

SARTHAK BHAGIRATH PATIL

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EDUCATION

Bachelor of Engineering (B.E.) – Electronics & Telecommunication Engineering

Vishwaniketan's Institute of Management Entrepreneurship and Engineering Technology (University of Mumbai)

Graduation Date: May 2026

CORE COMPETENCIES & SKILLS

- **Integration & Migration:** OS/HW/SW configuration, network interface integration, system migration frameworks, validation, and release management.
- **Automation & Scripting:** Python (Automation & Data Analytics), Bash Scripting, Version Control (Git/GitHub), CI/CD fundamentals.
- **Troubleshooting & Diagnostics:** Network & log analysis (Wireshark, Splunk), signal acquisition diagnostics, root-cause analysis, escalation management.
- **Process & Change Management:** Service delivery frameworks, technical documentation, quality assurance, test case execution, continuous improvement.
- **Networking & Telecom:** TCP/IP, DNS, DHCP, Subnetting, Routing, Firewalls, VPNs, CCNA 200-301 Fundamentals.
- **Emerging Tech & Analytics:** Artificial Intelligence (Machine Learning models for anomaly detection), IoT systems (ESP32, Raspberry Pi, STM32), Cloud Basics (AWS EC2, S3, IAM, VPC).
- **Consultative & Soft Skills:** Technical communication, client requirement mapping, data-driven customer insights, cross-functional collaboration.

TECHNICAL & INTEGRATION PROJECTS

CableScope – AI-Powered Cable Fault Detection & Diagnostics System (Jan 2025 – Mar 2025)

- **Scope & Planning:** Designed and defined project scope for an automated fault detection system integrating hardware sensors, embedded controllers, and data analytics models.
- **Integration & Execution:** Successfully integrated STM32 (signal generation/acquisition) with Raspberry Pi for real-time processing, data visualization, and ML-driven fault location.
- **Troubleshooting & QA:** Developed test cases to validate accuracy of Time Domain Reflectometry (TDR) signals; diagnosed and resolved hardware/software interface bugs during integration phases.
- **AI & Analytics:** Applied machine learning algorithms on acquisition data to automate fault diagnosis, reducing troubleshooting time significantly.

Privacy Pi – Secure IoT & Network Privacy Gateway (May 2024 – Jul 2024)

- **System Configuration:** Deployed and configured OS, software packages, network firewall rules, and VPN gateway setups on single-board hardware.
- **Scripting & Validation:** Wrote custom configurations and scripts to automate traffic filtering, ad-blocking, and network interface routing.
- **Quality & Testing:** Executed validation test scripts to analyse network throughput, latency, and security logs using Wireshark to ensure quality delivery.

Slipper Zero – Wi-Fi Network Security & Diagnostic Tool (Aug 2024 – Oct 2024)

- **Integration & Development:** Built an ESP32-based network diagnostic tool; prepared and validated custom scripts for packet sniffing and protocol assessment.
- **Documentation & Optimization:** Documented execution processes and hardware/software configurations; authored an IEEE-published research paper based on functional testing and validation results.

CERTIFICATIONS & TRAINING

- **CCNA 200-301 Network Fundamentals** (July 2026)
- **Complete Networking Fundamentals** – Simplilearn
- **API Security Fundamentals** – APIsec University (Oct 2025)
- **Introduction to Cybersecurity** – Cisco Networking Academy (Sep 2025)
- **Advanced IoT** – Dnyanda Sustainable Engineering Solutions (Aug 2023)

KEY ACHIEVEMENTS & HIGHLIGHTS

- **Research & Publication:** Published IEEE research paper detailing system architectural design, script validation, and network evaluation. <https://doi.org/10.1109/qcwot63882.2024.10805625>