

# RAVI KOOTHATI

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## ABOUT

- **Software Engineer** with **10+ years** of experience building high-performance software across networking, cloud and infrastructure platforms.
- Strong background in system-level problem solving, improving platform performance, and delivering stable backend services used in enterprise environments.
- Skilled at working across the stack—from core systems to cloud deployments—to create secure, scalable, and maintainable solutions.
- Collaborative team player experienced in fostering relationships across cross-functional teams, contributing effectively to collective objectives, and achieving successful project outcomes.

## TECHNICAL SKILLS

Languages	C, C++, Python, Go, Bash
Systems	DPDK, SR-IOV, Linux Kernel, MMU, KVM, QEMU, Vmware, VirtIO
Networking	TCP/IP, L2-L7 Protocols, Network Security, Routing, Switching, VPN (IPsec/SSL/TLS), HA, Clustering
Cloud	AWS, Oracle Cloud (OCI), Alibaba Cloud, Azure, GCP, Terraform, Docker, Kubernetes
Tools	GDB, Valgrind, Cisco TRex, Wireshark, Tcpdump, Git, Perforce, Jira, Jenkins, CI-CD

## PROFESSIONAL EXPERIENCE

### IBM | Software Developer (Backend & Systems) | Markham, ON | Apr 2024 – Till Date

*Backend development for SevOne NPM, an enterprise-scale Network Management System used by Fortune 500 banks/telcos.*

- **Cluster Resilience & Availability:** Engineered a high-availability feature to force-remove inaccessible peer/HSA nodes, preventing cluster lockups during maintenance and significantly reducing recovery time.
- **Security & Compliance:** Led a critical security initiative to patch Golang CVEs, migrate container images to verified publishers, and automate kernel cleanup, ensuring compliance for banking clients.
- **Critical Escalation Resolution:** Resolved **35+ high-priority escalations** involving NMS upgrade failures, database schema corruption, and ICMP plugin malfunctions.
- **Observability Tools:** Built a utility to trace objects through the Kafka-based ingestion pipeline and added synthetic indicators for interface error monitoring, improving system debuggability.

### CISCO | Software Engineer (Systems & Kernel) | Bangalore, IN | Aug 2020 – Mar 2024

*Core developer for Cisco ASA/FTDv (Next-Gen Virtual Firewalls), focusing on datapath acceleration, driver integration, and cloud-native enablement.*

- **Datapath Performance (SR-IOV):** Led the integration of **SR-IOV** for Broadcom and Mellanox DPUs on Oracle Cloud (OCI). Tuned DPDK driver configurations to boost throughput from **8.1 Gbps to 10.4 Gbps (28% increase)**, contributing an estimated **\$2M in value** to the business unit.
- **Cloud Native Automation:** Architected a cloud-native autoscaling solution for Alibaba Cloud using **Python and Terraform**. Automated the deployment of VNICs, security groups, and health monitors, reducing customer operational overhead and was used in infrastructure for the Beijing Winter Olympics 2022.
- **Low-level optimization:** Diagnosed and resolved critical performance bottlenecks (**NIC underruns, memory leaks, ring buffer overflows**) by tuning DPDK parameters, hugepages, and ring sizes. Increased Connections Per Second (CPS) by **130% (110k to 255k)** for ASA/KVM deployments.
- **Debugging & Tooling:** Enhanced the **Cisco TAC reporting tool** by integrating granular datapath logs (mbuf pools, memory stats, CPU history). Reduced Mean Time to Resolution (**MTTR**) for customer cases by **~50%**.
- **Kernel and Driver Modernization:** Led the upgrade of underlying OS stack (Wind River Linux, DPDK, FXOS) across multiple releases, resolving complex dependency chains and driver compatibility issues.

## **SONICWALL | Software Engineer | Bangalore, IN | Sep 2017 – Apr 2020**

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Progressed from Support to Core Development, building essential tools and features for SonicOS and Next-Gen Firewalls

- **Tool Development (Python):** Designed and developed the **TSR (Tech Support Report) Analysis Tool**, parsing **100,000+ line log files** using 20,000+ regex patterns. Reduced average support case analysis time from hours to minutes.
- **Cross-Vendor Migration:** Built a web-based **Configuration Migration Tool** to automatically convert Cisco, Checkpoint, Sophos, Fortinet, Juniper and Palo Alto configs to SonicWall OS format, accelerating new customer onboarding.
- **Switch Integration:** Architected a unified management layer allowing SonicWall Firewalls to configure and monitor connected SonicWall Switches via LLDP and custom APIs.
- **Feature Development:** Implemented key features including AWS integration endpoints, FTP logging, and ARP Storm Control.

## **SONICWALL | Enterprise Technical Support Engineer | Bangalore, IN | Jun 2015 – Sep 2017**

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- **High-Stakes Troubleshooting:** Provided expert-level support for Fortune 500 clients, resolving critical outages involving VPNs, HA clusters, and routing protocols (OSPF/BGP).
- **Lab Management:** Managed a test lab of **75+ devices** (Firewalls, Switches, SSLVPN, Controllers APs) to reproduce complex customer topologies and verify bugs.

## **EDUCATION**

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- **Master of Technology, Software Systems (Security)** | BITS Pilani | 2023 (WIP)
- **Bachelor of Engineering, Computer Science** | Visvesvaraya Technological University | 2015

## **CERTIFICATIONS & AWARDS**

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- **Certifications:**
  - AWS Certified Cloud Practitioner (*Targeting Dec 2025*)
  - [Oracle Certified Cloud Infrastructure Foundations Associate](#)
  - [IBM SevOne NPM](#)
  - [SonicWall Network Security Administrator \(SNSA\)](#)
  - [Certified SonicWall Security Administrator \(CSSA\)](#)
- **Awards:**
  - [Cisco Connected Recognition Award](#) (2021, 2022): For SR-IOV Support and VirtIO optimization.
  - [SonicWall Technical Master](#) (2020): For contributions to firewall development and tool creation.