

Nishant Kumar Bharali

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EDUCATION

Virginia Polytechnic Institute and State University, Blacksburg, VA
Master of Science in Computer Engineering

August 2023 – Present

Vellore Institute of Technology, Vellore, TN, India
Bachelor of Technology in Electronics and Communication Engineering

2018 – 2022

WORK EXPERIENCE

Product Development Engineer | **Mahindra & Mahindra Limited** | Chennai, TN, India
R&D Electrical & Electronics Department [Automotive Product Development]

August 2022 – July 2023

- Managed cockpit software architecture for ICE & BEV Vehicles: Mahindra Scorpio N, XUV700, XUV400 EV. Conducted bench-level and vehicle-level testing.
- Partnered with Tier 1 suppliers for software validation, securing Google green light approval leading to **USD \$100K p.a. in CAPEX approvals** - \$10K more than the ask.
- Achieved **2 Android Auto certifications** post software testing processes - PCTS Verifier, QSuite, UX, GPS/Navigation, sensor logging leading to a **15%** revenue growth in sales.
- Tailored SRDs and SOPs with vendors for product manufacturing optimizing project timelines by 10%.
- Integrated OTA updates, GPS benchmarking and connectivity features with cross-functional teams like ADAS, HMI and wiring harness for client satisfaction.
- Demonstrated expertise in Android and QNX OS, achieving **93%** bug fixes in Android Auto's initial release; Diagnostics tools like CANalyzer, CANoe, Garuda 2.0 for CAN BUS analysis of Electronic Control Units (ECU).

Software Engineer Intern | **Oracle Cerner** | Bangalore, Karnataka, India

January 2022 – July 2022

- Worked on a scalable healthcare IT web application using Java, Spring Boot, Python, React, and JavaScript, focusing on patient-bed-nurse allocation.
- Created REST API controllers tested with POSTMAN, achieving 95% unit test coverage with JUNIT, Mockito, and Jest/enzyme.
- Conducted code reviews and merged around 20 commits/week reducing software defects by **20%** alongside optimizing RDBMS MySQL database size by 7% using scripts.
- Employed Agile scrums and machine learning to cluster suppliers using medical device data, saving the team 10 hours/week.
- **DevOps**: Utilized Jenkins for CI/CD and pipeline staging script-based automation, integration and deployment processes.

PROJECTS

Autonomous Navigation with Collision Avoidance using ROS | ROS - SLAM, GMapping, Odometry, Laser Scan, GazeboSim

- Designed an obstacle avoidance algorithm for which we used ROS GMapping in our 2 wheeled robot to generate a map using SLAM technique; Used the robot Laser Scan and Odometry data to generate this map.
- Performed high fidelity simulation on Gazebo to develop algorithms and test them; path planning was incorporated.

Idea Repository API | Spring boot, Redux Saga, Postman API, JSON, Git, Jenkins, MySQL, Oracle Database, React Framework

- An API service for a web application that implements CRUD functionalities through REST APIs.
- A user can document ideas over their team projects, store, edit and change priority from critical defects to stable issues.
- Established user security - authorization and authentication at the backend with Redux-based UI focus on the frontend. Rigorous testing using POSTMAN resulted in improved application user rating by 15%.
- Utilized redux-saga middleware instead of Thunk for faster web page response; improved scrolling efficiency by 10%

SKILLS

Technical: Python, Java, MATLAB, SQL, HTML, CSS, React, Linux, Git, CAN, LIN

Frameworks and Tools: RESTful API, GitHub, Jenkins, Microservices, Vector CANalyzer, CANoe, Wireshark, Android, OpenCV, POSTMAN, Android Auto PCTS Verifier, ROS, Gazebo, MySQL, Scikit-learn, Tableau, Power BI, Spring, JUNIT5, Jupyter

Other: Agile, JIRA, Product & Project Management, eLMS (Electronic Life Management System)