

TANAY ARUN ANKULWAR

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EDUCATION

SRM Institute of Science and Technology
B.Tech Computer Science

May 2027
Current CGPA: 9.65/10

SKILLS

Languages: Go, C, C++, SQL

Backend & Systems: Distributed Systems, REST APIs, Concurrency, gRPC, Raft

Databases & Storage: PostgreSQL, Redis, etcd

Infrastructure & Tools: Kubernetes, Docker, Linux, Git

EXPERIENCE

Open Source Contributor

- **google/go-github:**

Extended Google's GitHub API client with **secret scanning custom pattern support** across its repository, organization, and enterprise permission tiers, introducing request/response types aligned with GitHub's OpenAPI schema. Validated against GitHub's live REST specification and covered with table driven HTTP mock tests.

- **NGINX:**

Designed **automatic IP family detection** for Gateway listener configuration in **nginx-gateway-fabric**, a CNCF Gateway API implementation, removing the need for users to manually declare IPv4/IPv6 preference by inferring it from Pod and Service network state. The design required reconciling **cached (client.Reader) vs. live (client.Client) Kubernetes API reads** to avoid acting on stale state during controller startup.

- **Kubernetes:**

Refactored the **VPA recommender test suite** in **kubernetes/autoscaler** to use a shared helper for asserting update mode behavior, replacing duplicated inline logic across test cases and reducing the surface area for test drift as new update modes are added.

PROJECTS

netd: Distributed Overlay Network Daemon | *Go, Raft, HTTP, VXLAN, netlink, Docker*

- Built a distributed overlay networking daemon in Go that maintains cluster state with the Raft consensus algorithm for multi-node container networking.
- Implemented Raft leader election and log replication for cluster state across multi-process nodes
- Built an HTTP control plane API for node registration, membership updates, and cluster state queries
- Implemented the data plane using VXLAN tunneling and netlink-based interface programming

Aquifer: Generic Connection Pool Library | *Go, sync/atomic*

- Built a generic, type safe connection pool library in Go using generics and buffered channels
- Combined sync.Mutex guarded pool state with sync/atomic counters for lock free stat tracking
- Added functional options for pool size, idle timeout, and max connection lifetime
- Built a background reaper for idle eviction and graceful shutdown, verified race-free with `go test -race`

binance-tui: Terminal UI for Binance Trading | *Go, Cobra, Bubble Tea, Lipgloss, WebSocket, HMAC*

- Built a terminal trading dashboard in Go using Cobra for CLI structure and Bubble Tea for the TUI
- Implemented an HMAC-SHA256 signed REST client for authenticated Binance portfolio and order data
- Integrated Binance WebSocket streams for real-time orderbook and ticker updates via goroutines
- Built three isolated Bubble Tea models (portfolio, orderbook, tickers), styled with Lipgloss

AWARDS

1st Place at Hackverse Hackathon

April 2024

2nd place at Hack Of Duty Hackathon

March 2024

3rd Place at Stacks Bitcoin L2 Hackathon

October 2025

3rd Place at Algorand Hackathon

November 2025