

ARUN CYRIAC

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PROFESSIONAL SUMMARY

Motivated Embedded Software Engineer with knowledge of C programming, microcontrollers, and basic communication protocols. Experienced in building project-based solutions and eager to contribute to real-world embedded applications.

TECHNICAL SKILLS

Programming Languages:	Embedded C, C++, Python (Basics)
Embedded Systems:	Bare-metal Programming, Interrupts, Timers, PWM
Microcontrollers:	ESP32, PIC18F4580
Communication Protocols:	UART, SPI, I2C, CAN, LIN, UDS
System Programming:	Linux Kernel System Calls, IPC mechanisms (Pipe, FIFO, Shared Memory), pThreads (Multi-threading)
Operating Systems:	Linux, Windows, RTOS
Automotive Standards:	ASPICE, V-Model, AUTOSAR (classic)
Development Tools:	Git, VS Code, DOORS, JIRA, CANoe, CANalyzer

WORK EXPERIENCE

Apprenticeship Trainee

Apr 2025 – Apr 2026

Marelli (India) Private Limited, Bangalore

- Worked on BCM and Cluster for MSIL and NISSAN OEMs (E/E architecture)
- Implemented software modules for exterior lighting control (headlamps, DRL, turn indicators), wiper actuation systems, interior lighting, and multicolor ambient lamp features.
- Hands-on experience in developing diagnostic features, including Diagnostic IDs (DIDs) and Routine IDs.
- Maintained full bi-directional traceability using DOORS between software requirements, software architecture, implementation, and testing phases ensuring ASPICE compliance.
- Documented software design specifications, test plans, and validation reports while utilizing Git for version control and JIRA for Agile sprint management.
- Conducted code reviews and performed static analysis using Polyspace to ensure code quality, adherence to MISRA-C standards, and early detection of potential defects.
- Utilized Vector CANalyzer/CANoe for CAN bus analysis, message verification, and protocol testing during integration and validation phases.

Embedded Systems Professional Trainee (ECEP)

Jul 2024 – Mar 2025

Emertxe Information Technologies, Bangalore

- Completed industry-focused embedded systems training.
- Developed embedded and Linux-based projects using C.
- Programmed PIC18F4580 using MPLAB X IDE.
- Implemented Linux system programming concepts: fork(), exec(), pipes, IPC, and signals.
- Worked on socket programming and protocol-level networking.
- Interfaced peripherals using GPIO, Timers, Interrupts, UART, SPI, and I2C.
- Managed version control and documentation using Git and GitHub.

PROJECTS

Student Score Prediction System

- Performed data analysis and visualization using Matplotlib.
- Implemented Linear Regression model for prediction.
- Trained and tested the model with real dataset.
- Visualized results to show relationship between study hours and scores.

Spam Email Classifier

- Preprocessed text data by removing stopwords and performing tokenization.
- Converted text into numerical features using TF-IDF vectorization.

- Implemented a Naive Bayes classifier for accurate prediction.
- Evaluated model performance using accuracy and confusion matrix.

Car Blackbox System – PIC18F4580

- Developed automotive event logging firmware.
- Implemented ring-buffer based non-volatile data storage.
- Designed UART-based diagnostic interface.

MP3 Tag Reader & Editor

- Developed tool to parse and modify ID3v2 metadata.
- Supported editing of title, artist, album, and year fields.

EDUCATION

Bachelor of Technology (B.Tech) – Electronics and Communication Engineering

Mar Athanasius College of Engineering, Kothamangalam, Kerala

2020 – 2024

CERTIFICATIONS

NSQF Level 5 Certified Embedded Software Engineer (ELE/Q1501)

Issued by Electronics Sector Skills Council of India (ESSCI)