domain Architect for integration across the RADA reporting and analytics project, owning end-to-end integration and orchestration between 19 upstream source systems and Oracle Financials.
- Led integration architecture for a bank-wide KYC programme, defining verification workflows, orchestration patterns, data lineage, and interfaces across multiple systems of record.
- Designed and implemented enterprise integration architecture using TIBCO integration suite and Informatica ETL, ensuring data consistency, traceability, and reliability across heterogeneous systems.
- Acted as Technical Architect for the Master Data Management platform, designing and delivering a JEE-based application deployed on JBoss to manage shared reference and master data.
- Served as Technical Lead for the Enterprise Application Integration (EAI) programme, evaluating commercial and open-source ESB technologies and shaping the bank's integration strategy.
- Remained hands-on throughout, contributing to Java/JEE development, build tooling, automated testing, and integration components.
- Improved engineering discipline and delivery quality through XP practices, pair programming, automated builds, and shared documentation using Jira and Confluence.
- Developed internal tooling, including an open-source Jira plugin enabling LDAP-based single sign-on with Active Directory, improving developer productivity and platform usability.

Johannesburg, ZA

Nov 2006 – Dec 2009

3 years 2 months

STRATE Limited, IT Development Manager / Technical Architect

CSD & Securities Settlement System

Johannesburg, ZA

Oct 2001 – Oct 2006

5 years 1 month

- Progressed from Front-End Team Lead on a mission-critical C++ settlement application to IT Development Manager, with responsibility across Java and COBOL/CICS/DB2 development teams.
- Held overall technical responsibility for systems supporting the settlement and reconciliation of equity, bond, money-market, and OTC transactions across national financial-market infrastructure.
- Designed systems where transactional correctness, fault tolerance, auditability, and regulatory compliance were mandatory operational requirements.
- Led the migration of the SAFE platform from IBM C++ to J2EE, designing the target architecture and delivering a production system deployed across JBoss and WebSphere on Windows and AIX.
- Owned architecture and delivery across a heterogeneous estate spanning Java/J2EE front-end systems and mainframe back-end services, with a strong focus on correctness, resilience, and regulatory compliance.
- Designed and delivered integration and messaging solutions supporting high-value financial transaction flows through SWIFT, FIX, XML, and JMS-based workflows, including message routing, transformation, and tracking capabilities.
- Planned and implemented web-based reporting and data-sales platforms, defining application architecture, database design, and secure connectivity to DB2 on z/OS via MQ Series.
- Defined and enforced Java engineering standards, architectural patterns, and build practices across teams, improving consistency, maintainability, and delivery quality.
- Represented STRATE on the South African FIX Protocol working group, contributing to industry-wide interoperability standards.
- Managed recruitment, mentoring, and technical standards across a team of approximately 19 engineers, while remaining closely involved in architectural decisions and complex technical problem-solving.

UBS Warburg, Systems Analyst

Euro conversion, Y2K and new stock reconciliation system

London, UK

Feb 1998 – July 2001

3 years 6 months

- Delivered extensive enhancements to a legacy IDMS-based trading and reconciliation platform to support Euro currency adoption, meeting regulatory requirements and an immovable market deadline.
- Led technical upgrades across critical integration components, including CICS and Sybase gateways, to ensure full Year 2000 compliance for high-value financial processing systems.
- Designed and implemented global reconciliation capabilities ensuring consistency between trading, settlement, and custody records across distributed systems.
- Implemented reliable, high-volume messaging between mainframe and distributed components using MQ Series, supporting global reconciliation workflows.
- Designed and delivered a SWIFT message retrieval system using MQ Series clients with C++ and Delphi on Windows NT.
- Supported high-availability financial-processing environments where operational resilience and data accuracy were business-critical.

BACG / Armature, Analyst Programmer

Retail Masterdata Management System

Johannesburg, ZA & Salt

Lake City, USA

Apr 1997 – Jan 1998

10 months

- Enhanced and maintained a COBOL/CICS/DB2 application supporting retail warehouse and distribution operations.
- Used TELON CASE tooling to generate COBOL programs for master data and transactional processing.
- Acted as technical advisor to an outsourced project and coordinated application upgrades to client sites.
- Participated in on-site system implementation with client teams in the United States.

Standard Bank, Programmer

Branch Banking System

- Developed and maintained a branch front-line banking system built on a COBOL/CICS/DB2 back-end with distributed DB2 databases deployed to branch environments.
- Contributed to the design and implementation of an early Internet Banking platform using COBOL, CICS DLI, and Sybase Gateway integration.
- Provided second-line, 24-hour operational support for mainframe batch processing, ensuring reliability of end-of-day and overnight financial workflows.

Johannesburg, ZA

Feb 1995 – Mar 1997

2 years 1 month

Interests & Technical Research

Local AI model deployment and inference optimisation

Agentic AI workflows and developer productivity tooling

Distributed ledger architectures and digital asset infrastructure

Research and experimentation with the Tari and Polkadot ecosystems

Skills

Financial Infrastructure: Ledgering, Sub-Ledgers, Reconciliation, Settlement Systems, Transaction Processing, Financial Controls, Auditability, Regulatory Systems, Capital Markets

Architecture & Platforms: Microservices, Event-Driven Architecture, Distributed Systems, Service-Oriented Architecture, Cloud-Native Development

Practices & Methodologies: Agile (SAFe, Scrum, Kanban), eXtreme Programming (XP), Test-Driven Development, Continuous Integration, Continuous Delivery

Languages: C#, JavaScript/TypeScript, SQL, PL/SQL, PHP, Python, Java, Groovy, Powershell, Bash, HTML, C, C++, COBOL

JS Frameworks: React, Svelte-Kit, Vue, Vite

Testing: JUnit, xUnit, NUnit, Jest, Selenium, Postman, Playwright, Mockito, Cobertura, Cucumber

Source Control: Git, GitHub, Subversion, CVS

CI/CD: GitHub Actions, Azure DevOps, Azure Pipelines

Databases: Oracle, PostgreSQL, SQL Server, MySQL/MariaDB, SQLite, Sybase, DB2, IDMS, Lotus Notes

Messaging & Integration: Azure Service Bus, RabbitMQ, Tibco EMS/BW, Websphere MQ, RESTful APIs, SOAP Web Services

Web Servers & SSL: nginx, Apache HTTP Server, IIS, certbot

Containers & Orchestration: Docker, Docker Compose, Podman, Kubernetes, Kustomize

Infrastructure: Terraform, Cloudformation, Bicep, AWS, GCP

Cloud Platforms: Microsoft Azure, AWS

Cloud Services: Azure (Private DNS; Container Registry; AKS; Vault; Storage Accounts; Service Bus), Github Container Registry, AWS (Cloudformation; Route 53; EC2; RDS; S3; Lambda; Cloudfront; WAF; Secrets Manager; Cognito)

Collaboration Tools: Azure DevOps, JIRA, Confluence