

SURYA PRATAP SINGH

Project Lead · Network Automation, SDN & Telecom Systems · 10+ Years

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PROFESSIONAL SUMMARY

Project Lead with 10+ years building production backend and telecom systems in Golang, C and C++. Currently leading development on Cisco Crosswork Network Controller at Persistent Systems — an enterprise SDN controller for carrier IP transport networks covering intent-driven service orchestration, multivendor device integration and closed-loop automation. Prior experience spans 5G core network function development (AMF, AUSF, SMF) in Golang against 3GPP specifications, ORAN CU-CP/CU-UP/DU implementation across E1, E2 and F1-U interfaces in C++, GPRS protocol stacks, and code generation tooling in Golang and Python. Strong in system design, protocol engineering, and delivery leadership across distributed engineering teams.

TECHNICAL SKILLS

Languages Golang, C++, C, Python, Bash

Networking & SDN Software-Defined Networking, Network Automation, Cloud Orchestration, NETCONF, YANG, gNMI, REST APIs, HTTP/2

Telecom 5G Core (AMF, AUSF, SMF), ORAN (E1, E2, F1-U), 3GPP, GPRS/LTE, Protocol Stack Development, FSM Design

Frameworks & Tools gRPC, Google Protocol Buffers, Boost, nghttp2, Microservices, Code Generation

Infrastructure Kubernetes, Docker, PostgreSQL, Redis, AWS, Terraform, Linux, Git

Leadership Technical Leadership, Project Management, Agile Delivery, System Design

PROFESSIONAL EXPERIENCE

Project Lead

Persistent Systems | Jan 2024 – Present | Noida, India

Client engagement: Cisco · Cisco Crosswork Network Controller

- Lead development on an enterprise SDN controller platform for carrier IP transport networks, delivering intent-driven service orchestration where operators declare the target service and the platform computes, provisions and continuously reconciles it against live network state.
- Deliver multivendor device integration and closed-loop automation across a distributed microservices architecture built in Golang and deployed on Kubernetes.
- Own service lifecycle management, health monitoring and troubleshooting workflows across the platform.
- Manage project delivery and technical direction across engineering teams in a telecom-focused consulting environment.

Senior Software Engineer

Rebaca Technologies | Apr 2022 – Dec 2023 | Kolkata, India

- Implemented ORAN components — GNB-CU-CP, GNB-CU-UP and GNB-DU — across E1, E2 and F1-U interfaces in C++.
- Built a centralised database (CDB) for the 5G UDSF node using unicast and multicast sockets over C++ Boost IO Services, providing shared unstructured data storage across network functions.
- Delivered 5G protocol testing and OTT video delivery solutions within a telecom product team.

Senior Software Engineer

Spica Systems | Apr 2021 – Mar 2022 | Kolkata, India

- Built AMF, AUSF and SMF 5G core network functions in Golang against 3GPP specifications for the Cygnus 5G test platform.
- Designed a custom Manager NF exposing gRPC and REST control interfaces for orchestration of the network function suite.
- Developed a traffic generator supporting bandwidth, latency, ping and trace-route validation, enabling automated regression runs across the 5G core.

Senior Software Engineer

Truminds Software Systems | Sep 2020 – Apr 2021 | Gurugram, India

- Built an end-to-end LLC layer protocol stack for GPRS in C++, integrating with the Mavenir codebase.
- Contributed to 5G and IoT engineering across a digital connectivity portfolio.

Software Test Engineer

Nippon Data Systems | Jan 2020 – Sep 2020 | Gurgaon, India

Client engagement: Keysight Technologies

- Built an instrument performance test framework in C++ using Google Protocol Buffer streams.
- Delivered validation and testing for network measurement and emulation products.

Software Engineer

Rebaca Technologies | Mar 2019 – Dec 2019 | Kolkata, India

- Implemented HTTP/2 service-based interfaces for 5G network functions (AMF, AUSF, SMF) on the ABot 4G–5G test platform.
- Built a Python code generator that parsed 3GPP YAML definitions into JSON and emitted C++ structures for the information elements used across those interfaces, removing hand-written boilerplate for every new interface.
- Implemented a licence client in C communicating with a Java licence server over AES-CBC with PKCS5 padding, validating licence types and client access.

Software Engineer

Dynamic Digital Technologies (Polaris Networks) | Jul 2016 – Feb 2019 | Kolkata, India

- Built a 5G emulator framework in C/C++ using REST APIs, Boost and nghttp2 for network function procedures and finite state machine handling.
- Developed an OpenAPI 2/3 compatible code generator in Golang using Google Protocol Buffers and gRPC, auto-generating API models, interface stubs and FSM handling code.
- Recognised as Star Performer of the Year, 2017.

EDUCATION

B.Tech, Information Technology

National Institute of Technology, Durgapur | 2012 – 2016

CERTIFICATIONS

Building Systems with the ChatGPT API — DeepLearning.AI, May 2026

ChatGPT Prompt Engineering for Developers — DeepLearning.AI, May 2026

Star Performer of the Year — Dynamic Digital Technologies, 2017

ADDITIONAL INFORMATION

Notice Period 3 Months

Languages English (Full professional proficiency), Hindi (Native)

Preferred Locations Noida, Delhi NCR, Gurgaon, Bangalore, Pune, Hyderabad, Remote