

# 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, MySQL, Bash
Systems	Linux Kernel, Memory Management, Intel DPDK, SR-IOV, KVM, QEMU, PCIe, Vmware ESXi, VirtIO
Networking	TCP/IP, UDP, BGP, OSPF, VLAN, VXLAN, ARP, STP, LACP, IPsec VPN, SSL/TLS, NAT, ACLs, 802.1x
Cloud & DevOps	AWS, Oracle Cloud (OCI), Alibaba Cloud, Azure, GCP, Terraform, Docker, Kubernetes, Jenkins
Tools	GDB, Valgrind, Perf, ftrace, crash, Wireshark, Tcpdump, Cisco TRex, Git, Perforce, Jira, CI-CD

## PROFESSIONAL EXPERIENCE

**IBM** | Software Developer | *Markham, ON* | *Apr 2024 – Dec 2025*

*Tech Stack: Go, C++, MySQL, PHP, Bash, gRPC, Protobuf, REST, CentOS/RHEL, Docker, Podman, Kubernetes*

- **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.
- Implemented D-Bus and CAP\_NET\_ADMIN based **NAT** controls to enable NMS to operate seamlessly across overlapping IP ranges in customer environments.
- Resolved **35+ high-priority escalations** involving Kafka message bus crashes, NMS upgrade failures, database schema corruptions, SDP Export problems, and resolved malfunctioning of various plugins including ICMP, SNMP, etc.
- Streamlined device discovery poller process by resolving issues that caused failures due to unset constants and memory exhaustion errors, ensuring successful network device identification.
- Enhanced **usability** and **debuggability** by adding synthetic indicators for interface error monitoring. Built an observation utility to **trace objects through the Kafka**-based ingestion pipeline and added synthetic indicators for interface error monitoring, improving system debuggability.

**CISCO** | Software Engineer | *Bangalore, IN* | *Aug 2020 – Mar 2024*

*Tech Stack: C, C++, Python, Bash, Terraform, DPDK, RHEL, Kernel, KVM, Public Clouds, SR-IOV, VirtIO, Wireshark*

- **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 ASAv-KVM deployments.

- **Debugging & Tooling:** Enhanced the **Cisco TAC reporting** by integrating granular datapath logs (mbuf pools, memory stats, cache misses). 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.
- Actively contributed to development processes, including **code reviews, functional spec reviews, and CI/CD pipeline improvements**, fostering a collaborative engineering environment. **Mentored and onboarded new team members**, providing guidance on best practices, debugging techniques, and cloud integrations.

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

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*Tech Stack: C, C++, Python, Bash, Linux, VxWorks, BSP, API, Routing, Switching, Firewalls, Network Security*

- **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.
- Worked on critical network capabilities by resolving complex issues in wire mode over **LAG, High Availability, Memory Management**, implementing advanced log monitoring systems, optimizing syslog analysis workflows, and developing robust **FTP logging and TSR** export functionality within SonicOS.
- **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:** Developed a unified management layer allowing SonicWall Firewalls to configure management, 802.1x, LACP, STP and monitor connected SonicWall Switches via LLDP and custom APIs.
- Implemented key features and their API endpoints including AWS integration endpoints, FTP logging, and ARP Storm Control.

**SONICWALL** | Enterprise Technical Support Sr. 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, Port forwarding, Remote Access VPNs, Routing (OSPF/BGP/Policy based routing), Switching, MPLS, VXLAN, Load Balancing, HA clusters and Syslog Analyzers.
- **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 (*WILP*)
- **Bachelor of Engineering, Computer Science** | Visvesvaraya Technological University | 2015

## CERTIFICATIONS & AWARDS

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### Certifications:

- [Oracle Certified Cloud Infrastructure Foundations Associate](#)
- [IBM SevOne NPM](#)
- [SonicWall Network Security Administrator](#) (SNSA)
- [Certified SonicWall Security Administrator](#) (CSSA)
- CCNA (Cisco Internal)

### Awards:

- [Cisco Connected Recognition Award](#) (x2): For SR-IOV Support (2021) and VirtIO optimization (2022).
- [SonicWall Technical Master](#) (2020): For contributions to firewall development, tool creation and support excellence.