TIRTH DARJI

Cybersecurity | Ethical Hacking | IoT & Embedded Systems | Prototyping
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PROFESSIONAL SUMMARY

Cybersecurity undergraduate (GSFC University) specializing in ethical hacking, penetration testing, and IoT security, with hands-on experience in OSINT, network reconnaissance, and vulnerability assessment at NexSec Solution. Also a hands-on builder: designed and laser-cut the modular structure of a UGV, programmed its movement and camera feed, and 3D-printed enclosures for security and IoT projects using Fusion 360, AutoCAD, and Cura. Comfortable troubleshooting hardware, documenting work, and helping other students turn ideas into working prototypes.

TECHNICAL SKILLS

Offensive Security	Nmap, Burp Suite, Metasploit, Nikto, Gobuster, Wireshark, tcpdump, Netcat, Shodan
OSINT	OSINT Framework, Maltego, Recon-ng, theHarvester
Design & Fabrication	Fusion 360, AutoCAD, 3D printing (Ultimaker Cura), laser cutting (RDWorks), rapid prototyping
Hardware & IoT	ESP8266, ESP32, Arduino Uno / Uno R4 WiFi, Raspberry Pi, motors and drivers, camera modules, sensors, RFID
Programming	Python, Arduino C++, Bash, JavaScript, Git
Platforms	Kali Linux, Arch Linux, Linux Administration, VMware, VirtualBox, Docker

EXPERIENCE

Cybersecurity Intern | NexSec Solution Dec 2025
Vadodara, Gujarat

- Conducted OSINT investigations and digital footprint analysis on target entities to support professional security assessments.
- Performed active and passive reconnaissance to map attack surfaces and identify exposure vectors across target systems.
- Assisted vulnerability assessment workflows, documenting findings and contributing to formal security research reports.

Embedded Systems Intern | GUITAR Council, GSFC University Jul 2025
Vadodara, Gujarat

- Developed the movement control code for an Unmanned Ground Vehicle (UGV) on Arduino/ESP-based controllers with Python-based logic, including obstacle avoidance and GPS-assisted path planning.
- Integrated ESP microcontrollers, motors, and a motor driver, and set up a live camera feed for remote surveillance.
- Designed the complete modular UGV structure and fabricated the whole chassis on a laser cutter; designed enclosures for the electronic components.
- Added solar-assisted power management; ran hardware testing and fault diagnosis, and investigated IoT attack surfaces on the autonomous platform.

PROJECTS

Advanced ESP8266 Captive Portal Framework | ESP8266, Arduino C++, HTML/CSS, Fusion 360, Cura

- Engineered a captive portal on ESP8266 in Access Point mode demonstrating wireless credential interception in a controlled lab, using DNS spoofing, HTTP redirection, an embedded web server, and session tracking.
- Designed, sliced, and 3D-printed a custom enclosure for the ESP module.

SpectraCore: Portable Skin Color Measurement Device | ESP32-S3, ESP8266, AS7265x/AS7341, Qwiic/STEMMA QT

- Designed a modular handheld hardware architecture and a hub-and-spoke IoT system with an ESP32 master and ESP8266 slave nodes.
- Refactored node firmware for captive-portal WiFi setup, DHCP-assigned IPs, and self-registration with heartbeat re-registration.

VividYou: AI Lipstick Recommendation + Dispensing Machine | React, Flask, ESP32

- College minor project linking an AI shade-recommendation web app to an ESP32-controlled physical dispenser over the local network.

IR Blaster | ESP8266 NodeMCU, TSOP receivers, IR LEDs, SPIFFS

- Built a device with transistor-driven IR LEDs and TSOP receivers to receive, store, and transmit IR codes, with a web UI and SPIFFS storage.

Adaptive Path Planning for Indian Roads (Hackathon) | MATLAB, Simulink, RoadRunner

- Simulation project on adaptive path planning for autonomous vehicles in unstructured mixed traffic, with MATLAB/Simulink logic driving RoadRunner scenarios.

SECURITY LAB PRACTICE

- Completed beginner-to-intermediate Hack The Box machines (Starting Point) covering Linux privilege escalation and web exploitation.
- Performed web application testing in controlled scenarios: SQL injection, XSS, directory traversal, and authentication bypass.
- Explored wireless security (WEP/WPA2 cracking, evil twin, deauthentication) in a home lab; maintain a VirtualBox lab with Kali Linux, Metasploitable, and DVWA.
- Currently working through TryHackMe penetration testing and SOC analyst paths; preparing for CompTIA Security+.

LEADERSHIP, COLLABORATION & LAB EXPOSURE

- **Social Media Head**, college heritage club: lead the club's social media presence and coordinate with members on content and events.
- Assisted the former Technical Associate (Krish Shah) with laser cutting, 3D printing, posters, and templates in the college lab.

EDUCATION

B.Tech, CS Engineering (Specialization: Cybersecurity) | GSFC University, Vadodara Expected 2027

CGPA 8.3/10 | Completed 4th semester

CERTIFICATIONS

- Ethical Hacker; Introduction to Cybersecurity; Python Essentials 1 & 2 (Cisco Networking Academy)
- Hack The Box: Starting Point

LANGUAGES

English (Professional), Hindi (Native), Gujarati (Native)