

Sandeep Singh R

ASSISTANT MANAGER

Ph: 7406050506/7975062764
e-mail: sandeepec035@gmail.com

Career objective:

Decisive, strategic & innovative Technocrat targeting challenging assignments in **leading Embedded Systems Development and managing team** that enable the use of leadership, functional & technical skills to positively contribute to growth of the organization

Qualification

M.Tech | SJCIT, VTU | Major: Signal Processing. (Course Completed)
B.E | SSEC, VTU | Major: Electronics & Communication.

Technical skills & expertise

Programming language	Embedded C, MATLAB, Python.
Operating systems	Microsoft Windows, Linux (Basics)
Processors (MCU's)	PIC & 8051 family MCU, TI Boards, Arduino, STM32
IDE's & Compilers	Kiel , MPLAB, IAR, Arduino IDE, Xilinx(Basic).
Communication Protocols	RS232, I2C, SPI, RS485.
Interfacing modules	IO Handling, Timers/Counters, PWM, ADC, DAC, EEPROM, Flash, RTC, Relay, Motors, RF434, Zigbee and Wi-Fi etc.
PCB Designing tools	Kicad, Altium (Schematic Design).
Other Tools	GIT, JIRA, Bitbucket.

Professional experience:

Assistant Manager RND	MPA Pvt. Ltd	May 2022 to July 2023
Senior Embedded Design Engineer	STPL	March 2021 to May 2022
Senior Software Developer	Nexsemi Systems Pvt Ltd	Oct 2018 to Nov 2019
• Validation Engineer	Client: Microchip Pvt Ltd	Mar 2019 to Sep 2019
• MATLAB Developer	Client: Microchip Pvt Ltd	Oct 2018 to Mar 2019
Embedded Design Engineer	Monee and company Pvt Ltd	Nov 2016 to Nov 2017
Research Associate	PESIT	Oct 2012 to Aug 2014
Design Engineer – Embedded	Apsis Solutions	June 2011 to Oct 2012

**Significant
Project Profile
& Individual
Role:**

- **Spectrometer Design and Development**

Hardware : STM32 Family Microcontroller, ADCs, CCD, SST25v080B flash
Software: STMCUBE, IAR Workbench, VSS

**Roles and
Responsibilities**

- Providing leadership in requirement gathering from Sales Team & other stakeholders, documenting (functional specifications, technical designs), coding and testing along with a team of members
- Understanding development practices in order to make informed decisions, lead the team and provide various ideas
- Controlling all phases inclusive of scoping, development, integration, deployment, testing, maintenance and production
- Participating in leadership discussions and ensuring that the projects are on track and attuned with key objectives
- Implementing methodology involving developing comprehensive test plans, tracking activities and assuring overall quality including functionality, performance & scalability
- Developing specific test cases and performing unit and integration software testing along with required documentation
- Engaged with other teams for enhancing the product; ensured proper resource allocation and smooth execution of projects
- Working as release coordinator and leading release planning, scheduling, testing, deployment management and release support
- Prioritizing & procuring hardware/software resources, and enhancing productivity & resource utilization for existing resources
- Monitoring team's performance and implementing strategies for building team effectiveness by promoting a spirit of cooperation
- Identifying training needs of employees and mentoring them on skills through sustained practice & instruction
- Promoting & building a culture of free communication, trust and innovation

- **Project name: AFCS: Automatic flight control system**

Hardware: ATMEL and PIC MCUs.
Software's: IAR Workbench, MPLABX,

**Roles and
Responsibilities**

- Firmware Development of the unit.
- Design and Testing of the Rig.
- Researched new technologies and assessed feasibility for inclusion in new concepts.
- Used CAD software to create models and simulations for use by manufacturing team.
- Dealt with complex customer specifications by actively listening to goals and creatively resolving points of concern.
- Packaged engineering designs, selections and specifications of auxiliary systems and components.
- Confirmed engineering team complied with internal processes and procedures and external governing requirements.
- Made sure that Health and Safety practices were followed both in daily work and incorporated with product design.
- Selected manufacturing methods, fabrication and product designs with care for internal cost controls and government standards.
- Prepared outlines and detailed design drawings and associated construction-ready documentation for client approval before project launches.

- Contributed positively to business achievement plan and overall success of design team through consistent attendance.
- Designed and Developed exclusive products as well as mechanisms and sub-assemblies.

- **Project name: MPLAB Harmony peripheral library Validation**

Hardware: ATMEL and PIC MCUs.

Software's: IAR Workbench, MPLABX, Jython

- Understanding and preparing Software Design Documents like Test Plan and Test Case for the given Modules under Validation.
- Validate respective register set's content assigned by PLIB using MPLAB X Simulator
- Identify various test scenarios keeping end use in mind for each APIs and features
- Prepare Software Design Documents like list out all the features, test scenario and test cases along with method of Testing, pre-requisites and hardware setup information.
- Develop and test validation code as per description provided in prepared document keeping in mind that developed code can run and log results using automated validation framework.
- Performing Software Simulation and Hardware harness testing.
- Generating Reports using scripts and updating in Jira and Git.
- Raising Bug/ Issues under Jira if any failures occur during testing.

- **Project name The Power Smart Development Suite**

Hardware & Software: Omicron Bode Analyzer, MATLAB

- Understanding the design needs for the GUI development.
- Integrating the calculation and populating the values in GUI as per requirement.
- Testing the GUI under various conditions.
- Generation of Reports and Discussion with the team for further development changes.
- Developed new, efficient, and well-tested code for a variety of different software projects.
- Provided weekly detailed project reports to keep manager informed on milestones and updates.

- **Project name: Home Automation over IOT Falcon Controller with Kite switch, IR BLASTER and Smart Plug**

Hardware & Software: PIC24 & 32 MCU, MPLAB, Ambient sensor, LED drivers, Triac, Miwi, Ethernet, EEPROM, Flash memory

- Team member in driver development for various peripherals of MCU platforms.
- Testing and debugging.
- Hardware designing and board bringing up.
- Verifying the board bring-up with various test cases.

Roles and Responsibilities

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- Project name:** Channel Sounding Experiments to Study Doubly-spread underwater acoustic Channels in Shallow waters
Hardware & Software: NI DAQ tools, MATLAB.
 - Responsible for development of hardware electronics based on the requirement.
 - Interfacing data acquisition devices such as NI-DAQ, working with Microcontrollers.
 - One of the team players for maintaining underwater tank facility, performing acoustic experiments, and analyzing with MATLAB, reliability testing of the system developed for performance verification.
 - Designed presentations summarizing research findings.
 - Coordinated research projects to achieve overall team efficiency.
 - Collected large volumes of data with high accuracy.
 - Demonstrated outstanding project management abilities, running innovative research programmes within cost and timeframe parameters.
 - Maintained inventory, equipment and materials in an organized fashion.
 - Built and nurtured positive, professional relationships with key industry and academic partners, broadening opportunities for multidisciplinary research.
 - Carried out focused statistical analysis, maximizing data understanding and uses across varied research platforms.
 - Collaborated effectively with students and lecturers to develop high-performing research programmes, garnering external interest from industry and academia.
 - Outlined key research in documents, spreadsheets and reports.
 - Created engaging, insightful journal articles, building faculty reputation for cutting-edge methodological research.
- Project name:** Rotating data acquisition system of strain gauges for obstacle hit Experiment in planes.
Hardware :PIC32MX460/795F512L Microcontroller, ADC, MCP6N11, SST25v080B flash, RF Module, Strain gauge.
Software: MPLABX, MATLAB
 - Reliability testing of the system developed for performance verification.
 - Application and GUI development using MATLAB/SIMULINK for several projects.
 - Testing of boards based on the application code provided.
 - Sketched outline designs and used CAD programs to provide detailed design and specifications.
 - Used CAD software to create models and simulations for use by manufacturing team.
 - Made sure that Health and Safety practices were followed both in daily work and incorporated with product design.
 - Confirmed engineering team complied with internal processes and procedures and external governing requirements.
 - Packaged engineering designs, selections and specifications of auxiliary systems and components.
 - Designed and Developed exclusive products as well as mechanisms and sub-assemblies.

Extracurricular activities and hobbies

- Completed '**B**' **Certificate** in NCC **Army wing** in KARNATAKA & GOA Directorate.
- Attended several Technical Events like EXPOS, Workshops organised by several companies, Bangalore on behalf of the company.
- Interests in adventure activities like Rock Climbing, Rappelling and Trekking etc.
- Worked as Freelancer trainer- Training Engineering students to build their final year Projects

Academic Projects:

1. Wireless Automation for existing No Due Certificates.
2. Microcontroller based Wireless call-button system for industrial workstation
3. Smart Communication system for Dumb & Deaf People using Kinect Sensor

Projects as Freelancer:

1. A Spider Type Crawling Robot for Survey in Hazardous Environment.
2. Automated Robot for Flyer Distribution & Awareness Promoters.
3. Home Automation over IOT using Node-MCU, ESP8266.
4. Smart Energy Metering over IOT using ESP8266.
5. Solar Tile Tracking system based on Azimuth and Elevation Angle.
6. Robotic Arm- Haptic control using Kinect.
7. Tracking and Avoidance of Cargo Pilferage using IoT.

Achievements

- Won Prize for **BEST DESIGN** in **Embedded Design Contest** organised by **EFY**
- Paper Publications **National Conferences**: 5, **International Journals** : 2
- MATLAB Basic course in Udemy (Freelance Instructor).
- Resource Person for Workshops and FDPs

Certification

- Certified in '**Embedded Systems and Peripherals**' from **Microchip India Pvt. Ltd.**, through Technosphere, Bengaluru.
- Completed **Industrial internship** under **Anubhavi Automation** for 6 months.
- Completed Online Courses on Coursera.

Personal Details

Father Name: Late. Ravindranath. C
DOB : 4th April 1986
Passport : K2691395
PAN : DNLPS6372G

DECLARATION:

I do hereby confirm that the information given above is true to the best of my knowledge.

Date :

Place : Mumbai

Sandeep Singh. R