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OBJECTIVE

To obtain senior level position that will allow me to explore my technical skills, domain knowledge and experience to learn in making an organization success.

SUMMARY

Results-oriented Technical lead with 14+ years' experience in product development for various embedded domains like Analytical instrument, Industrial automation and instrumentation, Home appliance and Aeronautics.

Professional Experience:

Team Lead(2) – eInfochips(An Arrow Company), India – Jan-2019 to Till date Team size: 3

Project: Retract Monitor GUI for In-flight infotainment system : The Retract Monitor provides a Graphical User Interface which allows users to adjust the video setting parameter using remote control. This product is used in in-flight infotainment system.

Responsibility:

- Requirement understanding and baseline code understanding.
- Design,develop and enhance state diagram for on screen layout to showcase menu options over an active video.
- Project schedule estimation
- Coordination with cross functional team
- Client interface
- Configure and scaling video decoder as per user input

Team Lead(2) – eInfochips(An Arrow Company), USA – Oct 2015 to Dec-2018 Team size: 8

Project: DO178C compliant Multi-core Multi-OS Platform Software : This display system is going to be used in the cockpit and this is first aero industry product going for multi-core multi OS product certification. This product includes various software components like MOS-BSP for virtualization, LynxOS BSP, LynxOS device driver, Kernel modules, user level library and application to drive display system. This product adopted hypervisor-based approach which provides the ability to host multiple guest OSs (LynxOS running on core0, core1 and core2 and Vxworks POS running on core3) on single platform. Application deployed on guest operating system. This provides the ability to configure and initialize platform using a single configuration vector (CV).

Responsibility:

- Designed and developed client-server automated framework for multi-core environment. This framework consists of application, Utility library, Utility driver and stub driver at the target end. Implemented python based utility at host end.
- Designed & Developed suite for static drivers like Health monitor, Persistence storage etc.
- Designed and developed suite for library like health monitor library, SNMP library, CRC library and persistence storage library in automated framework.
- Mentored team in development of framework for common initialization (for Time, Space and kernel resource partition), Application launcher application
- Involved in Agile methodology like sprint planning, product backlog, and retrospective planning with cross functional team. Also involved in scoping activity of story and effort estimation.
- Implemented Configuration and Release Management practices for various projects with SVN, WIN-CVS etc.
- Involved in Project Planning, Requirement Understanding and Analysis, Estimation, Project and Product Architecture Design and Development, Reviews and testing by following quality management processes.
- Involved in support activity of SOI audits for certification.
- Understand MOS BSP functionality and Implemented lauterbach based framework for MOS BSP module.
- Development of default configuration for system initialization. This includes systems configuration, Virtual machine configuration, fault policy configuration and process configuration.

Team Lead – eInfochips(An Arrow Company), USA – Sep 2014 to Sep 2015 Team size: 10

Project: ARP4754A compliant 24 port AFDX-2120 Subsystem switch : This switch provides a Data load agent to support upload operation, find operation. The mode manager is handling different modes of the switch like Operation mode, Dataload mode, Quiet mode, Passive mode. This switch provides SNMP agent to allow external hosts to gather or set information about switch.

Responsibility:

- Created Host PC setup by installing AIM card for AFDX flow generation.
- Design and developed Verification cases to verify switch functionality
- Customized ASIC switch configuration to generate different scenario.
- Guided team for ARP4754A compliant subsystem validation approach.
- Involved into internal and external review of artifacts.
- Weekly and Monthly status report to client.

Sr. Embedded Eng. – eInfochips(An Arrow Company), USA, Ahmedabad, India – Feb 2013 to Sep 2014

Project: DO178B compliant Platform software: This flight display product has multi processor architecture and going to used in cockpit as multi function display.

Responsibility:

- Designed, Implemented Test-driver for ONFI NAND driver.
- Discussed various approach for NAND drive and finalize Proof of concept for Hook mechanism to verify lower level functionality.
- Developed Stub driver and Hook mechanism in NAND device driver.
- Designed and developed Application for SDA (Simple Display Application).
- Achieved 90% MCDC coverage using VectorCast tool, Coverage gap analysis and establish a mechanism to cover gaps.
- Involved in PREP reviews of artifacts.

Sr. Embedded Eng. - Tech Mahindra – Hyderabad, India – Apr 2010 to Feb 2013

Project: SW development and Bug fix of 2012 Bottom Freezer program for Refrigeration

This project deals with distributed architecture, with Main Board as the heart of Refrigeration. Main board having 32 bit Renessas controller (R32C) controls all the refrigeration functionalities.This functionality implemented on Quantum framework architecture. Door boards having 8-bit Renessas controller (R8C) supports dispense features like precise fill, Hot Water, Door alarm.. This has dispenser of cubes, crushed Ice and water. The Deli pan board specific to compartment for meat etc. This board has temperature setting cabinet. All boards are communicated with each other using GEA2 serial protocol. Project aims to support Refrigeration deliverables through single code set (mean all single evap single speed, Dual evap variable speed, single evap variable speed) on multiple platforms and models.

Responsibility:

- Responsible for software requirement analysis, design and implementation as per fruit growth model.
- Involved in software design review, implementation.
- Creation of Test plan for robustness unit testing.
- Involved in proof of concept for RFID.
- Helped team for creation of state diagram for Refrigeration.
- Involved in integration testing.
    - Developed low-level driver code for controller's peripherals.
    - Designed and developed state diagram of Platform Independent Icemaker Application.
    - Developed Refrigeration Grid-Analysis through VCTesting Tool.
    - Implemented DSM (Demand Signal Management) functionality in Main board for grid management.
    - Ported Subscription code on GEA single wire to provide auto information to nucleus/subscriber.
    - Implemented Gated Sensor Logic to optimize the power
    - Implemented Advance Service Diagnostic to reduce service call rate
    - Implemented Low level driver to operate Duct door motor using PWM
    - Ported of Microelectronics checks to check RAM,ROM and stack for UL compliant.
    - Routing implementation to flash the board connected on internal bus.

Sr. R & D Eng. – Massibus Automation and Instrumentation Pvt Ltd, Gandhinagar, India – Apr 2007 to Feb 2010

Product - 8-Channel MODBUS I/O module – New Product development

Description: This product is a low-cost 8-Channel Modbus based remote IO unit in DIN rail mounting, which provides an easy way for integrating analog signals to supervisory SCADA/PLC/DCS systems. This product sense the universal input like 4-20mA, 0-10V, RTD (PT100), Thermocouple (J,K,T,R,S) with full scale accuracy of +/-1 degree/digit. This product also provides channel to channel galvanic isolation and communication ports isolation.

Responsibility:

- Designed Signal conditioning circuit for all types of Thermocouple, Thermistor and RTD sensor.
- Developed the moving average algorithm to measure temperature.
- Involved in Vendor selection, Enclosure selection and controller selection
- Involved in Component placement/ layout diagram for proper channel to channel isolation, channel to supply isolation.
- Implemented code for 2-point calibration technique.
- Implemented Modbus RTU protocol to read/configure all channel.
- Interface 16 bit CS5532 ADC to read sensor input.
- Enhance the product by providing the GSM support as add on feature to send the module information to configured mobile number.

R & D Eng. – Systronics ASE enterprise, Gujarat, India – Apr 2005 to Feb 2007

Product- 1. Clinical Analyzer [Product enhancement]

Description: This product measures enzyme levels (such as many of the liver function tests), ion levels (E.g. sodium and potassium) and other tell-tale chemicals (such as glucose, serum albumin, or Creatinine).This product carried out liver and kidney functionality. This product used to conduct SGPT test, Creatinine test and serum Glucose test. All the mode's result (like kinetic, coagulation) is in either graphical format or tabulation format in graphical LCD.

Responsibility:

- Designed and developed the user interface code for 320 x 240 Graphical LCD.
- Implemented I2C interface to print the data on thermal printer,
- Interface stepper motor to set filter position for appropriate wavelength.
- Preparation of Test cases plan and generate scenarios.

Product - 2. Conductivity Meter and Conductivity - TDS meter - New Product Development

Description: This product is in the category of analytical instruments. It measures conductivity of liquids along with specific conductivity using temperature probe or manual temperature setting. It measures the conductivity of solution range between 0.1us to 100ms with temperature compensation.

Responsibility

- Designed and developed the signal conditioning circuit to read the input signal from the conductivity cell.
- Involved in component selection and component layout.

Tools & Technology Expertise:

Tools	DOORS, PREP, Clear-Quest, PCLint (static analysis), Imagix (code complexity measurement), Parasoft, CSDiff, VCTesting (VC++ environment), Call walker (Stack analyzer), wireshark (network traffic), Putty, teraterm, pycharm , VectorCast (coverage analysis), Agile methodology
Languages	Python, C, Assembly
Operating Systems	LYNXOS 178, QF platform [non-preemptive scheduler], Core OS, RTE, FreeRTOS
Scripting Languages	Python, Shell Script, Lauterbach script

Communication protocol	I2C, SPI, RS-232, Modbus, GEA2 (Single-wire multi-master proprietary base protocol) Socket programming in C & python
Application layer protocol	SNMP, TFTP
Configuration Management Tools	SVN, WIN-CVS
Process compliance	DO178B, DO 178C, ARP4754 AS9100C
Hardware platforms	Texas: MSP430F (16 bit) Renesas: M16C Series (16 bit), R8c/35A, R32C/111(32-bit), RL-78 PowerPC: T2080(QtoQ), PPC460EX Atmel : 89c51,89c55wd,Atmega128 Analog : ADUC848 FPGA NIOS-2 platform
Development Tool	KEIL, Code Composer studio (MSP430F), High performance Embedded Workshop [HEW], IAR Embedded workbench, wind river LynxOS Cross-Development Kit (CDK) for Linux AVR studio OrCAD 10.0 and Protel (Circuit simulation and PCB designing)

Education:

Sardar Patel University 2003 Bachelor of Electronics and communication Engg.Gujarat, India.

VISA status:

H1B, L1B and B1

RECENT ACCOLADES:

Certificate of Excellence from **GE** in March-2011:

- For Significant role in providing platform independent Ice Maker designs for Refrigeration Mission 1 program.
- BRAVO award for subscription code implementation.

Core Value Award from eInfochips in May-2014 and Apr-2015:

- For discipline execution of NAND module.
- For coordination among **Rockwell Collins** Functional team.