
Tony Morris

Site Reliability Engineer | Software Engineer | Functional Programming Specialist

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Summary

Senior software engineer and SRE specialising in functional programming, with extensive experience in building high-assurance, scalable distributed systems and leading engineering teams across cloud and on-prem environments. Expert in applying Scala, Haskell, F#, and other functional languages to production-critical systems with strong correctness and reliability guarantees.

Technical Skills

- **Programming:** Scala, Haskell, F#, Java, Python, Rust, TypeScript, Bash/Zsh
- **Observability & Monitoring:** Prometheus, Grafana, Splunk, CloudWatch, Kafka, Pulsar, Spark
- **CI/CD Automation:** Jenkins, GitLab, GitHub Actions, Ansible

Professional Experience

Senior Software Engineer | 2026—present
Sirius Beta Labs

- Implementing Situated Reasoning tools using Haskell to enable AI systems to make context-aware decisions, integrating environmental and textual data to support dynamic reasoning.

Senior Software Engineer | 2023—2026
QANTAS Airways Ltd

- Maintaining and scaling backend systems for QANTAS Hotels and Holidays.
- Improved reliability of booking pipelines and integrated monitoring for critical services, reducing incident volume by 80%.
- Collaborated with cross-functional teams to ensure SLA compliance and customer experience resilience.

Senior Software Engineer | 2022—2023
Boozebud

- Enhanced online retail systems using Scala, focusing on reliability and performance.
- Introduced observability improvements with Kafka-based monitoring dashboards.

Principal Software Consultant | 2020—2022
Simple Machines

- Delivered SRE-focused outcomes for diverse clients:
 - Chatroulette: Built video streaming infrastructure with Apache Pulsar, ensuring low-latency reliability.
 - IAG Insurance: Designed Kafka pipelines for real-time data integration, improving resilience of critical systems.
- Automated container orchestration with Kubernetes/Docker and scaled Spark pipelines for large datasets.
- Architected AWS solutions (S3, EC2, Redshift) with disaster recovery and cost optimisation strategies.

Course Coordinator, Lecturer | 2020—2021
School of ITEE, University of Queensland

Course Coordinator, Lecturer and Tutor for COMP3400 Functional & Logic Programming. Semester 1, 2020.

Functional Programming Team Leader | 2015—2020
Queensland FP Lab, Data61, CSIRO

- Led a team of 10 engineers delivering high-assurance systems for government and industry.
- Consumer Data Rights (ACCC): Designed open banking APIs with reliability and compliance guarantees.
- Developed open-source libraries (e.g. hpython) with strong correctness and maintainability focus.
- Delivered training programs on functional programming and reliability engineering.

Professional Experience (aviation)

Senior RA Flight Instructor | 2024—present
Gold Coast Sports Flying Training

Providing ground and in-flight instruction to ab initio students in single-engine, 3-axis aeroplanes. Based at Jacobs Well Heckfield Airport, Brisbane.

Senior RA Flight Instructor & Grade 3 Flight Instructor | 2019—2025
Flightscope Aviation

Providing ground and in-flight instruction to ab initio students in single-engine, 3-axis aeroplanes. Based at Archerfield Airport, Brisbane.

A detailed Aviation CV can be found here: <https://aviation.cv.tmorris.net/>

Earlier Roles

- **Senior Software Engineer | NICTA:** Federal government research projects, some spun out into startups.
- **Senior Software Engineer | Ephox (Tiny):** Built reliable rich-text editors (TinyMCE) used globally.
- **Senior Software Engineer | Eyecon, Paycorp, Workingmouse, IBM Tivoli:** Focused on compliance, reliability, and scalable enterprise systems.

Key Technical Projects

- **Kafka Streaming Reliability:** Built resilient pipelines for insurance data integration, reducing downtime and improving SLA compliance.
- **Video Streaming Infrastructure:** Designed Pulsar-based system for Chatroulette, ensuring low-latency and fault tolerance.
- **Open Banking APIs:** Delivered ACCC-mandated Consumer Data Rights system with strong reliability guarantees.
- **Observability Dashboards:** Implemented monitoring solutions with Spark, Kafka, and AWS CloudWatch.
- **Disaster Recovery Automation:** Architected backup and failover strategies across AWS and Kubernetes clusters.

Public Speaking

Slides & videos for public speaking on Functional Programming can be found here:
<https://www.systemf.com.au/resources/presentations/fp-presentations/>

Education

2001

Bachelor of Information Technology
Griffith University, Gold Coast, Australia

2002-2005

Sun Certified Java Programmer & Developer
Sun Microsystems

2018

Flight Instructor Rating (Aeroplane)
Civil Aviation Safety Authority (CASA)

2017

Commercial Pilot Licence (Aeroplane)
Civil Aviation Safety Authority (CASA)

References

References available upon request.