# Patrick Galbraith

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## Summary of Experience

Published two-time author with 30+ years of expertise in leadership and technical skills ranging from electronics, software development, automation, database administration, system architecture, and sometimes figurative and actual firefighting. 30 years of auto-didactic rapid learning, adaptation, embracing, and leveraging Linux and other open-source projects to solve real problems and create value.

## Skills

* Infrastructure as code: Kubernetes, Ansible, Helm, Terraform/OpenTofu,
* Cloud: AWS, EKS, Oracle Cloud, GCP, DigitalOcean, OpenStack, SmartCloud
* Databases: MySQL (Oracle ACE)/ Galera, ProxySQL, PostgreSQL/PgPool, Oracle, MongoDB, Couchbase, Redis, Etcd, ElasticSearch, Memcached
* Block Storage: S3, [Minio](https://min.io/), [Ceph](https://ceph.io/en/discover/technology/)
* Languages: Go, Python, C/C++, Javascript, PHP, Perl, shell scripting
* CI/CD: ArgoCD, Jenkins, Github Actions, Drone
* Networking: HP & Cisco switches, routers, Unifi, PFsense, firewalling
* Monitoring/Logging: ELKstack, Datadog, Nagios/Icinga, Sensu, Zabbix, Coroot, PMM
* Wireless Broadband (WISP): Alvarion, Motorola
* Local Government (former town selectman)
* Electronics Technician

**Professional History**

**Sanapptx/Parler cloud December 2023 – August 2024– Principal Consultant**

* Performed data migrations from MySQL to PostgreSQL
* Build-out of databases infrastructure (PostgreSQL/PgPool and Percona XtraDB cluster) on SmartCloud, Bare metal, containers/zones/VMs using Ansible
* Maintain automated deployments to Kubernetes.
* Architect various Kubernetes and host-based infrastructure required for re-launch of Parler social app.
* Provide FBI/Justice Dept warrant and CCPA user data requests.

**Lyrid.io, American cloud**

* Consultation providing research into target database operators for Kubernetes-backed DBaaS.

**Starboard Media July 2023 - Current, remote**

* AI ChatBots for political personas on StackAI, development with backend database infrastructure for retaining bot conversations.

**Principal DevOps Engineer, DevOps Lead, PublicSquare June 2023 - October 2023, remote**

* Automation AWS infrastructure including EKS, DocumentDB, and metrics and monitoring with Datadog using Terraform and custom Helm charts
* Implemented CI/CD utilizing ArgoCD with GitHub Actions
* Optimized and maintained DocumentDB (Mongo) database
* Played crucial role in implementing Agile Development process in the team

**CTO,CIO, Parler, Apr 2021 - May 2023, remote**

* C-suite leadership albeit with technical focus on remote Development, DevOps, and Database teams in relaunching the Internet’s premium free speech platform to on-premise data center
* Led the implementation of content curation and filtering utilizing [The Hive AI](https://thehive.ai/)
* Prepared budgets for operational requirements
* Mentored developers and DevOps/SREs under my management
* Automated Design, Configuration, and monitoring of both MySQL and Postgres internationally distributed database topologies including Galera synchronous and asynchronous replication
* Provisioned, operated, and monitored both [Minio](https://min.io/) and [Ceph](https://ceph.io/en/discover/technology/) clusters used for S3-compatible storage for application digital assets such as images and documents
* Lead effort to utilize Datadog and Zabbix for full external and inhouse metrics and monitoring
* Built Kubernetes clusters on bare metal and virtual resources using Canonical Juju, MaaS, and VMware
* Used Ansible to automate anything and everything
* Helped solve numerous technical challenges and problems for various customers, internal and external
* Helped architect and performed backend development of database and search engine solutions using MySQL and Manticore
* Utilized Oracle Cloud for backup and DNS infrastructure using Terraform
* Worked with attorneys, law enforcement, and content filtering and procuration (The Hive AI) to satisfy GDPR and CCPA laws, warrant data requests, and preservation orders

**Principal Engineer, MySQLaaS, Oracle Cloud: Sep 2017 - Apr 2021, remote**

* Maintained and built DBaaS premier service for Oracle Cloud Customers
* Supported build-out of Containerized BGP Edge DNS Application
* Developed and modified Chef Cookbooks and Ansible Playbooks used for automating DNS applications
* Developed Terraform Infrastructure as Code HCL for deployment of MySQLaaS Infrastructure in Multiple word-wide regions
* Developed automation for CI/CD pipelines and Canary testing system (continuous testing)
* On-call monitoring of MySQLaaS
* Presented at KubeCon in 2017 and 2018, OpenWorld in 2018 covering databases on Kubernetes

### Principal Engineer, Hewlett Packard Enterprise: November 2011 - June 2017, remote

Hewlett Packard Enterprise New Cloud Stack, HP Cloud, HP Advanced Technology Group

* As a lead engineer in the Advanced Technology Group at HPE, participated in various R&D technology which eventually led to the prototype and development of the HPE New Stack project
* Developed the New Stack Configuration Manager service running in Kubernetes
* Worked with other tech leads in Platform Engineering to utilize Datadog for metrics and monitoring
* Researched new technologies such as Kubernetes, CoreOS, Terraform for inclusion in architecture of HPE’s next generation technologies
* Contributed open-sourced work upstream to Ansible, Kubernetes, and Helm projects
* Technical Lead, Launched and operated HP Public Cloud DNS as a Service
* Technical Lead of Database Information Systems for HP Cloud, responsible for clustered MySQL backend servers and OpenStack data availability requirements
* Developed a cloud-based, database-scaling architecture design proposal for Samsung Appstore.

### Senior Systems and Database Administrator​, Blue Gecko: October 2010 - October 2011, remote

* Performed remote database administration (DBA) and development for numerous clients
* Provided expertise on systems architecture for various clients for application components and backing databases

(MySQL and NoSQL), including database scale-out plans using sharding and replication

* Provided custom development of storage engines and user-defined functions
* Received ​Oracle ACE award

### Senior Software Developer, Couchbase: July 2009 - September 2010, remote

* Member of nascent team at what was then “Northscale” to develop prototypes of Membase, which became Couchbase after merge with CouchDB
* Developed a build system for Linux and Windows product binaries

## Principal Software Engineer, Lycos Inc.: October 2008 to July 2009, remote

* Developed SaaS for popular PHP applications (Drupal, Joomla, Mediawiki, etc) and MySQL into the existing Tripod infrastructure
* Migrated Tripod.com and Angelfire from Oracle to MySQL. This included modifications to Java-based applications and moving stored-procedure logic to application code

## Senior Software Developer and Database Administrator - Grazr Inc.: January 2007 - October 2008, remote

* Developed Feed Processing web applications
* Implemented both schema and database scale-out architecture and ensured 24/7 availability of backend replicated database systems
* Implemented overall systems monitoring

## Senior Systems Engineer, MySQL Inc.: January 2004 - January 2007, remote

* Participated as a member of a globally distributed team, building the world's most popular Open Source Database
* Developed features such as the FederatedX storage engine, partitioning features, client drivers, parser language additions
* Built an automation system for MySQL binary distributions for Linux and MS Windows

## Senior Software Developer, ​Open Source Technology Group​ (OSTG): August 1999 - September 2002, remote

* As technical manager, developer, and DBA, was responsible for several iterative releases and overall operations of the first major tech blog, ​Slashdot.org
* Developed relationship with MySQL AB and sponsored development of initial MySQL replication features
* Developed major site functionality such as a caching layer, troll filters, and database schema design improvements to Slashdot codebase to handle burgeoning traffic (AKA "Slashdot effect")

● Developed and operated the Linux.com and Linux foundries websites

## Senior Software Developer, DBA, Application Team Lead, ​Cobalt Group​: March 1998 - July 1999

* Lead the applications team who developed web applications for automotive manufacturers and dealers
* Performed DBA tasks such as database schema design, implementing 24/7 database monitoring
* Migrated application backend database to Oracle

## Other

* Selectman, ​Town of Sharon, NH​: March 2011 - October 2013
* Climbed Aconcagua (tallest mountain outside of Asia) January 2024
* Principal, part-owner, Radius North Communications, January 2007 - June 2010
* Fire Control Technician, FC3, USS Leahy (CG-16), United States Navy, 8/86 - 8/92, Desert Storm veteran
* Consulting and positions before 1999: Refer to ​http://patg.net/various.html

## Publications and other projects

* "​Developing Web Applications with Apache, MySQL, memcached, and Perl​" (English, Mandarin), Wiley, ISBN: 978-0-470-41464-4
* "​Expert PHP and MySQL​," Wiley, ISBN: 978-0-470-56312-0
* Galera MySQL Cluster on Kubernetes contribution
* Oracle ACE award: ​https://apex.oracle.com/pls/otn/f?p=19297:4:896909223092578::NO:4:P4\_ID:3300
* Public maintainer/developer of ​DBD::mysql, Perl database driver for the MySQL RDBMS​, 2004 - current
* Github: ​https://github.com/CaptTofu?tab=repositories
* Speaking engagements and tutorials: ​http://patg.net/speaking.html

## Publications and training

* [Developing Web Applications with Apache, MySQL, memcached, and Perl](https://www.wiley.com/en-us/Developing+Web+Applications+with+Apache%2C+MySQL%2C+memcached%2C+and+Perl-p-9780470414644) Patrick Galbraith ISBN: 978-0-470-41464-4 June 2009 888 Pages
* [Expert PHP and MySQL](https://www.wiley.com/en-us/Expert+PHP+and+MySQL-p-9780470563120) [Andrew CurDioso](https://www.wiley.com/en-us/search?pq=%7Crelevance%7Cauthor%3AAndrew+Curioso), [Ronald Bradford](https://www.wiley.com/en-us/search?pq=%7Crelevance%7Cauthor%3ARonald+Bradford), [Patrick Galbraith](https://www.wiley.com/en-us/search?pq=%7Crelevance%7Cauthor%3APatrick+Galbraith) ISBN: 978-0-470-56312-0 March 2010 587 Pages
* [Databases in Cloud Containers: MySQL, Docker, and Kubernetes](https://www.oreilly.com/live-events/databases-in-cloud-containers-mysql-docker-and-kubernetes/0636920282969/), Published by [O'Reilly Media, Inc.](https://www.oreilly.com/publisher/oreilly-media-inc/) Stateful applications made easier

## Presentations

* Complex Stateful Applications Made Easier with Kubernetes, Percona Live 2019
* [Running MySQL on Kubernetes, KubeCon 2018](https://www.youtube.com/watch?v=g924HDB81oc)
* Running MySQL on Kubernetes, OpenWorld 2018
* [Running MySQL on Kubernetes, Kubecon 2017](https://www.youtube.com/watch?v=J7h0F34iBx0)
* Cloud Computing Expo NYC [Building a Kubernetes Cluster with Ansible](http://cloudexpo2016east.sys-con.com/event/session/3181)
* [Percona Live 2016](https://www.percona.com/live/data-performance-conference-2016/users/patrick-galbraith) Various talks on MySQL, MongoDB, Kubernetes, Docker, and Ansible
* [CoreOS Fest 2015 SFO - Talk on running a Galera Cluster with Fleet](https://coreos.com/fest/2015/speakers/)
* [OSCON 2015 - CoreOS DNA on Debian](https://conferences.oreilly.com/oscon/open-source-2015/public/schedule/speaker/991)
* [Percona Live 2014 - Openstack Trove - Database as a Service](https://www.percona.com/live/mysql-conference-2014/users/patrick-galbraith)
* [AnsibleFest NYC 2014 - Ansible and Docker at HP](https://www.youtube.com/watch?v=oZ45v8AeE7k)
* [OpenStack Summit 2013 Hong Kong - DNS in the Cloud: The Designate DNS as a Service Project](https://openstacksummitnovember2013.sched.com/speaker/capttofu)
* [OpenStack Summit 2013 Portland, Oregon - DNS in the cloud: the Moniker Openstack-inspired DNS Project](https://openstacksummitapril2013.sched.com/event/WlbDAI/dns-in-the-cloud-the-moniker-openstack-inspired-dns-project)
* [Percona Live 2013 - talks on Chef/MySQL and DBaaS OpenStack Trove](https://www.percona.com/live/mysql-conference-2013/users/patrick-galbraith)
* [MySQL Users Conference 2011: Perl Programming with MySQL and Drizzle](http://http/en.oreilly.com/mysql2011/public/schedule/detail/17252)
* [MySQL Users Conference 2011: Narada: using Gearman, Sphinx, Memcached, Drizzle and PHP to build a search application](http://http/en.oreilly.com/mysql2011/public/schedule/detail/17282)
* [MySQL Users Conference 2009 Talks/Tutorial](http://en.oreilly.com/mysql2009/public/schedule/speaker/991)
* [MySQL Users Conference 2008 Talks](http://en.oreilly.com/mysql2008/public/schedule/speaker/991)
* [MySQL Users Conference 2005 Talks](http://conferences.oreillynet.com/cs/mysqluc2005/view/e_spkr/1821)
* [Open Source Convention 2004 Talks](http://conferences.oreillynet.com/cs/os2004/view/e_spkr/1821)

## Education

**BS CompSc**​ **- Bellevue College (1992-1997, in progress)**

### US Navy Fire Control A and C schools (1986-1988)

Electronics and computer systems including radar, analogue and digital computer systems