

Curriculum Vitae



DINESH KAMMARI

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Professional Synopsis:

A performance-driven professional, highly efficient and innovative, with 3 years & 1 Month of experience in embedded firmware development, board bring-up, driver integration, debugging, and real-time system design. Currently associated with iLenSys Technologies Pvt Ltd, Hyderabad, as a Firmware Developer. Proficient in developing and optimizing firmware for microcontrollers and embedded platforms, performing system-level validation and debugging, and working closely with hardware team.

Experience Summary:

- ❖ Nearly 3 years of experience in Embedded Firmware Development and Testing.
- ❖ Hands-on experience in board bring-up and driver development for microcontrollers such as STM32 (F4xx/ G0xx/H7xx), PIC24F, AT89C51, ATMEGA32A and Arduino.
- ❖ Strong understanding of serial communication protocols including UART, SPI, and I2C.
- ❖ Practical experience in configuring and working with ADC, PWM modules, and GPIOs for sensor interfacing, motor control, and signal acquisition.
- ❖ Knowledge on 1-Wire, CAN & LIN Protocols.
- ❖ Strong conceptual knowledge of bare metal Programming, including low-level drivers.
- ❖ Strong conceptual understanding of custom bootloader implementation.
- ❖ Practical experience in RTOS-based development, including task scheduling, Synchronization mechanisms, and inter-task communication.
- ❖ Skilled in using Git /GitHub for version control and Cube Monitor for real-time software debugging.
- ❖ Experience in using hardware debugging tools like multimeter, oscilloscope, and logic analyzer.
- ❖ Currently working as a Firmware Engineer at iLenSys Technologies Pvt. Ltd., Hyderabad (Oct 2022 – Present).

Technical Skills:

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|----------------------------------|--|
| ❖ Language | : C, Embedded C, C++ |
| ❖ Microcontrollers | : STM32F4xx/ G0xx/H7xx (32bit), AT89C51(8bit), ATMEGA32A (8bit), PIC24F (16Bit). |
| ❖ IDE | : STM32CubeMX, STM32cubeIDE, Atmel Studio, MPLABXIDE, Keil µVisionIDE. |
| ❖ Communication Protocols | : UART, I2C, SPI, RS232, RS485, RFID, GSM, GPS. |
| ❖ Peripheral Interface | : ADC, PWM, GPIO's. |

Experience with Testing Tools:

- ❖ 4-Ch Oscilloscope (2GS/s), Logic Analyzer (8-Ch), Data Logger (200Ch), Tachometer (16Hz to 20kHz), Acoustic meter, 6 –Digit Multi Meter.
- ❖ TeraTerm, Real Term, YAT, Segger System View, Logic Analyzer, Cube Monitor.

Professional Experience (My Involvement & Summery):

- ❖ In Total I was involved in 3 different projects. Each project was developed for different requirements and multiple applications as per customer requirements. All are MCU-based projects
- **Position:** Junior Firmware Engineer (2022 to 2025).

Project 1: Hot Plate Magnetic Stirrer

Engineered a microcontroller-based laboratory Hot Plate Magnetic Stirrer capable of achieving 500 °C and 1500 RPM, featuring dual PID control loops for heater and motor. The system includes a rotary encoder-based UI with non-volatile profile storage in internal flash, allowing users to recall and resume previous settings seamlessly.

→ Responsibilities:

- Configured and validated rotary encoder interfaces using GPIO external interrupts for high-resolution speed and temperature adjustment
- Developed firmware drivers for LED indicators, Triac heater control, and PWM-based motor speed regulation.
- Implemented closed-loop PID control algorithms for accurate temperature stabilization and motor RPM regulation.
- Integrated PT1000 and Thermocouple sensors through a 24-bit precision ADC (ADS1248 via SPI interface) to achieve high-resolution temperature sensing.
- Programmed timer-based interrupts for precise duration control with increment/decrement push-button input handling.
- Designed and optimized Triac triggering logic synchronized with the AC mains for reliable heater power modulation.
- Developed modular user interface (UI) with real-time display of actual/set parameters (Temperature, Speed, Timer).

Project 2: Nova Sync

This project aims to interface multiple sensors and devices for a demo system, enabling real time data acquisition and control. It integrates various sensors and actuators to monitor environmental conditions and control devices like motor and heater

→ Responsibilities:

- Implemented temperature sensing using MAX31865 with PT100.
- Managed FS1012 flow sensor for liquid flow measurement.
- Controlled DC motor speed using PWM with a MOSFET driver.
- Integrated SEN0232 noise sensor for noise level detection.
- Developed heating control logic for temperature regulation.
- Controlled Peltier module for temperature management in cooling/heating applications.

Project 3: Modular Electronics

In this project, we developed a modular electronics system that seamlessly integrated an STM32 microcontroller with various external hardware modules, including displays, motors, sensors, and communication interfaces. This modular framework supports plug-and-play connectivity, enabling easy expansion and customization for diverse applications.

→ Responsibilities:

- Using STM32 Cube IDE, Interfaced external ADC, PWM modules, and discrete I/O for motor control with STM32, ensuring accurate Signal processing.
- Integrated digital and analog sensor modules using I2C and SPI protocols, and verified the setup on a custom STM32 board.
- Configured GPIO pins for interfacing with various modules (Display, Motor, Sensor, ADCs) and validated.

Education Details

Course	Institution	Specialization	% (or) CGPA	Year of Pass
B-Tech	GPCET, Kurnool	ECE	7.72 CGPA	2021
Intermediate	Sri Chaitanya JR College, Kurnool	MPC	94%	2017
SSC	Sri Chaitanya School, Kurnool	NA	9.0 GPA	2015

PERSONAL DETAILS

Name : Dinesh Kammari
Parent's Name : K Naga Brahmaiah & K Saraswathi
Date of Birth : 20th Nov 1999.
Marital Status : Unmarried
Nationality : Indian.
Languages Known : English, Telugu
Passport : W1087138
Permanent Address : H-No: 87/1368-M-H-2, Manikanta Homes, Joharapuram Road,
Kurnool, Andhra Pradesh, 518002.

ACHIEVEMENTS

- Achieved best employee award for completing the proto type of Hot Plate Magnetic Stirrer

DECLARATION

I hereby declare that all the above-furnished information is true to the best of my knowledge.

Dinesh Kammari
(Signature)

Date:

Place:

Hyderabad