

# Siddesh Vilas Pawar

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Connectivity and Network Infrastructure Engineer with 6+ years of experience in large-scale network operations, data center environments, and vendor management. Proven track record in executing complex project lifecycles, optimizing network performance, and managing multi-vendor hardware deployments. Proven track record of enhancing network performance and securing enterprise environments, with experience in UNIX, TCP/IP, network fundamental accompanied with python, holding Msc in Cybersecurity with a technical focus on digital forensics, ethical hacking and penetration testing. Working with IETF on post-quantum cryptographic algorithms approved by NIST.

## Education

**University of Surrey, MSc in Cyber Security**

February 2025- January 2026

**K.J. Somaiya college of Engineering, B.Tech in Electronics and Telecommunications**

June 2014 - June 2018

## Work experience

**Cybersecurity Part-Time engineer (Infrastructure Setup) | Londis, UK**

February 2025 – present

- Developed a custom Asset Risk Management **web application** using **React** and **Firebase** (deployed via GitHub) to automate risk calculations and digitalize **asset tracking**.
- Managing data protection standards across store operations and digital transaction systems.
- Establishing GDPR compliance frameworks and implementing security protocols for the site's IT infrastructure.

**Tata Consultancy Services, System admin**

May 2022 – January 2025

- Configured and managed **multi-vendor network devices** (Cisco, Aruba, Meraki), specifically resolving high-latency issues to optimize **IPTV streaming performance** and overall network throughput.
- Managed IPAM/DNS/DHCP using **Infoblox**, URL filtering, IP allocation, maintenance of critical DNS records (MX, A, CNAME).
- Monitored, configured, and troubleshoot **Meraki** devices and **VMware SD-WAN (VeloCloud) Edge devices**.
- Specialized in authentication issues, configuring ClearPass, and planning upgrade and testing activities.
- Managed a complex security estate including **Checkpoint**, **Cisco ASA**, **Cisco ACI**, and **Cisco Secure Workload (CSW)**. Maintained secure **DMVPN** connections for site-to-site communication.
- Configured **F5 Load Balancers** to ensure application high availability and performed traffic analysis to identify bottlenecks, carried out Failover activity addressed the TTL configuration issues on domain names.
- Utilized monitoring tools such as **SolarWinds**, **watchdog** and **ServiceNow** for issue tracking and resolution.
- Implemented **Infrastructure as Code (IaC)** by utilizing **GitLab** CI/CD pipelines to deploy and manage firewall rules within **Google Cloud Platform (GCP)** environments.
- Led technical presentations in **Change Advisory Board (CAB)** meetings, justifying risk assessments to secure approvals for critical infrastructure changes, and successfully gain highest success rate.
- Conducted research and simulations on Post-Quantum Cryptography (PQC) algorithms using **Qiskit SDK** (Terra, Aer) to assess future network encryption standards.

**CSS CORP PVT LTD (now MOVATE), Technical Advance Consultant - Network Engineer**

February 2021 – April 2022

- Provided network solutions for users with Aruba ClearPass products on-premises or on-cloud, ClearPass deployment as a **cluster**.
- Served as the L3 Escalation Point for AAA issues; utilized **Access Tracker** and **Policy Simulation** tools to reduce mean-time-to-resolution (MTTR) for complex authentication failures by 40%
- Designed a **self-registration Guest Captive Portal** with **SMS gateway integration**, automating access for 500+ daily visitors while maintaining audit logs for compliance.
- Managed the lifecycle of **HP ProLiant servers** and **VMware ESXi hosts**, performing firmware upgrades via **iLO**, replacing faulty hardware (RAID controllers, memory), and resolving **Purple Screen of Death (PSOD)** incidents to minimize downtime.
- Integrated **Microsoft Intune** extensions to enforce endpoint compliance (Posturing) and connected ClearPass with multi-vendor NAS devices (Aruba Controllers, Cisco Switches) and **Hybrid Active Directory** environments.
- Managed the internal Public Key Infrastructure (PKI) using **AD CS**, handling the generation, installation, and renewal of **EAP-TLS certificates** across the ClearPass estate.
- Utilized Jira for tracking bug registrations, incident reporting, and documenting resolution procedures.

**Unique Enterprise @Mumbai International Airport Ltd, Network Engineer**

August 2019 – February 2021

- Secured the **GVK-MIAL** airport network perimeter by configuring and managing next-gen firewalls (**Checkpoint**, **FortiGate**, **Palo Alto**), actively blocking malicious IPs and enforcing strict blacklisting policies to prevent cyber threats.
- Operated as a Layer 1 Security Analyst, conducting daily **spam mail analysis**, monitoring USB mass-storage access violations, and performing port-blocking audits to ensure compliance with aviation security standards.
- Monitored critical links (ILL/MPLS) and managed Vendor Service Level Agreements (SLAs) with ISPs (**Tata**, **Airtel**, **MTNL**), raising Trouble Tickets (TT) and driving rapid resolution for outages to maintain 24/7 airport operations.
- Managed a complex, heterogeneous network environment comprising **Cisco**, **Juniper (EX/MX)**, **Nortel**, **Avaya**, and **Allied Telesis** devices. Utilized **Juniper Junos Space** and **Contrail** for centralized network management and automation.

**Orient Technology**

October 2018 – August 2019

- Implemented Static IP subnet allocation for **SMB services** and **VLANs on L2 switches**.
- Developed troubleshooting skills for resolving issues in complex wireless network environments on **IEEE 802.11** standards.
- Implemented OTP verification for customer secured login and DHCP option 82 for auto-login features.
- Resolved high latency issues in gaming through comparative analysis among different device

## Projects

- Automated configuration of OSPF on routers using Netmiko, Paramiko module of Python.
- Designed a Python script to monitor network interfaces using SNMP and send alerts to the administrator.
- Developed Python scripts for taking configuration backups of network devices using TFTP processes.
- Successfully **migrated Juniper SRX3600** to Palo Alto as an internal firewall.
- Actively participating in the IETF workgroup on MPLS over IP Data packets, PQC migration for EU.
- Worked on **Digital Forensics**: Autopsy, Volatility Framework (Memory), Wireshark (Network), FTK Imager, SANS SIFT Workstation, zsteg.
- Developed a **Python-based Hybrid Encryption tool** integrating **FIPS 203 (ML-KEM/Kyber)** algorithms via the **Open Quantum Safe (liboqs)** library to demonstrate quantum-resistant secure file transfer methodologies

## Skills

### **Technical Skills:**

- **Programming Languages:** C/C++, Python, JavaScript, CSS, HTML, Django, GIT & GITHUB.
- **Networking Technology:** CCNA R&S, JNCIA (JUNOS), MPLS, BGP, OSPF, VRRP, VPN, RSTP, ISIS.
- **Security Technology:** IBM QRadar, Skyatp (Juniper), Fortigate(NSE1, NS2), Juniper Junos, checkpoint, cisco CSW (Tetration), cisco secure firewall, cisco ISE.
- **Networking Tools:** Amazon SANDBOX, GNS3, VMware Workstation, Pycharm, PTRG Network Monitoring.
- **Network Solution:** Aruba CPPM, Microsoft AD, Aruba controller, Azure Intune, LinkProof NG Radware LB.
- **Cloud Technology:** Amazon AWS, Microsoft Azure.
- Lifecycle Management, Change Advisory Board (CAB), SLA/Vendor Management.
- Infrastructure: Structured Cabling, Data Center Operations, Network Design, Rack/Stack/Power.
- **PQC TOOLS:** Qiskit SDK

## Appreciations

- Successfully received a letter of appreciation for network automation from GVK-Mumbai International Airport
- Received a letter of appreciation from Makermela for the "Engistat AR app" project.
- Experience investigating network-based data for anomalies at Mumbai Airport.

## Achievements

- Winner of RC Nitro competitions pan India, including IIT Bombay Techfest and IIT Roorkee.
- Successfully organized IIT Bombay Technical event named "International Full-throttle Event 2019-20".

## Certification

- **ISC2 Certified in Cybersecurity (CC)** Certificate number: 2699643 Jul 1, 2025 - Jun 30, 2028
- Juniper Networks Certified Associate - Junos (JNCIA-Junos) from juniper learnings – (skills: networking)
- Fortinet : NSE 1, 2.
- IBM QRadar SIEM Foundation issued by IBM- <https://www.credly.com/badges/85d585b0-124b-4599-8e94-e977e5e1d00d>

## Extra-Curricular

### **Deloitte Australia Technology Job Simulation on Forage - October 2023:**

- Completed a job simulation involving data analysis for Deloitte's Technology team, created a data dashboard using Tableau.
- Wrote a proposal for a client project to create a functioning dashboard, used Excel for data classification, and drew business conclusions.

### **RC NITRO RACING:**

- Travelled to Indian institutes that organized various technical events and have participated and won multiple RC nitro car racing awards, like IIT BOMBAY TECHFEST, IIT CHENNAI

## Dissertation

### **Design and Evaluation of StrongVPN: A Pure Post-Quantum VPN Architecture    *Submitted to University of Surrey***

- Designed a full VPN architecture leveraging lattice-based key encapsulation mechanisms (ML-DSA AND ML-KEM) and reduction optimizations for post-quantum performance.
- Designed and evaluated the StrongVPN protocol stack more focused on resilience against quantum-capable adversaries, cryptographic agility, and performance under constrained environments, also deployed using EC2 multi regional instances. (evaluation against VPN standards IPsec/OpenVPN/WireGuard).
- Conducted benchmarking of PQC primitives, network performance analysis, and comparative evaluation against classical VPN protocols.

## Publication

**Siddesh Vilas Pawar, Liqun Chen. "Design and Evaluation of StrongVPN, a Pure Post-Quantum VPN Architecture."**  
**TechRxiv, November 18, 2025.**

**DOI: [10.36227/techrxiv.176127352.21222483/v2](https://doi.org/10.36227/techrxiv.176127352.21222483/v2)**

**Siddesh Vilas Pawar. "The Definitive Cryptanalysis of RSA: 55 Attack Vectors, Complete Mathematical Proofs, Tool Ecosystem, and Security Boundaries."** *TechRxiv*. January 14, 2026.

**DOI: [10.36227/techrxiv.176836577.74239211/v1](https://doi.org/10.36227/techrxiv.176836577.74239211/v1)**