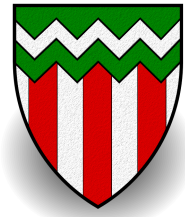


Curriculum Vitae of Cameron KERR



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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 am tasked with proposing and making code changes in frontend and backend to add and maintain features, fix bugs and support partners for a market-leading agritech SaaS product that is dominant in New Zealand and growing quickly 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 practise and benefit from standard development practices around code contribution, testing and review.
- Analyse and design integration solutions for various partners.
- Productively and judiciously use AI tools as a performance aid.

May 2022 – August 2023 **Site Reliability Consultant**

Pythian Services, Inc., Canada. Permanent Full-Time 100% Remote

- Part of a respected global Managed Services Provider in a Linux SRE team helping clients in multiple time zones with their in-cloud and on-premises workloads.
- 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 banking, health, cyber-security and higher-education.
- 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.
- Accounted for my time in 0.1 hour increments.
- Recognised for my skills in conscientiously documenting my work and creating training materials for clients and peers.

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; essentially an SRE. 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

Recent Experiences

Here are some recent highlights, showing the types of work I've felt most proud of and have enjoyed. They demonstrate insight and innovation to solve problems, particularly surrounding Open Source Software:

- 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.
- A large-scale custom data platform for COVID-19 Contact Tracing, based on connection data from one of the largest Wi-Fi deployments in the southern hemisphere, had developed business critical performance issues during reporting after a previous developer had added necessary privacy enhancements. I analysed the entire system, which was based on Python and TimescaleDB (PostgreSQL with time-series extensions), re-architected how encryption was being used to maintain security and privacy while radically improving query-time performance (from over a day to about ten minutes). I performed the necessary data-migration on the live production system, and at the same time greatly streamlined the reporting workflow with some user-friendly tooling and using Jupyter Notebooks, Pandas, etc. to create reports.
- I've managed the Web Infrastructure for an Enterprise-scale off-the-shelf CMS from Oracle, which had many architectural failings due to the product design, and licensing and the business requirements it was meant to fulfill. To make it as robust as possible, I implemented in-depth observability using the Elasticsearch, Logstash and Kibana (ELK) stack, leading to a series of data-driven optimisations around reverse-proxying, caching, WebLogic middleware optimisation and working with developers on changing how data-integrations could be rearchitected.
- I've designed, deployed and maintained a high volume, clustered data-streaming service based on Red Hat Clustering, Kafka, Logstash, Elasticsearch, Prometheus, Grafana, Docker, with numerous critical bespoke integrations in Python, Go, Ruby and more, and completely deployed and maintained using Ansible.