Tirth Patel

Sr. Software Engineer · Frisco, Texas
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SUMMARY

Backend engineer building high-reliability infrastructure and shared platforms at scale. Currently on the Ops team at Toyota Connected, supporting connected vehicle services for millions of Toyota and Lexus vehicles. Core strengths in Go, AWS, distributed systems, and observability.

WORK EXPERIENCE

Sr. Software Engineer — Toyota Connected — Nov 2024 – Present

Ops team — connected vehicle platform serving millions of Toyota & Lexus vehicles

- Built a shared Go library abstracting partner EV APIs across 2 generations of connected vehicle software (model years 2021–2026+); standardized error handling, retries, and observability so feature teams ship faster
- Delivered **$1.4M** in annual lifecycle cost savings by consolidating services, right-sizing pods, and adding in-memory caching (Ristretto) to offload the Redis cluster
- Contributing to next-generation Toyota infotainment in Rust, building backend services for the Media domain (FM, Bluetooth, built-in Spotify) on the platform powering upcoming vehicle models
- Built Mixpanel instrumentation for the Voice Assistant processing **8–10M** events/day, giving PMs self-serve dashboards into how vehicles use voice across domains (navigation, music, etc.) to inform proactive, learned suggestions
- Migrated legacy-generation vehicle data into the Replay debug/triage service already adopted by the new platform, unifying triage tooling across generations and strengthening CCPA privacy compliance
- Cut observability costs by ~**$300K** annually by standardizing logging across services and eliminating Datadog noise
- Fixed voice-request routing with deterministic regex patterns to classify domain queries (e.g., EV navigation vs. settings), reducing misroutes by ~**30%**; deployed via secrets for zero-deploy hotfixes

Software Engineer — Panasonic Avionics Corporation — Mar 2024 – Oct 2024

- Developed a health metrics service that collects, processes, and transfers aircraft system data to groundside servers for proactive maintenance across Panasonic's **10,000+** aircraft install base
- Built safety-critical REST APIs in Go for interfacing with aircraft information systems, ensuring reliability for external stakeholders
- Created real-time Grafana dashboards for system health monitoring, giving operations teams actionable performance insights
- Led a team of **3** engineers to deliver health management system features on deadline

Software Engineer — Kount, an Equifax Company — Sep 2021 – Feb 2024

- Upgraded multiple microservices to Protocol Buffers v2 with backward-compatible v1 compatibility layers, enabling org-wide schema migration without downtime
- Built and deployed containerized Go services handling real-time fraud decisioning to EKS via GitLab CI
- Created a microservice for Verifi and Ethoca integration that streamlined merchant onboarding, boosting signups by **40%**
- Built a merchant-facing fraud prevention dashboard consolidating order inquiries, alerts, and chargeback management into a single view

PROJECTS

threads-go — Open-source Go client library for Meta's Threads API, designed for consumer use by other developers: OAuth 2.0 token lifecycle, rate-limit backoff with exponential jitter, cursor-based pagination, and full API coverage. *github.com/tirthpatell/threads-go*

fia-f1-docs-bot — Automated tool to fetch and post FIA Formula 1 decision documents, with a PostgreSQL-backed processing pipeline. Built with Go, PostgreSQL, and Docker. *github.com/tirthpatell/fia-f1-docs-bot*

SKILLS & CERTIFICATIONS

Languages	Go, Rust, Python, Java
Databases	PostgreSQL, MySQL, Aurora DB, DynamoDB, Redis, MongoDB
Infrastructure	AWS, Docker, Kubernetes, gRPC, REST, Protocol Buffers, OAuth 2.0, MQTT
Observability	Datadog, Grafana, Prometheus, Mixpanel, Vector
Certifications	AWS Certified Developer – Associate, AWS Certified Cloud Practitioner

EDUCATION

MS in Computer Science — The University of Texas at Arlington — 2018 – 2020
B.Tech in Information Technology — Charotar University of Science and Technology — 2014 – 2018