Curriculum Vitae of <u>Cameron</u> KERR
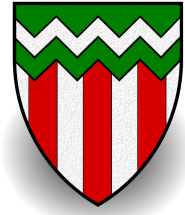
Dunedin
New Zealand

Cell +64 21 479 527

Linked-In	https://www.linkedin.com/in/cameronkerrnz
E-mail	cameron.kerr.nz@gmail.com
GitHub	https://github.com/cameronkerrnz/
Blog	https://cameronkerrnz.github.io/posts/

Certifications

Currently studying for AWS Certification Developer - Associate

AWS Certified Solutions Architect - Associate
Expires: Mar 27, 2025
Validation Number: FZTBQ73DFFF11GC0 (Validate: https://aws.amazon.com/verification)

AWS Certified SysOps Administrator - Associate
Expires: Jan 03, 2026
Validation Number: PDGQYRZKQNF11K3P (Validate: https://aws.amazon.com/verification)

Employment History

August 2023 – current **Senior Integrations Engineer**
Tabula (prev. TracMap NZ) Permanent Full-Time On-site
As a team of two, I was tasked with making code changes to add and maintain features, fix bugs and support partners for an existing SaaS product that is dominant in New Zealand and growing quickly into Australia and the United States of America.

May 2022 – August 2023 **Site Reliability Consultant**
Pythian Services, Inc., Canada. Permanent Full-Time 100% Remote
In this managed services role we worked in teams of six consultants supporting a similar number of clients. Pythian is a Canadian Managed Services Provider with many teams, and I was in one of the Linux SRE teams. Pythian helps clients in many different industries manage their cloud deployments and Linux workloads. Most of our team is based close to the US Eastern time-zone with others distributed in a follow-the-sun model. The nature of the work involves developing proficiencies in many different technologies and languages.

May 2019 – May 2022 **Promoted to Group Lead**
University of Otago, Dunedin, New Zealand. Permanent Full-Time.
Further restructuring opened the door to continuous improvement /
research-and-development and a dedicated cross-functional troubleshooting resource. Still
working in the IT Infrastructure (Systems Services) team inside Information Technology
Services, University of Otago.

May 2011 – May 2019 **(Senior) Systems Engineer**
University of Otago, Dunedin, New Zealand. Permanent Full-Time.
Working in the Systems Services team inside Information Technology Services, University of
Otago, my tasks were largely relating to specialisations in Linux, web infrastructure and
corporate systems. Restructuring near the end created a new Senior position, into which I
was promoted.

Feb. 2002 – May 2011 **Teaching Fellow**
University of Otago, Dunedin, New Zealand. Permanent Full-Time.
Working in the Computer Science Department. Duties included design, implementation and
delivery of teaching materials including laboratory manuals, assignments and some lectures;
significant programming, systems integration and administration to support these papers.
This role requires a large amount of self-management regarding course design, classroom
management, time and workload.
Mixed full- and part-time while completing PgDipSci in Computer Science.

Feb. 2001 – Feb. 2002 **Research Fellow**
University of Otago, Dunedin, New Zealand. Fixed-term.
Working under Dr. Zhiyi Huang, Computer Science Department.
Duties included research into distributed computing. Some light teaching responsibilities.

Summer of 2001/2 **Summer Bursary**, University of Otago, Dunedin, New Zealand
Working under Dr. Zhiyi Huang, Computer Science Department.
Duties included research into distributed computing and cluster computing

Late 1998 – Early 2000 **IT Support Technician** Willis White & Company Ltd, New Zealand
Contracted to work in the Dunedin City Council
Duties included rollout of Windows 95 workstations, Y2K preparation and general IT Support

Education

Postgraduate Diploma of Science in Computer Science (with Distinction)
University of Otago, New Zealand, 2009

Bachelor of Science Degree in Computer Science
University of Otago, New Zealand, 2001

Career Trajectory

Recently I've embarked on a career growth journey. From a career spent largely as a Linux Systems Engineer and SRE, I am actively growing my skills in a Software Engineering and Integration full-time in-office role and seek to make more use of my skills in Cloud, Development and Data.

Software Engineering and Integration highlights:
- As a team of two, I was tasked with making code changes to add and maintain features, fix bugs and support partners for an existing SaaS product that is dominant in New Zealand and growing into Australia and the United States of America.
- **Proved myself as capable in maintaining large existing code-bases in Javascript, Python and PostgreSQL with minimal guidance.**
- Routinely practised and benefited from standard development practices around code contribution and review, testing and test hygiene.
- Making an existing (JQuery-UI) web application mobile-friendly.
- Maintaining and supporting APIs supporting GIS activities.
- Analysed and designed integration solutions for various partners.
- Productively and judiciously used ChatGPT as a performance aid.

Consulting SRE highlights:
- Gained practical experience with Amazon and Azure to go along with my recent AWS Solutions Architect Associate (and later AWS SysOps Associate).
- Worked with clients in various industries in a commercial environment, including finance, health and cyber-security and spanning a variety of time-zones.
- Helped clients manage their Open Source software estate within environments such as on-premises, VMs in the cloud, containers and serverless.
- **Creative problem solving using programming to address challenges.**
- Blogged about some of the interesting work I've been able to do.
- Found I could actually account for my time in 0.1 hour increments.
- Conscientiously documented my work and created materials for clients and peers.

Ways in which I shine:
- Committed to modelling and improving team culture, valuing diversity and inclusiveness
- Deep knowledge of Linux server environments and protocols
- Expert in designing and maintaining highly-available applications
- Prefers automation for the value it brings to reproducibility and shifting-left
- Creating tools and integrations where needed, using whichever languages or tools are best suited for the context
- Developing insights from gaining visibility into system state
- Working with streaming data and distributed systems
- Understanding end-to-end issues in the technology and organisational impact

Here are some recent highlights, demonstrating insight and innovation to solve problems:

- A Software Technology client had a Grafana and Prometheus metrics monitoring solution. Initially I was asked to help them understand and remediate their Prometheus servers which were frequently failing to respond. I developed a safer technique to catalogue what was being stored, and provided many high-value actionable recommendations to correct and avoid the issues in future.

  I came back later to help them understand the performance impact of their many OSS Grafana dashboards and panels, using Lua inside of Nginx to extract metrics which could be reported inside another dashboard.

- A Commerce client was struggling to remediate a large swath of security findings on many similar sites resulting from a consultancy report. The problem was compounded by a complex set of CloudFormation code which was scattered around multiple branches in multiple git repositories with only a loose semblance of naming convention. I implemented a solution whereby I could reproduce the security findings, and used Git Worktrees and Python for n-gram analysis to find the most likely match for the report finding. The output was automatically formatted for creation of Jira tickets which could be delegated to others in the team to resolve, and could be rerun subsequently to demonstrate the remediations were successful.

- A Higher Education client had fundamental performance issues with its LDAP service, which was denying its users reliable network access. This particular LDAP implementation was new to me, as were some of the LDAP operations that were in use, and useful performance metrics were hard to obtain. After doing some performance analysis on the available diagnostic endpoints, I determined the cause was due to queueing time due to worker starvation. The problem was solved by making changes to the way some sync services were implemented; visibility improvement was demonstrated by creating a custom metrics exporter so the performance of each class of access-pattern could be understood; and architectural recommendations to isolate bulk queries to a dedicated replica.

- A Media & Communications business unit had implemented a Wowza HTTP live-streaming video service that had aged and was failing to scale beyond about 140 concurrent users. This was causing highly visible outages and stress with senior management. I was brought in to understand the root causes of the issue and remediate. After analysis, I researched and deployed a streaming media caching layer using Nginx, and load-tested it by customising a third-party research project for benchmarking the MPEG-DASH protocol. It could then support about 2.5k concurrent users per proxy, with much improved visibility and monitoring, and confidence in the platform was restored.