Joshua M Varughese

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Education

Vellore Institute of Technology, B.Tech. in Computer Science and Engineering   Sept 2022 – Present
- CGPA: 8.23
- **Specialization:** Cybersecurity and Digital Forensics

Technical Skills

Languages: C, Python, SQL, Bash, PowerShell Scripting, R, HTML, CSS, JavaScript
Frameworks and Libraries: OpenCV, Tensorflow, CanSat, CubeSat
Developer Tools and Platforms: GitHub Actions, Docker, AWS, Kubernetes, Firebase, Terraform, Ansible, Jenkins
Cybersecurity: Linux System Administration, BurpSuite, Wireshark, Autopsy, OpenVAS, Nmap

Professional Experience

Space Entrepreneur Intern, INDIA SPACE LAB (Winter Internship)   Dec 2024 – Jan 2025
- Researched and compared 3+ CubeSat architectures, analyzing trade-offs between power, cost, and data throughput for specific use cases.
- Trained a computer vision model using TensorFlow Lite, enabling real-time animal species classification onboard a drone with 85% accuracy in tests.
- Optimized the data pipeline for the drone system, reducing image processing latency by 30% to allow for near real-time tracking and monitoring.

Projects

SARUS - Network Discovery Tool based on Lua Script and NSE   github
- Architectured a lightweight Bash network reconnaissance suite with both CLI and GUI interfaces.
- Engineered an NSE and Lua-based scanning engine capable of scanning a /24 networks in < 45 seconds for rapid ICMP host discovery and stealthy TCP SYN port scanning.
- Designed the sarus-ui using Zenity for visual scan configuration, real-time progress tracking, and results management.
- Packaged the complete toolset as a Debian (.deb) file, reducing setup time to <10 seconds and automating dependency handling on Linux systems.
- **Tools:** Bash, Nmap Scripting Engine, Lua Scripts, Zenity.

EDITH – Host-based Intrusion Detection System   github
- Built and packaged lightweight Bash-based HIDS deployed as Debian package for real-time log analysis.
- Authored SSH brute-force detection with >98% accuracy against 1,000+ simulated attacks.
- Architected daemonized service with dynamic reloads ensuring < 2s update downtime.
- Enabled customizable shell-based alerting for seamless integration with syslog, SIEM, and automated scripts, processing 10,000+ events/minute with zero alert loss.

UNITY SERVE – NGO Web Portal   github
- Designed and deployed a full-stack web portal using React and Firebase for donations and volunteer management.
- Achieved <2s page load times and 90+ Lighthouse score via Firebase Hosting CDN optimization.
- Ensured 99.9% uptime and scalable traffic handling using Firebase's serverless infrastructure.
- Implemented security with Firebase Auth RBAC and SSL with zero critical vulnerabilities.
- **Tools:** React, JavaScript, Firebase, Lighthouse, GitHub, Google Maps API, RazorPay API

Certifications

- IBM Cybersecurity Analyst

Achievements

- Runner up for Business Ideathon at Advitya'24
- Secured AIR 209 in All India Space Lab Winter Internship Examination 2024-2025 out of 2000+ participating.