

Vasudha A M

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SUMMARY

Computer Science graduate with a security-first engineering foundation spanning automotive cybersecurity, safety-critical systems, and secure software design. As Safety Lead on a QNX RTOS-based automotive platform, owned the full security lifecycle of a complex system: threat modeling, risk assessment through TARA, safe-state analysis, and the structured documentation and taxonomies that made the system auditable and traceable end to end, in compliance with ISO 26262 and ISO/SAE 21434. Comfortable across the practical side of security work too, from vulnerability assessment to hands-on use of tools like Nmap, Burp Suite, Metasploit, and Wireshark. That same structured, risk-aware approach carries into software development and early exposure to Azure data tooling (Data Factory, Synapse, Fabric), alongside Python and SQL.

EDUCATION

Visvesvaraya Technological University (VTU) Bengaluru, Karnataka
B.E./B.Tech in Computer Science 2026

- Published 2 research contributions, including a patented innovation, “*System and Method for Dynamic Geofencing in Waste Management and Collection Notification*” (Indian Patent Office, filed Dec 2025), and a co-authored paper, “*AI-Driven Smart Waste Management with Geofencing and Civic Accountability*”, presented at ICEAMST 2025 (Springer Nature)
- Won **1st Place** for Best Project at the Project Exhibition (Dec 2025)
- Participated in the BGSCET 24-hour Advaya Hackathon (Apr 2025) and the SIET Tumkur 24-hour National Level Hackathon (Mar 2025)
- Placed in the **Top 20** at SKIT’s “Build For Bengaluru” 12-hour Hackathon (Feb 2025) and **Top 5** in a college-level Python coding competition (Dec 2024)

EXPERIENCE

Data Engineer Intern Jul 2026 – Present
InclinedPlane Bengaluru, Karnataka

- Reviewed and monitored ADF pipelines within a medallion-architecture Azure data platform built for a FTSE-listed enterprise client, tracking data quality and flagging pipeline failures for the engineering team
- Gaining working exposure to Azure Data Factory and Synapse by shadowing senior engineers on live pipeline monitoring, documentation, and issue triage, building toward deeper hands-on ownership over time
- Completed Microsoft Certified: Fabric Data Engineer Associate and Azure Data Fundamentals (DP-900) during the internship, pairing structured theoretical grounding in Azure data engineering with applied exposure on production pipelines

Automotive Cybersecurity Intern Jan 2026 – May 2026
BitArmora Technologies Pvt. Ltd. Mysore, Karnataka

- Co-led design and validation of AegisKernel, a QNX RTOS-based secure operating environment, within a **4-member** engineering team, owning the system’s safety architecture end to end
- Engineered and executed TARA, threat modeling, WCET validation, and safe-state analysis across **120+** critical operations, translating safety and security requirements into structured, traceable engineering artifacts in compliance with ISO 26262, ISO/SAE 21434, and ISO 21448
- Built and maintained the system’s core technical documentation, including SRS, Safety Envelope Specifications, architecture diagrams, and a Critical Operations Taxonomy, the structured data backbone that made the system auditable and traceable
- Applied this same risk-assessment and documentation discipline to data classification and governance thinking, the direct foundation for the cloud data engineering and governance work now being built on Azure, Python, and SQL

TECHNICAL SKILLS

Languages: Python, SQL, C
Cloud & Data Engineering: Azure Fabric, Azure Data Factory, Azure Synapse
Cybersecurity: Vulnerability Assessment, Threat Analysis, Ethical Hacking, ISO 27001
Cybersecurity Tools: Nmap, Burp Suite, Metasploit, Wireshark, Nessus, Hydra, Hashcat, John the Ripper, Nikto, Netcat, Kali Linux
Automotive Cybersecurity & Safety: TARA, ISO/SAE 21434, ISO 26262, ISO 21448, QNX
Web Development: HTML, CSS, Flask, REST APIs
Databases & Backend: MongoDB, Firebase
Mobile Development: Kotlin, Android Studio, Firebase
Tools & Platforms: Git, GitHub, GitLab, VS Code, Eclipse, Jira, Confluence, Canva

PROJECTS

RegenX: Dynamic Geofencing-Based Waste Management Platform Apr 2025 – Dec 2025
- Kotlin, Firebase, Google Maps API

- Engineered a smart waste management platform supporting real-time tracking and monitoring for residents and waste collectors using Kotlin and Firebase
- Implemented dynamic geofencing and location-based alerts using Google Maps API, enabling timely notifications for nearby waste collection events
- Integrated AI-powered complaint classification and prioritization workflows, reducing manual intervention in issue handling
- Architected dual user and collector modules with live location tracking, automated notifications, and route optimization capabilities

GoTogether: Ride-Sharing & Rewards Platform for Smart Mobility Mar 2025
- React.js, Node.js, Express, MongoDB

- Created a progressive web application enabling ride pooling, trip coordination, and reward-based user engagement
- Constructed a scalable backend architecture using Node.js, Express, and MongoDB to manage ride, user, and rewards data
- Integrated Google Maps services for real-time route visualization, navigation assistance, and trip tracking

CogniChat: A Cognitive Assessment Therapist Dec 2024
- BERT, GPT, Flask, MongoDB

- Implemented an AI-driven mental health assessment chatbot leveraging BERT, GPT, Flask, and MongoDB for personalized interactions
- Deployed dynamic persona-switching mechanisms based on real-time emotion detection to enhance conversational relevance
- Crafted an intuitive web interface using HTML, CSS, and JavaScript, improving accessibility and user engagement

CERTIFICATIONS

Microsoft Certified: Azure Data Fundamentals (DP-900)	2026
Certified Ethical Hacker – EC Council	Expected 2026
CS50 – Harvard University	2025
ISC2 – CISSP	Ongoing

VOLUNTEERING

Awareness Program on Cyber Threats Jul 9, 2024 – Jul 12, 2024
Conducted a week-long awareness program on effective usage of social media and cyber threats for high school students