

Alwin Rebellow

Embedded Software Engineer

✉ alwinrebellow@gmail.com ☎ +91 9995035370 📍 Kothamangalam, India 📅 28 Feb 1997 🧑 Male

🌐 <https://www.linkedin.com/in/alwin-rebellow-4a2a1812b/>

📁 WORK EXPERIENCE

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|---|---|
| Embedded Engineer II, SW, Harman International India Pvt Ltd | Aug 2021 – present
Bangalore, India |
| <ul style="list-style-type: none">• Worked in Exynos-based Head Unit development, contributing to the Audio/Video Bridging (AVB) stack for uninterrupted data transmission. This included development of AVB components within DSP core running in an RTOS environment to ensure low-latency and real-time performance.• Worked on implementing the gPTP stack for accurate time synchronization in automotive applications.• Engaged in Android networking activities including debugging network validation failures, configuring VLAN interfaces, and enhancing PANS (Private Access Network Service) features to support OEM and customer requirements.• Collaborated cross-functionally with teams from various domains to ensure timely and successful project delivery.• Worked extensively in both Linux and Android environments for development and debugging purposes. | |
| Associate Software Engineer, Smart Inforce Computing India Private Limited | Feb 2020 – Aug 2021
Bangalore, India |
| <ul style="list-style-type: none">• Worked in Qualcomm Snapdragon 845 chip based SOM. Work as a team with hardware and mechanical developers to develop products.• Basic requirement study and architectural design for developing product from scratch.• Worked in Linux and Android environments | |

🎓 EDUCATION

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|---|---|
| PG diploma in Embedded Systems Design, C-DAC: Centre for Development of Advanced Computing PG Diploma In Embedded Systems and Design
71.13% | Aug 2019 – Feb 2020
Bangalore, India |
| Bachelor's in Electronics and Communication Engineering,
<i>Viswajyothi College of Engineering and Technology</i>
6.86 cpga | Jun 2015 – Jun 2019
Vazhakulam, India |
| Higher Secondary School, St Joseph's HSS
89.3% | Jun 2013 – Mar 2015
Paingottoor, India |

📁 PROJECTS

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|---|---------|
| Android Networking, Harman International India Pvt Ltd | present |
| Worked on Android networking features for head unit bring-up, including configuration of VLAN interfaces and analysis of related KPIs. Implemented the PANS (Private Access Network Service) to support OEM-paid and private customer application requirements. | |
| BMW IDCevo, Harman International India Pvt Ltd | |
| Project aimed to develop a head unit for cars that supported audio and video, utilizing the Exynos chip. Our team's main focus was on implementing the gPTP and video components on the system side, while also utilizing the RTP protocol for audio on the DSP side. | |
| <ul style="list-style-type: none">• Responsibility: Conducting requirement studies, creating architectural designs, developing firmware, troubleshooting technical issues, and producing comprehensive software documentation. | |

- Programming Language: C, C++
- Technology: Automotive Ethernet, gPTP, AVB

Audi HCP3, Harman International India Pvt Ltd

The project involved developing a head unit for cars that supported audio and video functionality, utilizing the Exynos chip. Our team focused on implementing the gPTP component on the system side, while also incorporating the use of the RTP protocol for audio on the DSP side.

- Responsibility: Requirement study, Architectural design, firmware development, Trouble shooting and software documentation.
- Programming language: C, C++
- Technology: Automotive Ethernet, gPTP, AVB

Active Rollover Protection in Vehicles,

PG diploma in Embedded Systems Design from C-DAC:DESD

This project is about a protection system in vehicles which prevents the vehicles from rolling over while cornering a curve or changing line at high speeds. The system uses differential breaking and correction in steering angle according to the situation as counter measures to prevent the vehicle from rolling over.

- Platform: STM32F103C8, FreeRTOS
- Programming language: Embedded C

Wireless Spy Robot, Bachelors Main Project

Dec 2018 – Jun 2019

Objective for developing this spy robot is to eliminate the risk of losing lives and also provides the knowledge about strength of enemies. This robot will be a great help to military to provide best information about the conditions of the territory in many operations such as surgical strikes.

- Platform: ATmega 328p microcontroller, OPENCV.
- Programming language: Embedded C, Python

Sun detecting Solar Panel, Bachelors Mini Project

Dec 2017 – Jun 2018

The project is an application that permits us to detect where the sun is and adjust the position of solar panel BENEFITS: Have maximum of sunlight incident on the solar panel.

- Platform: ATmega 328p microcontroller
- Programming Language: Embedded C

OTHER ENGAGEMENTS

Presented Project Paper "Wireless Spy Robot, National Conference VLES

Mar 2019

Industrial Visit at All India Radio Air Akashvani

Sep 2018
Madikeri, Coorg, India

Industrial Visit at Keltron Lighting division at Calicut and Traco Cable, Thiruvalla

Aug 2017
India

Internship training program, Doordarshan Support Centre

Jun 2016
Kakkanad, India

HOBBY PROJECTS

RFID based gate Automation

- The project was based on RFID technology and involved the use of RFID tags and receivers to automate gate opening and closing for vehicles.
- The gate opening and closing process was facilitated by the use of motors, which were activated when a vehicle with an attached RFID tag approached the RFID receiver.
- The project required the development of custom firmware to enable communication between the RFID reader and the gate motor.
- The RFID reader was capable of identifying the unique ID associated with each RFID tag and triggering the corresponding motor to open the gate for authorized vehicles.

IoT based Home Automation

- The project utilized Home Assistant and Node MCU microcontroller to automate the process of watering plants in the garden, as well as turning on the water pump when the tank was filled to a certain level using an ultrasonic sensor.
- The mobile app integration provided the user with remote control to turn off/on lights and fans, making the project more convenient and efficient.
- By automating mundane tasks like watering the garden, the project allowed the user to save time and energy, and focus on more important tasks.
- The project provided the hobbyist with an opportunity to develop valuable skills in programming, electronics, and system integration, which could be useful in future projects or professional capacity.

SKILLS

C language Programming	● ● ● ● ●	C++ languageProgramming	● ● ● ● ●
Python Language Programming	● ● ● ● ●	Basic Electronics Knowledge	● ● ● ● ●
UART UART used for exchanging serial data between two devices	● ● ● ● ●	I2C I2C is used for exchanging serial data between two devices	● ● ● ● ●
SPI Serial Peripheral Interface (SPI) is used for exchanging serial data between two devices	● ● ● ● ●	Microcontrollers ARM based microcontrollers and microprocessors.	● ● ● ● ●
PWM Pulse width modulation	● ● ● ● ●	Real Time Operating system(RTOS)	● ● ● ● ●
Embedded systems Design	● ● ● ● ●	Embedded C Programming	● ● ● ● ●
Linux	● ● ● ● ●		

AWARDS

2nd in Project Exhibition,Tech fest Bhodhi, <i>Viswajyothi College of Engineering and Technology, Vazhakulam, India</i>	2019
1st in Hobby Circuits Competition,Tech fest Bhodhi, <i>Viswajyothi College of Engineering and Technology, Vazhakulam, India</i>	2017
2nd in Roborace competition,Tech fest Bhodhi, <i>Viswajyothi College of Engineering and Technology, Vazhakulam. India</i>	2017

LANGUAGES

English IELTS: 7.5	Malayalam
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