

Zane Saul

Senior Software Engineer · 7 years · TypeScript, React, PostgreSQL, Python, PowerShell

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Rosemount, MN

Software engineer with 7 years of experience. 5 years at Dell Technologies integrating enterprise platforms for 100,000+ users (Microsoft Teams, telephony, security governance), followed by independent work owning full-stack delivery of live payment systems, client platforms, AI agent systems, and production infrastructure managing 20+ services.

SKILLS

Languages: TypeScript, Python, Go, Rust, PowerShell

Frameworks & Libraries: React, Next.js, Express, React Native, Tailwind CSS, Prisma, Zod

Databases: PostgreSQL, MongoDB

Enterprise Integration: Microsoft Teams API, Zoom API, Power BI, Square Payments, Jira API, SSO

Zero-Trust Networking: Twingate, NetBird (WireGuard), Cloudflare (Tunnels, Email)

Security: Threat Modeling, Secrets Management, mTLS, PKI, AES-256-GCM, Wazuh, pgBackRest

AI & ML: vLLM, LiteLLM, Ollama, pgvector, RAG Pipelines, Embedding Models

EXPERIENCE

Independent Software Engineer

02/2024 – Present

Self-employed

- Contracted directly with a service business to deliver a production booking platform end-to-end — Square payments, server-authoritative pricing, and time-slot holds — now processing live customer transactions.
- Sole engineer for two independent clients over 1 year — owned requirements, architecture, contracts, deployment, and ongoing operations while facilitating design and weekly collaboration.
- Built an AI agent platform with hybrid retrieval (graph + vector + keyword), a 14+ tool ecosystem with structured schemas, and a deterministic enforcement layer validating agent behavior against architectural constraints.
- Operated a production server cluster managing 20+ containerized services with NetBird WireGuard mesh networking, resolved 200+ critical CVEs, and implemented dual-repository backups with automated restores.

Software Engineer II

05/2019 – 02/2024

Dell Technologies (*Fortune 500 enterprise technology, 160K+ employees*)

- Managed Microsoft Teams licensing and application policies for 100,000+ users via PowerShell automation across multiple acquisitions, ensuring consistent access controls and service entitlements.
- Provisioned conferencing for 50,000+ and enterprise voice for 30,000+ users across Teams and Zoom, managing complex service orchestration with overlapping entitlements.
- Engineered Active Directory scanning and auto-sync automation so acquired telephony inventory integrated without manual intervention, reducing provisioning time by 25%.
- Developed a Python-based meeting room implementation tracker, ingesting database inventory and Smartsheet vendor data to automate Jira status updates for 100+ meeting rooms globally, reducing manual tracking by 15 hours per week.
- Built executive Power BI dashboards with automated data pipelines for daily tracking of global telephony rollout, replacing weekly manual status reports and cutting reporting cycle from 3 days to daily refresh.
- Led secrets management standardization for a 40-person team as Secure Development Champion — replacing plaintext secrets with encryption certificates and vault API integration.
- Owned Microsoft Teams app governance for 50+ teams, reviewing ~400 apps for security compliance and establishing a controlled approval workflow aligned with corporate and cyber standards.
- Designed and deployed a Microsoft Teams domain-whitelisting system using Azure Automation, PowerShell, and Logic Apps to control external communications across the organization during a security response.
- Contributed full-stack features (UI components, APIs, and PostgreSQL schema) for scheduling and approval workflows on an internal communications platform.
- Drove infrastructure CVE remediation across team servers — patching automation dependencies, coordinating MongoDB upgrades, and restricting SSH access — owning the application-level changes Cyber Security required.

PROJECTS

Payment and Booking System

Next.js, React, TypeScript, PostgreSQL, Square Payments, Tailwind CSS, Nix

- Delivered a production system accepting customer bookings with Square Web Payments and server-side validation across 15+ error mappings.
- Built a checkout flow with server-authoritative pricing — all amounts recomputed from the database at payment time, rejecting client-supplied values.
- Implemented a time-slot hold system that prevents double-booking by merging active holds with confirmed bookings against available capacity.
- Led infrastructure migration from single VPS to server cluster with NetBird WireGuard mesh networking and Nix-based CI/CD pipeline with Trivy scanning.

Service Cluster

Docker, NetBird, MinIO, pgBackRest, Traefik, Wazuh, Nix

- Architected and operated a server cluster with NetBird WireGuard mesh networking, managing 20+ containerized services across production workloads including source control, identity, search, and monitoring.
- Designed backup and disaster recovery strategy with pgBackRest dual-repository architecture, TDE-aware WAL archiving, and automated restore pipeline.
- Resolved 200+ critical CVEs across deployed services, VPS servers, and development systems — maintaining a clean security posture across the entire infrastructure.
- Deployed a security stack with Transparent Data Encryption, field-level AES-256-GCM encryption via KMS, mutual TLS with PKI-managed certificates, and PostgreSQL Row-Level Security policies.

LLM Inference and Agent Platform

vLLM, LiteLLM, Ollama, TypeScript, Embeddings

- Designed server hardware requirements and deployed AI inference infrastructure serving a large language model via vLLM with LiteLLM API proxy.
- Built a deterministic enforcement layer to validate agent behavior against architectural constraints — using static policy checks, session log replay, and CI linting.
- Architected a hybrid retrieval system combining graph traversal over linked notes with vector embedding search and keyword fallback.
- Created a tool ecosystem of 14+ capabilities — from vault search and web browsing to code intelligence and system automation — each with structured schemas and deterministic error handling.

Realty Engagement Platform

Full-stack · TypeScript, Next.js, React Native, Express, PostgreSQL, Firebase, Apple APNs

- Built a complete platform around a thin mobile client — Express REST API, Next.js admin dashboard, and authentication service — with a single PostgreSQL database serving all layers.
- Designed a notification-driven data freshness system using short-term and long-term memory with selective cache invalidation, keeping the app current without constant polling or excessive API/battery cost.
- Enforced per-user data isolation with PostgreSQL Row-Level Security and transaction-scoped identity injection via middleware, ensuring users can only retrieve their own records at the database level.
- Shipped a production React Native app to iOS and Android, including the native configuration and integration work required for store release.

EDUCATION

Texas State University · B.S. Technology Management (Electronics Technology), Minor in Computer Science · 2019