KAVENNESH BALACHANDAR

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EDUCATION:

Master of Cyber Security | GPA : 3.89/4.00   **August 2024 - April 2026**
Florida International University, Miami, FL.

PROJECTS:

Home Networking Lab - Personal Project | Salem, Tamil Nadu, India   **May 2025 - July 2025**
- Configured remote access with Debian, OpenSSH, and Ngrok, achieving 99.5% tunnel uptime with reconnect times consistently under 15 seconds even in low-bandwidth scenarios.
- Developed 6 systemd units and 3 automated recovery scripts, reducing setup steps from 8 to 1 and bringing deployment time down by over 70%.
- Implemented RBAC with SSH key rotation, system health monitoring, and secure logging pipelines to simplify troubleshooting, improve auditability, and enforce access boundaries.

VPN Monitoring & Detection System | Coimbatore, Tamil Nadu**,** India   **January 2024 - March 2024**
- Designed a DPI-based VPN detection system with ~95% accuracy across 100+ tunnels, reducing policy violations by 60%.
- Implemented 3-layer policy logic and integrated ELK with RBAC and triage runbooks, cutting median response time from 30 to 8 minutes.
- Built a real-time Node.js/Express dashboard with auto-refresh, session monitoring, and error handling for scalable deployment.

Enhanced Image Generator | Coimbatore, Tamil Nadu**,** India   **January 2023 - March 2023**
- Processed 1,000+ images with OpenCV, NumPy, and PIL—improving clarity (+5–7 dB PSNR) and F1 score by 3.2 points.
- Automated batch preprocessing to cut prep time by 50% and ensure consistent, scalable, and reusable image pipelines.
- Designed DPI-style heuristics for VPN detection with 95% test accuracy and integrated alerting to cut escalation time from 30 to 8 minutes.

WORK EXPERIENCE:

Student Teaching Assistant | Florida International University, Miami, FL   **January 2025 - Present**
- Led weekly labs for 60+ students across 4 courses, incorporating live demos and debugging clinics—improved lab completion by 22% and reduced resubmissions by 30%.
- Authored 10 exam guides and 15 workshop slide decks aligned with course outcomes, increasing course ratings from 3.9 to 4.5/5 and boosting attendance by 28%.
- Provided 8–10 hrs/week of one-on-one mentoring (study plans, code reviews, office hours), raising pass rates from 82% to 92%.
- Standardized grading rubrics and checklists, streamlining evaluations and ensuring consistent feedback.

Network Security Intern | INTERN DECCAN SOLUTION, Chennai, India   **December 2023 - February 2024**
- Deployed and tuned Cisco Secure Firewall 3100 series across 3 office sites—reduced unauthorized access attempts by 40% and cut mean time to recovery (MTTR) by 35%.
- Consolidated 25+ access rules and standardized TLS configurations, achieving zero audit findings and lowering false positives by 20%.
- Automated 12+ recurring Linux administration tasks using Bash and Python, saving ~6 hours/week and accelerating release prep by 25%.
- Documented detailed runbooks and defined monitoring thresholds for key alerts, improving incident handoffs and first-response time.

PUBLICATION:

VPN Blocker: Detection and Prevention of VPN Tunneling in Enterprise Networks.   **February 2024 - March 2024**
- Designed, built, and validated a Deep Packet Inspection (DPI)-driven VPN detection framework capable of identifying encrypted tunneling protocols such as OpenVPN and WireGuard with 90–95% accuracy across diverse enterprise traffic patterns.
- Achieved a 50–60% reduction in policy violations by deploying detection modules alongside access enforcement policies during a controlled pilot in enterprise environments.
- Integrated the system into an ELK-based logging and alerting stack, governing over 100 active VPN sessions daily, and enabling real-time monitoring with minimal latency.
- Implemented RBAC controls, audit logs, and interactive response runbooks—reducing incident MTTR by 30–40% and enhancing regulatory compliance readiness across the monitored infrastructure.

CERTIFICATIONS:

- Certified Network Security Practitioner (CNSP) – Merit (Oct 2025)

AWARDS AND EXTRA-CURRICULAR ACTIVITIES:

- Eraksha Cybersecurity Competition (Aug 2023): 1st place nationally for solving real-world cybersecurity challenges.
- Kavach Hackathon (Jun 2023): Qualified at college level for India's leading cybersecurity innovation program.
- Amazon AppSec CTF – NAMER (Sep 2025): Selected to compete globally in Amazon's Application Security Capture the Flag.

SKILLS AND STRENGTHS:

- Programming & Scripting: Python, Java, C++, Shell Scripting, Bash, Git.
- Security & Networking Tools: Wireshark, Nmap, Burp Suite, Metasploit, Tcpdump, OpenVPN.
- Operating Systems: Linux (Debian, Kali, Ubuntu), Windows Server.
- Version Control & DevOps: Git, systemd.