



VINAYAK NAIK

+91-7406813824 ✉ vinunaik2108@gmail.com  LinkedIn  Portfolio 📍 Mangalore, India

Professional Summary

Performance-driven **Validation & Automation Engineer** with over 2 years of experience in the automotive domain, specializing in ADAS and HIL testing. Expert in real-time simulation, ECU functional verification, and test automation using **Vector CANoe, CANape, and Python**. Proven track record in developing automated test patterns and judgment criteria for safety-critical systems like **ACC, AEB, and LKA**. Adept at bridging the gap between manual validation and automated workflows to accelerate release cycles and improve diagnostic accuracy across CAN, UDS, and Ethernet protocols.

Skills

Programming & Querying: Python (NumPy, Pandas, Matplotlib, Seaborn), SQL

Automotive Tools & Protocols: CANoe, CANape, CAN, LIN, ETHERNET protocols, Excel-based validation reports.

HILc & ADAS Hardware Tools: VT Systems, RAMSCOPE, DAS ECU (5th Gen), DDT Tools, Trace 32 Vector Tools.

Professional Experience

Tata Consultancy Services (TCS)- Nagpur

Nov 2023 – Present

Hil Validation Engineer (ADAS)

Tools Used: Canoe, Canape, Excel

- **HIL Test Automation & Execution:** Lead the validation of ECU software using Hardware-in-the-Loop (HIL) setups, simulating real-world driving conditions to verify safety-critical ADAS features (Lane Keep Assist, Adaptive Cruise Control, Emergency Braking).
- **Test Logic Design:** Engineered automated test patterns and judgment logic for ADAS HIL testing, ensuring 100% reliability in pass/fail validation outcomes.
- **Diagnostics & Debugging:** Perform CAN/UDS log analysis using Trace32 and DDT tools to identify and resolve communication faults between ECUs.
- **Python Scripting:** Developed Python and SQL scripts to automate report generation, significantly reducing manual data handling.
- **Tool Expertise:** Utilize Vector CANoe for network simulation and CANape for real-time calibration and parameter monitoring.

Projects

Expense Tracker System | Python, MySQL, FastAPI

- Developed a web-based system to record, update, and validate daily expenses.
- Implemented backend data storage with category-wise and date-wise segregation to ensure data consistency and traceability.
- Built category-based and monthly analytics to visualize spending patterns and trends for accurate insight generation.

Automated Job Data Analysis Workflow | n8n, Google Gemini (LLM)

- Built an automated workflow to collect, filter, and validate job posting data from external APIs.
- Implemented logic to extract and validate ATS keywords, ensuring structured and consistent output data.
- Mapped job requirements against project portfolios to support relevance validation and prioritization.

Awards & Certifications

- Python: Beginner to advance for Data Professionals from Codebasics (2025)– Completed practical case studies in Python.
- On Spot Award, TCS (2025) – Recognized for outstanding contribution to ADAS/HIL validation project.

Education

Sahyadri College of Engineering and Management Mangalore

Graduated: 2023

B.E-Electronics & Communication Engineering

CGPA: 8.9 / 10

Languages

English | Kannada | Hindi