



## Mohit Aphale

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### Professional Summary

Overall 7+ years of experience in cybersecurity across IT and critical information infrastructure industries. Experience includes securing IT/Embedded infrastructure and driving 'Secure by Design' framework across all stages of concept phase and product development. Technology exposure includes Embedded Devices, web applications, mobile applications, thick clients, IoT devices and APIs including direct experience with most international standards in critical infrastructure security.

### Work Experience:

#### Elektrobit Automotive GmbH (May 2020 – Present) – Cybersecurity Expert

Establishing cross departmental secure development, technical roadmaps and technology adoption oversight. Providing support to product teams charged with design and development of secure applications, systems and software for automotive controllers and supported infrastructure which includes Web Application, APIs.

##### Automotive Cybersecurity Process and Supplier Management

- Implement and drive the cybersecurity concept at the vehicle/component level in accordance with ISO 21434
- Execute TARA, define cybersecurity concept, goals and requirements
- Drive Engineering Software OTA security design and analysis
- Develop procedures for OEM and suppliers ([TARA](#), [security requirements](#), [cybersecurity goals](#), [Developer Interface Agreement](#))
- Provide consulting to OEM, Suppliers and internal teams as a technical expert in cybersecurity matters
- Review and walkthrough security work products provided by suppliers and provide gap report to OEM and Supplier (ISO 21434 Deliverable Work Products Analysis and Review)

##### Cybersecurity System Engineering

I am currently into learning stage of Cybersecurity System Engineering. Learn about system components (SW/HW/Network), their usage, how they are designed and used are in Automotive domain and make sense of cybersecurity within them. Components I worked are

- Firmware Over the Air update security design
- Derived security recommendations for Diagnostics Security Access, Vehicle Key Provisioning
- Derived security requirements for backend web applications and API's.

##### Penetration Testing and Vulnerability Assessment

- Established dedicated lab environment for fuzz testing on Web Applications, protocols, vehicle modules like Ethernet, WIFI, Bluetooth, USB and other software components.
- Attacks on individual ECU functions such as [OTA software updates](#), OS hardening, Web applications, in-car apps/services and more.
- Analysis of [CAN Communication bus](#)

#### Visteon Corporation (Sept 2017 – Dec 2019) - Embedded Security Engineer

##### Roles and Responsibilities

- Performed Penetration Testing and Vulnerability Assessment on Automotive devices
- Responsible for executing TARA, defining cybersecurity goals and Cybersecurity concepts
- Responsible for designing Cybersecurity plan and test cases for performing security testing

- Triage risk of identified vulnerabilities and findings
- Performed static code analysis using Coverity, port scanning, fuzz testing
- Developed a tool in python for performing automated CVE analysis on used libraries, OS, frameworks within a project.

### **Aujas Networks (April 2015 – May 2017) – Security Consultant**

- Perform Secure Code review for applications (Thick Client, Web and Android applications)
- Vulnerability Assessment and Penetration testing of applications by manual and automated approach.
- Attacks like Buffer Overflow, SQL injection, XSS, Deserialization on web applications, binaries, host.

### **HandsFree Networks (March 2014 – Jan 2015) – Product Engineer**

- Vulnerability Assessments for web applications
- Perform Secure Code Review for web application
- Training developers on Secure Code guidelines and methodologies.

### **Professional Expertise**

Programming Languages	Python, JAVA, PHP
Tools	IBM AppScan Source for Analysis, Burp Suite, CheckMarx, FlawFinder, Kali Linux, Nexpose, Coverity, Synopsys Defensics, HP-WebInspect, Wireshark, Binwalk, wFuzz, nmap, Ubertooth, Wifi-Pineapple, sqlmap, dirbuster, Ghidra, nikto and more...
Frameworks / Standards	Vehicle Security Standards <b>ISO 21434, SAE J3061</b> OWASP TOP 10, SANS TOP 25, WASC 2.0, CVE/CWE, CERT
Subject of Interest	<a href="#">Secure by Design</a> , Cryptography, Penetration Testing Threat Analysis and Risk Assessment (TARA), Application Security
Professional Certifications	<a href="#">Offensive Security Certified Professional (OSCP)</a>

### **Education**

Bachelor of Engineering in **Information Technology** (LNCT-S Bhopal) 2009 – 2013  
 Post Graduate Diploma in **Cyber Security** (C-DAC Bangalore) 2013 – 2014

### **Languages**

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken Production	Spoken interaction	
<b>ENGLISH</b>	C2	C2	C1	C1	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

### **Projects**

#### **CVE-Newsletter**

CVE Newsletter is developed in Python which will search for newly updated CVE's for a list of selected components/packages and send out a security newsletter to development and security teams.

#### **Threat Assessment and Risk Analysis Tool**

Developed an application in python which will prepare Threat Analysis and Risk Assessment based assets present in an Embedded Device or Software. TARA generated will be based on very generic threats defined for an asset in a master database.

#### **EMailSecure**

This project was developed as part of assignment in Post Graduate diploma at C-DAC Bangalore. We developed an email service using JAVA. Objective was to develop a secure email web application.

#### **InstantEval**

Automated evaluation of programming tasks and assignments. Inspired by CodeChef and ProjectEuler. For use in educational as well as competitive environments.