Nilesh Jain

+91-9311551884 | nilesh.embedded@outlook.com | https://www.linkedin.com/in/nilesh-jain1434/ | https://github.com/nilesh1434 | http://thenileshjain.com

SUMMARY

Organized and self-driven **Embedded System Engineer** with **1.5 Years** of professional experience. Fluent in **Embedded C/C++**, **CAN**, **Python**. Possess hands-on knowledge of **automotive field testing**, **retrofitting**, **MES**, **troubleshooting**, **HIL testing** and **Automotive SPICE**. Leverages **Agile** methodology to strengthen **test-driven** and **development** initiatives. **Adaptive** to new technologies and trends and constantly seeking to learn.

WORK EXPERIENCE

Software Engineer (Embedded/Firmware Development & Testing) – VGC, New Jersey **Dec 2022 – July 2024**

- Engineered test development using **C**, **C++**, **CPPUNIT** architecture and **python** using **Pytest**.
- Integrated **Elasticsearch** into Customer Directory to enhance search capabilities, increased **optimization** rate by **25%**.
- Helped clients with IT Solutions, **Troubleshooting** and **Debugging** leading to expansion of the company and gained trust among the clients.
- Used **Jenkins** as build management tool for continuous integration process along with **Git** as **Version Control** tool.
- Involved in bug fixing of various modules that were raised by the testing teams in the application during the **integration testing** phase.
- Analyzed software specifications and identification of **controller-based** application design, development, and testing.
- Utilized **C/C++** to develop software applications with **Bluetooth** and **Ethernet** functionality and **Python** for testing, data analysis and visualization.
- Created and maintained **Python modules**, made sure it was easy to deploy and leveraged **PYPi** for distribution and management of packages.
- Followed **test plans** through automation, collecting and analyzing test results to test multiple devices in the field to get necessary logs.
- Utilized **PuTTY** for serial communication and remote debugging during firmware testing phases, identifying, and resolving software issues.
- Deployed the developed firmware/software onto the target **ARM**-based embedded system.

Software Engineer (Embedded/Firmware Development & Testing) – VGC, New Jersey **Jan 2022 – Nov 2022**

- Worked on design of low-level firmware and debugging drivers for **low-level communication protocols** (**LIN**, **SPI**, **I2C**), **CAN protocol (data-link & physical layer)** development and analysis using **CAN** tools and implemented robust error-handling mechanisms (**HIL testing**) to enhance the fault tolerance, ensuring the reliability of critical vehicle functions along with **ASIC** verification tools.
- Effectively integrated and validated **UDS Diagnostics** to achieve efficient and accurate communication between control units and diagnostic tools. Conducted simulations/emulations using **MATLAB** and **Simulink**.
- Conducted **system-level black** and **grey box** testing for vehicle control systems, leveraging knowledge of **system architecture** and data flow to identify potential integration issues.
- Conducted hardware installations and **retrofitting**, ensuring seamless integration of new components into prototype vehicles.
- Attended weekly/Daily Standups, Retrospective, Sprint Planning, Code Review and completed story points on **JIRA** tool and worked in **Agile Methodology** in a 2-week sprint environment.

PROJECTS

Movies App (Android Studio, Dart, Flutter, Kotlin, Java)

- Developed a mobile/web friendly application similar to IMDb using **Android Studio**.
- Added widgets with animations using android **Animation APIs** in **Java** and **Kotlin**.
- Integrated with a movie database **API** to fetch and display **real-time** movie data.
- Utilized **XML** for layout design and **Java** for backend operations, ensuring seamless integration with native Android components.

15 Puzzle (Eclipse, Java, Maven, AI Heuristics, Algorithms)

- Built interactive visualizations to the game using **Java** and **Photoshop** which allows players to test their brain to the limits.
- Deployed two **AI Heuristic** algorithms that help users to progress through the game with different solutions as the AI learns new moves.
- Implemented unit tests in **JUnit**, and configured **Maven Builds** to ensure security and scalability of the application.

Exercise Break App (React.js, Android Studio, Express, Node.js, MongoDB, Kotlin, HTML, CSS)

- Designed and implemented the “Exercise Break App”, an advanced wearable mobile application for real-time heartbeat and location tracker using **COTS** software, **APIs** (Google Maps) and **MySQL** for relational database management.
- Leveraged **Android Studio**, **Kotlin** for mobile application with interactive widgets and **React**, HTML, CSS for user-friendly UI web application.
- Implemented **IoT connections** between wearables and mobile applications using **Bluetooth** protocols to provide users with accurate and optimized breaks.

SKILLS

Programming Languages: C/C++ | Python | Java | JavaScript | HTML/CSS | R | SQL
Frameworks & Libraries: MERN (Front-End) | Flutter | Dart | Automotive SPICE
Developer Tools: VxWorks | Git | GitHub | Docker | Linux | Jenkins | Virtual Studio Code | Eclipse | Android Studio
Testing: Unit Testing | Test Automation | HIL Testing
Protocols: CAN (data-link, physical) | CANalyzer (PCAN) | UDS/ECU | Ethernet | Bluetooth
Modeling Tools: MATLAB | Simulink

EDUCATION

University of Illinois at Chicago • BS Computer Science | Minor in Mathematics
Dean's List | Honors College