Tyson Clugg

Experienced Technology Leader

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Executive Summary

A highly experienced and trustworthy technology leader with experience in software, security, databases, and networks. Increasing team velocity through improved developer experience and system observability. Enabling team improvement through mentoring and high quality documentation. Reducing operational overheads and improving security through automation, complexity reduction, and process improvement. Trusted by the Australian Government with Baseline security clearance. Looking for a long term commitment (5+ years) where I can leverage my experience as team leader or CTO.

Career Highlights

Lead development and deployment of secure, high performance, high availability services into complex government target environments within 6 months, where no other team had managed to do so. Won contract to supply access control solution to Ticketek stadiums across Australia. Discovered a new class of security vulnerabilities (patent and disclosure pending). Authored Django DDP web framework allowing developers to build robust real-time collaborative web software.

Technology Profile

I have a deep knowledge of Linux since RedHat 4.2 in 1997, PostgreSQL since 2.0 in 1999, and Python with Django since 2007. I've been using Debian/Ubuntu as my primary desktop and development environment since 2008. My home network has 2 backup long range wireless links connecting me to the Melbourne Wireless network using BGP and OSPF routing.

Experience

Founder | adpop.tv | January 2024 - Present

Digital signage solution focused on robust and reliable content delivery using commodity hardware and repurposed displays. Scale to zero cloud infrastructure to reduce costs and minimise environmental impact.

- Android app using NativeScript and supporting service oriented architecture (SOA) using SvelteKit, Cloudflare, Neon (PostgreSQL).
- Aggressive caching strategy to ensure reliable content display.
- Git based configuration management database (CMDB) ensuring reliable and repeatable deployments with managed rollback capabilities.
- Remote triggered GitHub Actions CI/CD pipelines for content ingestion and delivery.
- Cloudflare Pages deployments of management interface for configuration and content management.

President | Lilydale Lions Roller Hockey Club | February 2024 - Present

Volunteer role. Doubled club membership in 18 months as acting President. Inspired 6 people to assist as committee members. Improved cash-flow by implementing sound accounting practices. Successfully running "Lightning League" social games with hands on coaching of team captains, referees, scorekeepers, and timekeepers. Moved accounts to Bendigo Bank for strategic partnership benefits (community grants).

CTO | Lilydale Lions Roller Hockey Club | August 2023 - Present

Volunteer role. Built and published new club website. Integrated accounting, event management, and newsletter systems for streamlined operations.

- SEO friendly website using SvelteKit and Cloudflare Pages.
- Integrated QuickBooks with both Humanitix and Mailchimp to streamline club operations.

Coach | Lilydale Lions Roller Hockey Club | August 2022 - May 2024

Volunteer role. Coached youth team to win 4 successive tournament trophies. Developed and implemented a structured training program that has improved skill levels across the club, with one player selected for the state team. Implemented referee and coach training, resulting in 6 new referees and 2 junior coaches.

Committee member | Victoria Day Council | August 2024 - Present

Volunteer role. Worked with esteemed members of the community to organise and run the Victorian of the Year awards. Trusted to assist with managing the selection meeting for Victorian of the Year 2023. Trusted with dignitary, celebrity, and media liaisons on Victoria Day in 2023 (assistant) and 2024 (lead).

Webmaster | Melbourne Wireless | December 2003 - Present

Volunteer role. Built CMS and website using PHP, MapServer, and MySQL. Maintained and improved website for over 20 years. Integrated node database with Google Maps for easy node location. Handled traffic referred from Slashdot, The Age, and The Herald Sun on multiple occasions. Eased developer onboarding with development containers and incremental debugging.

- Geospatial database of wireless nodes using MapServer and MySQL.
- Container deployments using ArgoCD to Kubernetes cluster.
- Advanced IDE debugging using DevContainers and XDebug.
- Augmented reality node locations via Layar app (discontinued).

Senior Systems Analyst | Bureau of Meteorology | June 2023 - December 2023

Lead development and deployment of secure, high performance, high availability services into complex target environments within 6 months, where no other team had managed to do so. Managed deployment of policy controlled Linux desktops and servers for safety critical operations.

- Managed tightly controlled file system security policies through verifiable CD pipelines.
- Developed CI/CD strategy with verified application and library manifests having precise versions of security approved software.

Senior Developer | BurnsRED | December 2021 - March 2023

Developed cross-referenced documentation build pipelines to Atlassian Confluence making details searchable from Atlassian and easily linkable from Jira tickets. Upgraded multiple Django and DRF based web services to security compliant versions of Python and Django.

- Integrated OpenTelemetry into services.

DevOps Engineer | Unique Micro Design & CardGate.net | August 2020 - December 2021

Consolidated metrics, APM tracing and logging from multiple services into a unified observability platform. Built a single-pane-of-glass monitoring system for all services.

- Added annotated OpenTelemetry logging and metrics to multiple services.
- Consolidated discrete system and application logs into a unified stream via Fluentd.
- Consolidated Nagios system monitoring with hierarchical availability to provide concise notifications on the source of issues across all services.
- Resolved long standing issues with WAN architecture and firewall configuration permitting efficient operations and monitoring from all offices.

Freelance Developer | Self-Employed | October 2019 - August 2020

Developed and deployed multiple web applications for local and international clients.

- Python/Svelte/D3.js dashboard for major international online pharmaceutical prescription service.
- JavaScript/React/Leaflet.js mapping system to improve indigenous health outcomes in the NT.

Senior Software Engineer | Gizmag | February 2016 - August 2019

Managed migration from custom CMS to Brightspot CMS in order to increase features and reduce overheads. Improved performance of custom CMS to reduce page load times and improve search engine ranking.

- Rebuilt render stack to make use of Cloudflare edge cache using standardised caching mechanisms.
- Implemented zero-downtime deployments, permitting rapid feature iteration (~3 releases per day is normal).
- Improved website performance from 400ms average response time to ~100ms for server side rendered pages.
- Removed superfluous systems to improve performance while reducing server load and code complexity.
- Introduced a CI build pipeline to ensure consistent builds and parity between production and dev systems.
- Improved ChatOps to ensure error-free deployments by validating proposed deployment branches.

President | PostgreSQL Down Under Inc | November 2017 - December 2018

Volunteer role. MC for PG Day conference in 2017, lead group to make it an annual event (previously held in 2013). Rallied support for incorporation and garnered nominations for a diverse committee. MC for PG Day in 2018, stepped aside to Vice President to allow a Sydney resident to lead the next event in Sydney.

Senior Software Engineer | Common Code | July 2014 - February 2016

Authored Django DDP, a real-time Meteor server replacement in Python/Django bringing the backend Python and frontend JavaScript teams together.

- Coached agile, BDD, CI and TDD techniques to both the Common Code team and to the team at Savvi.io who develop network reporting software used by NBN Co for the National Broadband Network.
- Wrote Selenium Page Adapter, an open source Python library providing abstracted web page automation.
- Developed company agile practices for test driven development and continuous delivery using BDD techniques.
- Project managed and lead development for version 4 of Karaage supercomputer cluster management software, made job reporting 240x faster, delivered on time and on budget.
- Wrote the first open source Python 3 SOAP client library (rinse), hardened against XML vulnerabilities.

Senior Software Engineer | Unique Micro Design | January 2007 - March 2014

Won ongoing contract to supply venue access control software to Australia's largest ticketing company (Ticketek). Developed agile team practices for continuous delivery, shipping robust software as often as each day. Designed, developed and maintained LOGIC RFID personal protective equipment tracking system (SaaS), trusted by state fire-fighting authorities to track compliance with stringent safety requirements. Consistently achieved over 99.995% uptime each month across all managed services (up to 130 seconds downtime each month). Achieved 99.99% uptime in March 2014 when moving the primary data centre 20km.

- Implemented CI with Jenkins and Selenium, with test cases covering >80% of source code.
- Developed and deployed high-availability features for VAST access control system with Byzantine fault tolerant high-availability, including PostgreSQL database replication, automatic fail-over and automatic recovery.
- Designed, developed and administered multi-tenant web services platform with replicated database clustering across multiple sites, networks and operating systems.
- Managed deployment and maintenance of web application software and dependencies, system and security updates and life cycle management of system software and hardware platforms.
- Designed and developed credit card payment processing for SkyBus online ticketing system.
- Design and specification of distributed transaction and validation engine used in UMD dQue cashless RFID payment and patron access system for festivals, field days and corporate & promotional events.

Systems Administrator | CardGate.net | April 2011 - August 2013

Systems administrator with responsibilities covering PCI-DSS certified (security for credit card systems) systems and software, processing over $4.5 billion worth of credit card transactions annually. Unprecedented security compliance - all annual PCI-DSS security audits conducted by external auditors passed without requiring re-mediation activities.

- Designed and implemented integrated security monitoring and alerting for all platforms using OSSEC-HIDS.

President | Melbourne Wireless | August 2001 - July 2013

Volunteer role. A founding member, President elect for two terms, treasurer elect for two terms, chief web master since 2002. Led the group to build a network of over 100 wireless nodes across Melbourne and Geelong. Front page interview for The Age (IT); Two page feature in The Herald Sun (Connect) Private briefing to the House of Representatives standing committee on Communications, Information Technology and the Arts inquiry into Wireless Broadband.

- Implemented OSPF and BGP routing protocols for metropolitan area networking.

Personal interests

I appreciate good coffee and face to face conversations. I love music trivia and enjoy an eclectic mix of music suggested by random retail workers.

- Camping with our vintage caravan
- Playing guitar
- Card and board games
- Public speaking
- Smart home / IoT device design
- Sustainability & minimal waste living

References

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Alternate versions

Details before 2010 have been omitted from this document for brevity. Other versions are available at clugg.net/tyson with options to include sections suiting your needs.