

Brent Graveland

brent@graveland.net · github.com/graveland · brent.graveland.dev

Infrastructure engineer building the distributed systems and storage behind managed Postgres at fleet scale, and the production LLM and agent platforms that operate it.

EXPERIENCE

Timescale / TigerData — *Staff Software Engineer, Cloud / Postgres infrastructure* 2022 – present

- **Co-founded Fluid Storage** with Samuel Gichohi: the disaggregated block-storage substrate behind Agentic Postgres and Tiger Cloud's free tier. Three-tier architecture, zero-copy forks.
- Sole author of the internal admin platform that operates Tiger Cloud's managed-Postgres fleet across AWS and Azure: CLI, node DaemonSet, MCP server, Slack bot, LLM integration, and gRPC control plane in one Go binary. 60+ gRPC services / 600+ RPC methods. 1500+/83% of commits over 3 years.
- **Creator and top contributor to popper**, the Go Kubernetes operator that manages Patroni/Postgres pod topologies across the fleet over 3 years. Extensive, thorough simulation testing plus many end-to-end tests on envtest/kind.

Verge Agriculture — *Lead Software Architect* 2019 – 2022

- Led a team of 2–5 building data pipelines, back-end REST/GIS services, and devops.
- Designed and ran the Kubernetes private-cloud infrastructure (Terraform, Ansible); database design on PostgreSQL/PostGIS, CockroachDB, Citus, Cadence.
- Built core GIS path-planning, DEM processing, field-boundary handling, John Deere API sync in Go; logging/monitoring/tracing (Graylog, Prometheus, Alertmanager).

Whipcord — *Lead Software Engineer & Systems Administrator* 2015 – 2019

- Technical lead for storage, networking, automation, virtualization, and devops in Go and Ruby; enterprise IPv6 + multi-upstream BGP; Joyent Triton multi-tenant cloud.

University of Lethbridge — *Oracle Database Administrator* 2011 – 2015

Provisioning, upgrades, backups, tuning; Oracle OVM on Cisco UCS; central Oracle Enterprise Manager.

Symantec / SecurityFocus — *Senior Vulnerability Analyst & Software Engineer* 2004 – 2010

Researched and documented vulnerabilities; backup BUGTRAQ moderator. Built Perl/Ruby automation tooling for the vulnerability research team. Later: remote-contract stint co-authoring the Internet Security Threat Report.

Hyperchip · JRC Canada — *Senior Unix Systems Administrator* 1998 – 2003

A custom VPN certificate authority, secure file-exchange, and network-boot disk-imaging for backup/restore/provisioning; OpenBSD site-to-site IPsec VPNs and perimeter firewalls; Solaris/SCO/Linux/NetBSD/AIX administration, SecurID auth, and custom C database applications for contract manufacturing.

SELECTED PERSONAL PROJECTS

- **ublkstor**: Replicated NVMe-TCP block storage with a Zig `io_uring` zero-copy data path, a Raft-replicated Go control plane, copy-on-write snapshots, a CSI driver, and TLA+ models covering FLUSH, replication, resilver, snapshots, dispatch, and Raft DR. Began as a TLA+ proof that the design holds: POSIX compliance under every failure case, metadata off the I/O hot path. Per-volume tunable stride/replica counts; copyset placement; S3 disaster recovery.
- **sentinel**: A personal control plane built solo across five repositories (5300+ commits in three months): Rust core, Rust polyglot plugin host (Rust/Go/Python), SwiftUI iOS/macOS app, ESP32-P4 firmware, and git-managed Rhai automations. Two-node HA on NATS (JetStream consensus). A multi-provider AI agent (Claude/Ollama/OpenAI) built on a **typed composition substrate where capability is bound by construction** — the agent composes verbs freely, but the verb catalog grows only through human-reviewed PRs — with voice, persistent semantic memory, and a Python runtime bridging unmodified Home Assistant integrations.

SKILLS

Systems & infrastructure: Go · Rust · Zig · Swift · C/ESP-IDF · PostgreSQL · Kubernetes (operators, CSI) · `io_uring` · NVMe-TCP · gRPC/protobuf · NATS · TLA+ · Terraform · Ansible · AWS · Azure · pgvector / TimescaleDB · Raft · OpenBSD / BGP / IPv6

LLM & agents: production LLM integration · multi-provider agents (Anthropic / OpenAI / local Ollama, mlx) · MCP servers & tooling · tool/capability design · hybrid RAG (pgvector + BM25) · agent orchestration & model routing · STT / TTS voice

Education: University of Lethbridge, Computer Science, 1995–1998 (three years; no degree).