



# DEVILAL GUGULOTH

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GUGULOTH DEVILAL

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## PROFILE

I Am a Senior Firmware Engineer With 6 Years Of Experience, Including 2.7 Years Dedicated To The Electric Vehicle (Ev) Automotive Industry. My Expertise Lies In Designing, Developing, And Testing Real-Time Embedded Applications, Specifically Focusing On Ev Control Systems. I Have Proficiency In Hardware And Embedded Design, Incorporating Microprocessor And Microcontroller Interfacing To Meet Client Requirements.

## EXPERTISE

- Languages : C, C++, Embedded C, Python
- Firmware : TMS320F28379D/F28335/F28069/F280025, PIC33FJ64GS606, PIC16F877ACORTEX-M4, MSP430XX, LPC2148, Atmega88, Allwinner h3, Raspberry Pi 3
- Tools : CCS 11/10/9/8/7, KEIL 4/5, Atollic, STMCubeIDE/MX, MPLAB, QT Creator, ARDUINO, Proteus
- Protocols : ISO26262, UART, I2C, SPI, CAN, MQTT, TCP/IP,
- Interfacing devices : PWM, ADC, GPS, GSM, EEPROM, RTC, IGBT, KEYPAD, DC motor, Relay, LCD IR, GSM, GPS, Wi-Fi, Bluetooth
- Operating Systems : Linux, Windows

## EXPERIENCE

|                     |                                      |                               |
|---------------------|--------------------------------------|-------------------------------|
| Jul 2021 – Mar 2024 | Engineer                             | HBL Power Systems             |
| Sep 2020 – Jul 2021 | Senior Firmware Developer            | Bynark Engineering Pvt Ltd    |
| Sep 2019 – Jan 2020 | Senior Engineer- Firmware            | iLenSys Technologies Pvt Ltd  |
| Jan 2017 – Sep 2019 | Software Engineer (Embedded Systems) | Unipoint IT Solutions Pvt Ltd |

## EDUCATION

|      |   |  |
|------|---|--|
| 2017 | <b>Masters of Technology</b><br>(VLSI and Embedded Systems)                   | Jawaharlal Nehru Technological University, India |
| 2014 | <b>Bachelors of Technology</b><br>(Electronics and Communication Engineering) | Jawaharlal Nehru Technological University, India |

## KEY PROJECTS

### Project # 1

|               |  |
|---------------|--|
| Project Title | : 4kW DC-DC Converter                  |
| Client        | : HBL Power Systems                    |
| Environment   | : TMS320F28069S, ADC, CAN, QT Creator. |

The 4kw DC/DC converter is a high-performance device that can handle input voltages ranging from 450V to 750V and output a steady 24V at a current rating of 170A. In order to maximize effective power conversion, voltage regulation, and thermal management, this device is crucial.

### Responsibilities:

- Taken responsibilities for building and deploying the Application.
- Utilized Qt Creator as the primary development platform, harnessing its features for efficient application development.
- Designing, developing, coding, testing and debugging system software.

### Project #2

|               |   |
|---------------|---|
| Project Title | : Battery Management Control System(BMCS)                 |
| Client        | : HBL Power Systems Pvt Ltd                               |
| Environment   | : TMS320F28379D, Code Composer Studio (CCS),ADC,CAN,RS232 |

The battery management system monitor cell voltage, temperature and battery current and then send them to the vehicle control unit. It would have the inbuilt provision of cell balancing during charge mode. It would also communicate with the charger. It would send the parameters and alarms data to the vehicle controller at a regular time interval or event-based.

#### Responsibilities:

- Involved in requirements analysis, designing, and coding of the application.
- Involved in application development and testing.

#### Project # 3

Project Title : Control of switched reluctance motor drive for electric vehicles (SRM)  
Client : HBL Power Systems  
Environment : TMS320F28379D, SRM Motor3/6 Phase, Code composer Studio(CCS), AU6805, IGBT

This project mainly focused on the development of Switched reluctance motor (SRM) for Electric Vehicle applications. Control (Speed and Torque) of Traction motors for EV application. In this project we are using a DSP controller to control the SRM motor, to control the SRM motor we are using AU6095 driver and power IGBT, 3 & 6 phase gate driver is used for driving six-pack IGBT power devices.

#### Responsibilities:

- Understanding base documents and schematics.
- Preparing Design Document.
- Writing code for the MSP430 Microcontroller as per the application requirements.
- Functional Testing as per ATP.

#### Project #4

Project Title : S1 Pipet Filler  
Client : ThermoFisher Scientific (Germany)  
Environment : Code Composer Studio (CCS), 1-wire communication, MSP430F413, Lithium-ion battery, LCD, Motor

The aim of this project is to design a light weight cordless pipet filler which allows longer and fatigue free pipetting. The pipetting speed will be controlled based on motor speed and PWM. The LCD will be interfaced for showing the status of the battery.

#### Responsibilities:

- Understand client requirements and prepare use case documents.
- Involved in requirements analysis, designing, coding of the application.
- Taken responsibilities for building and deploying the application.

#### Project #5

Project Title : Centralized Control Monitoring System SMS Gateway  
Client : Energy Efficiency Services Limited, New Delhi  
Environment : H3 ARM Cortex A7 processor, Python, My SQL

Centralized Control Monitoring SMS Gateway System is IOT Gate Way System. It collects data from CCMS box through SMS. This system is designed for old 2G Systems due to the lack of 2G Network. This device receives live data from CCMS system through SMS and pushes it to Main Server. Each gateway supports up to 100 CCMS systems.

#### Responsibilities:

- Involved in requirements analysis, designing, coding of the application.
- Taken responsibilities for building and deploying the Application.
- Resolved number of Production issues and improved the performance of the application.

#### PERSONALSKILLS

Mothertongue(s) Telugu

Other language(s)

|         | UNDERSTANDING |         | SPEAKING           |                   | WRITING |
|---------|---------------|---------|--------------------|-------------------|---------|
|         | Listening     | Reading | Spoken interaction | Spoken production |         |
| English | B1            | B1      | B1                 | B1                | B1      |
| Hindi   | C1            | C1      | C1                 | C1                | C1      |
| German  | A1            | A1      | A1                 | A1                | A1      |