How Cisco Engineer Ashwani Sugandhi Slashed Network Errors 60% With NETCONF and YANG Automation

A behind-the-scenes look at how a Cisco automation engineer replaced fragile CLI workflows with model-driven infrastructure that scales.

NEW YORK, NY, UNITED STATES, March 11, 2026 /EINPresswire.com/ -- Ashwani Sugandhi, Network & Automation Engineer at Cisco Systems, has published a hands-on guide revealing how she helped cut manual configuration changes by 60% using NETCONF and YANG. Drawing from real-world automation initiatives across global enterprises, the guide breaks down how model-driven infrastructure replaces risky CLI workflows with structured, validated, and scalable automation.

As enterprise networks grow more complex, traditional command-line configuration is breaking under pressure. One mistyped command can cause outages. One undocumented change can create weeks of troubleshooting. Sugandhi argues that the future belongs to schema-validated, intent-driven automation — where devices understand the structure of a change before accepting it.

In the guide, she details exactly how this shift happens. Readers get a practical walkthrough of NETCONF architecture, YANG data modeling, Python automation using ncclient, and how to build guardrails with CI/CD pipelines and automated testing. She shares lessons from automation programs supporting environments at Microsoft, Standard Chartered Bank, and Samsung — including how Cisco's Master Automation Plan standardized tooling, reduced drift, and brought governance to what had previously been scattered scripts. Instead of brittle one-off code, her framework emphasizes reusable libraries, validation layers, and telemetry-driven feedback loops.

"Most teams think automation means writing a few Python scripts," Sugandhi said. "That's just faster manual work. Real automation means the device validates your intent against a model before it ever touches production. The biggest failures I've seen weren't technical — they were cultural. No testing discipline, no version control, no standardization. This guide lays out what actually works when the stakes are high."

Sugandhi brings more than four years of hands-on experience automating complex enterprise networks and holds CCNP, CCNA, and Cisco DevNet Associate certifications — a rare combination of deep networking fundamentals and programmable infrastructure expertise. She led Cisco's

Master Automation Plan initiative to align teams around production-grade automation standards and is currently pursuing a Master's in Computer Science to further advance intelligent infrastructure systems.

The full guide is available at https://careery.pro/insights/netconf-yang-network-automation-guide-from-cisco-engineer-ashwani-sugandhi — written for network engineers, DevNet professionals, and infrastructure leaders ready to move beyond manual CLI toward scalable, model-driven operations.

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