

# RAVI KOOTHATI

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## SUMMARY:

- **Software Developer** with a Masters degree in Software Systems and an extensive experience of **9+ years** in developing System Platform Software, Network Datapath, Applications and Tools.
- Proficient in **Layers 2,3,4&7 networking, Network Security, Virtualization, Cloud Computing, Linux Internals, Containerization, Software Architecture**, with a keen grasp of latest technologies.
- Hands-on experience in design, configuration, development, and troubleshooting of diverse public and private cloud platforms and networking products including firewalls, routers, and switches.
- Adept at **debugging and optimizing system performance**, including resolving **kernel/user space issues, concurrency problems**, and **memory leaks**.
- **Collaborative team player** experienced in fostering relationships across cross-functional teams, contributing effectively to collective objectives, mentoring, and driving process improvements.

## SKILLS & TECHNOLOGIES

- **Programming:** C, C++, Python3
- **Networking:** TCP/IP, Network Security, Routing, Switching, VPN (IPsec/SSL/TLS), NAT, VLAN, SR-IOV, SD-WAN, HA.
- **Cloud Platforms:** AWS, Azure, GCP, Oracle Cloud (OCI), Alibaba Cloud
- **Virtualization & Containerization:** KVM, VMware, Intel DPDK, Docker
- **Web Development:** HTML, CSS, Javascript, XML, JSON, REST.
- **Version Control and Management:** Git, Perforce, Jira, Confluence, Target Process, Agile, Kanban
- **Tools:** Visual Studio, Linux, Cisco TRex, MS Office, Windows

## EMPLOYMENT

SOFTWARE ENGINEER	IBM SEVONE	APR 2024 – TILL DATE
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| <ul style="list-style-type: none"><li>• Developed features and resolved critical bugs in the <b>Network Management System (NMS)</b>, focusing on <b>NAT support, peering, SNMP, and database integrity</b>.</li><li>• Implemented <b>D-Bus and CAP_NET_ADMIN</b> configurations to enable seamless <b>Network Address Translation (NAT)</b> between multiple NMS environments.</li><li>• Enhanced <b>cluster management</b> by adding support for removing <b>inaccessible peers and HSA nodes</b> in active NMS environments.</li><li>• Optimized SNMP communication by fixing <b>IPv6 compatibility issues</b>, ensuring dual-stack agent support.</li><li>• <b>Improved system stability</b> by automating the <b>removal of unknown kernel versions</b> and enhancing <b>Supervisord functionality</b> post-HSA removal.</li><li>• <b>Hardened security</b> by patching <b>critical Golang dependencies</b> and migrating container images to verified publishers.</li><li>• <b>Troubleshoot major escalations</b>, resolving <b>NMS upgrade failures, schema errors, ICMP plugin malfunctions, and SDP export issues</b>, minimizing downtime for customers.</li><li>• <b>Enhanced device discovery and policy enforcement</b>, ensuring consistent network monitoring and system reliability.</li><li>• <b>Optimized SQL schema updates</b>, ensuring idempotent database migrations to prevent upgrade failures.</li><li>• <b>Collaborated with cross-functional teams</b>, providing expertise on <b>containerized deployments, OAuth2 OIDC authentication, and peering configurations</b>, ensuring seamless integrations.</li></ul> |  |  |
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SOFTWARE ENGINEER	CISCO INC.	AUG 2020 – MAR 2024
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| <ul style="list-style-type: none"><li>• Developed and enhanced <b>Cisco ASAc (containerized firewalls)</b>, integrating with <b>SFCN</b> using <b>C, Docker, and Kubernetes</b> for seamless network service chaining.</li><li>• Enabled <b>SR-IOV support</b> for virtual NICs, adding compatibility for <b>Broadcom NetXtreme and Mellanox ConnectX-5 DPUs</b> in <b>Cisco ASAv and FTDv</b> deployments across <b>Oracle Cloud and private cloud platforms</b>.</li><li>• <b>Optimized performance</b> by resolving <b>NIC underruns, memory leaks, core dumps, CPS/PPS bottlenecks, and hot-plugging issues</b> across <b>public and private cloud environments</b>.</li><li>• Designed and implemented <b>horizontal autoscaling</b> for ASAv in <b>Alibaba Cloud</b> using <b>Python3 and Terraform</b>, improving scalability and resource efficiency.</li></ul> |  |  |
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- **Migrated Azure virtual firewall deployments from Python 2.7 to Python 3.9**, addressing dependency challenges while upgrading **Wind River Linux OS and FXOS**.
- Upgraded key system components, including **Wind River Linux LTS 22, DPDK v21, and FXOS**, ensuring stability, improved performance, and compatibility with cloud platforms.
- **Enhanced troubleshooting and debugging capabilities** by integrating **datapath logs** into debug commands and **TAC reports** accessible via ASAv CLI.
- Actively contributed to development processes, including **code reviews, functional spec reviews, and CI/CD pipeline improvements**, fostering a high-quality and collaborative engineering environment.
- **Mentored and onboarded new team members**, providing guidance on best practices, debugging techniques, and cloud integrations.

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<b>SOFTWARE DEVELOPMENT ENGINEER</b>	<b>RED PIRANHA</b>	<b>MAY 2020 – AUG 2020</b>
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- Developed features for Crystal Eye, a Linux based network operating system running on firewalls including **SSLVPN Module enhancements like LDAP Integration, Static IP configurations, SSL Perceive and Bump**.
- Designed system specifications for SSLVPN features and ensured seamless integration into the existing system.
- Collaborated on code reviews, test case development, documentation, and process enhancements.

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<b>SOFTWARE DEVELOPMENT ENGINEER</b>	<b>SONICWALL INC.</b>	<b>SEP 2017 – APR 2020</b>
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- Designed and implemented solutions to integrate **SonicWall Switches** with Firewalls, enabling granular control and end-user monitoring through a unified management interface.
- Resolved complex issues related to **wire mode interfaces, log monitoring, syslog analysis, FTP logging, and TSR exports** in SonicOS.
- Developed **CLI and API interfaces** for key features, including **Flow Reporting, ARP Storm Limit, AWS Integration, and SonicWall Switch Integration**.
- Built web-based tools like the **TSR Analysis Tool** and **EXP Viewer** using Python 3.7 and regular expressions to parse logs and display user-friendly outputs.
- Worked on a **web-based migration tool** to help customers seamlessly migrate configurations from other vendors (Cisco, Fortinet, Palo Alto, etc.) to SonicWall devices, minimizing transition friction.
- Diagnosed and resolved customer issues by replicating complex environments using tools like **vSphere, LAN bridges, SSL applications, content filtering, load balancing, VLAN, 802.1x, VPN**, and routing protocols.

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## EDUCATION

- [Master of Technology, Software Systems-Security](#). Birla Institute of Technology and Science 2021-2023 | GPA 3.6
- [Bachelor of Engineering, Computer Science & Engineering](#). Visvesvaraya Technological University 2011-2015 | GPA 3.0

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## CERTIFICATIONS & COURSES:

- [IBM SevOne NPM Overview](#) (April 2024)
- [Oracle Certified Cloud Infrastructure Foundations Associate](#) (Feb 2022)
- [Crystal Eye Certified Engineer](#) (CECE)
- [SonicWall Network Security Administrator](#) (SNSA)
- [Certified SonicWall Security Administrator](#) (CSSA)
- Cisco Certified Networking Associate (CCNA - Cisco Internal Course)

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## ACHIEVEMENTS:

- As part of Hackathon 2023, 1000eyes process was integrated to into containerd daemon running Cisco FTDv to improve network monitoring for customers.
- [Cisco Connected Recognition Award for extensive work on VirtIO issues](#) (Feb 2022) for resolving intricate VirtIO issues in ASAv/FTDv deployments in OCI, contributing significantly to product enhancement.
- [Cisco Connected Recognition Award for SR-IOV Support](#) (March 2021) for pioneering SR-IOV Support, optimizing performance in ASAv/FTDv deployments in Oracle Cloud Infrastructure.
- Recognized as a [SonicWall Technical Master \(April 2020\)](#) for comprehensive contributions to firewall development, bug resolution, and rapid customer environment deployments.
- [SonicWall Outstanding Contributor for Q4 FY 2019](#)
- [SonicWall Key Contributor for FY 2018](#)