Nishant **Singh**

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Education

Indian Institute of Information Technology Bhopal   *Bhopal, MP*
B.Tech in Information Technology | GPA: 8.76   *Dec, 2021 – Present*

Work Experience

Google Summer of Code   *Remote*
Mentor   *Mar, 2025 – Present*
- Mentored contributors to design & implement a scalable observability layer for KubeArmor, integrating 6+ Prometheus metrics to expose real-time insights into policy enforcement, alerting, & overall security activity across Kubernetes & non-Kubernetes workloads
- Led and supported contributors through technical decision-making around Go development, Prometheus integration, and Kubernetes design patterns, fostering a collaborative environment while aligning implementations with CNCF's engineering standards

Samsung Research Institute - Delhi   *Noida, UP*
Software Developer Intern   *Jan, 2025 – Present*
- Enforced API request validations by defining field constraints (e.g., min/max values) in Swagger specs and implementing runtime checks using the validator package in Go across 10–12 backend APIs, contributing to robust API validation and improved reliability
- Revamped UMD movie matching by manually mapping unmatched metadata entries between Samsung's UMD and IMDb, and developing a custom CLI tool that reduced the task time from 4–5 hours to just 30 minutes daily

Cloud Native Computing Foundation (CNCF)   *Salt Lake, USA*
LFX Mentee | Open Source Contributor   *Sept, 2024 – Nov, 2024*
- Improved the security and management functionality of KubeArmor for virtual machines (VMs) by expanding its feature set by 15% and enhancing the capabilities for unorchestrated containers and non-kubernetes environments
- Developed and optimized 3 real-time configuration interfaces (via karmor.yaml, gRPC, and CLI), enabling real-time updates to security settings without the need for service restarts. Increased configuration efficiency and flexibility, reducing manual intervention
- Streamlined the installation and policy management process by refining the karmor CLI for VMs, reducing installation time by 25%, while also extending CLI capabilities to enable faster policy management, resulting in a 20% reduction in operational overhead

GoComet Pvt Ltd   *Bangalore*
DevOps Engineer Intern   *Oct, 2023 – Oct, 2024*
- Established a robust monitoring infrastructure by configuring alerts for PostgreSQL 13, specifically targeting the long idling transactions, locks and max concurrent connections, providing immediate visibility into potential issues and enabling swift resolution
- Spearheaded the daily deployment process of production code through a enhanced rolling deployment strategy on Kubernetes, orchestrating seamless updates across 5+ systems and leveraging automated tools to minimize downtime & enhance system reliability
- Enhanced operational insights by setting up Fluentd logging agent to push detailed, enriched application logs to New Relic, facilitating comprehensive analysis and streamlined troubleshooting the intricacies and heightened understanding of application behavior

Projects

GoLoadBalancer   *tesla59/GoLoadBalancer*
Go, Docker, Load Balancer, Concurrency
- Developed GoLoadBalancer, an automatic load balancer with round-robin functionality, inspired by Kubernetes operator architecture
- Leveraged Goroutine and Docker to spawn 3+ load balancer to balance the incoming load and 5+ workers to handle incoming request
- Incorporated SQLite 3 Database to store and provide real-time statistics such as of all workers such as average failure rate and delay

WhisperWeb   *tesla59/whisperweb-backend*
Go, Fiber, REST APIs, SQLite, Docker
- Coded a HTTP Server using Fiber web framework in Go for back-end using SQLite 3 as the DBMS to store and retrieve data
- Designed the front-end part using Next JS 13 capitalising Server-Side Rendering (SSR) pattern to enhance performance and experience
- Containerized the website using Docker ensuring portability and reliability across different environments and easy deployment

Skills

Languages: Go, Rust, TypeScript, JavaScript, Ruby, Dart, Python, Kotlin, C, C++
Tools: Docker, Kubernetes, Terraform, Ansible, Git, ArgoCD, SQL, Jenkins
Frameworks: Flutter, React JS, Gin, GoFiber, Gorm, Express JS, Next JS
Platforms: Linux, AWS Cloud, Azure, Google Cloud Platform, Oracle Cloud Infrastructure

Certificates

Jan, 2024	**Google Cloud Certified Professional Cloud Architect**, Mastered certification for the Google Cloud Professional Cloud Architect exam, showcasing expertise in architecting secure and complex solutions with high scalability and availability on the Google Cloud Platform	*Google Cloud*
Nov, 2023	**Google Cloud Certified Associate Cloud Engineer**, Achieved certification as a Google Cloud Associate Cloud Engineer, showcasing proficiency in designing, implementing and managing cloud solutions on the Google Cloud Platform and mastery in skills within Google Cloud	*Google Cloud*