**HARISH M B**

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**Objective:**

Motivated and eager firmware engineer with hands-on experience in embedded systems and microcontroller programming. Skilled in C/C++, debugging, and learning new technologies quickly. Passionate about solving technical challenges and contributing to the development of reliable firmware solutions. Looking to expand my skills and grow professionally in a dynamic team environment while supporting the creation of innovative embedded products.

**Work Experience**

SpanIdea Systems Private Limited, Bengaluru, KarnatakaJun 2022 – Jan 2025

**Broadcom Ltd**, Bengaluru, Karnataka (client)

**Firmware Engineer**

Total Experience: 2.8 years

**Work Experience**:

**Language**: C, Linux Internals

**Protocol:** UART, BFD

**Development Tool:** Free RTOS

**Version control tool**: Git

**Build Environment**: Make file

**Board:** Cortex – M

**Development**:

1. Worked closely with the cross-functional team to develop and maintain software solutions for Embedded Development Kit (EDK) from this obtained fair understanding of IPC mechanism (message queue).
2. Helped in developing few functionalities of BFD (state machine, sessions bring up) over EDK.
3. Assisted in optimizing the CPU load as the BFD sessions increases in the same lane between two systems.
4. Resolved few device specific bugs, familiar with Broadcom chips: TD3, TD4X11, TH3, and TH4.
5. Developed code to randomize core selection by the feature. (Enhancement)

**Quality check**:

1. Few test cases pertaining to state machine were ported from SDK supported to EDK support.
2. Developed test cases for “loading BFD feature to the device”, “establishment of single session”, “state machine check”. Used shell scripting to automate regressions runs.
3. Have enabled ResetOnFail framework throughout the BFD code base. (Enhancement)
4. Helped in monitoring unittest, apitest regression runs over TD3, TH5 switches.
5. Able to compile firmware image for specific devices and BFD telemetry feature to analyze regression fails.

Lab related Work:

1. Able to bring up the beagle board with required features for “One sync feature regression monitoring”. Yocto (Open source collaboration project) is used.

**Hands on experience on developing automation projects (This work is out of scope from main work):**

**Language: Python, shell scripting. (**Adequate**)**

1. Rack Power Control Script:
2. Collecting rack info data from the local machine, listing racks that are powered on but not owned by any user, and powering down those racks.
3. This script reduces noise in the lab and unnecessary power consumption.
4. API Coverage Script:
5. Used Bash and Python to fetch all the APIs used and not used in features (BFD, Flowtracker, IFA etc.). This makes it easier to test functionality and adopt the unused APIs.
6. Bash is used to grep and list out used and unused APIs, storing that data in CSV format.
7. Python is used to create a directory, convert CSV to Excel format, and store it in the created directory.
8. This saves time for both developers and testers, eliminating the need to grep for each API every time.

**Technical Skill:**

|  |  |  |
| --- | --- | --- |
|  | Programming languages | C, C++, Embedded C |
|  | Protocol | UART, SPI, I2C |
|  | Linux Internals | IPC mechanism, Signal Management, Synchronization technique |
|  | Project management and issue tracking tool | Jira |
|  | Version control tool | Git |
|  | Boards | LPC2148, LPC2139 |

**Professional Training:**

Successfully accomplished Embedded system training from Jan – 2020 to jun – 2021.

Skill set obtained: C, Operating Systems, OSI model, TCL.

**Education Qualification:**

* 1. **Master of Technology** in **Digital Electronics and Communication Engineering** from NMAMIT, NITTE (2017-2019).
  2. **Bachelor of Engineering** in **Electronics and Communication Engineering** from PESITM, (2013-2017).

**Academic Project Details:**

**1. BE Project Topic:** “Real time health monitoring system using Arduino UNO”

**Tools :** C

**2. M. Tech Project Topic:** “Survivability Techniques Implementation by using Simulation Methods”

**Tools :** C++

**Declaration:**

I hereby declare that all the above information provided by me is true to the best of my knowledge, and I take full responsibility for the accuracy of the aforementioned information.

**Place: Bengaluru Harish M B**

**25-02-2025**

**Date:**