

**Pratik Prajapati**

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## EMBEDDED SOFTWARE ENGINEER

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### PROFILE SUMMARY:

- Overall, 3.5 years of experience with a good understanding of the embedded domain. Professional in embedded design, development, analysis, debugging, and testing skills.
- Currently associate as Senior Embedded Software Engineer with Digital Reach Pvt Ltd.

### EMPLOYMENT DETAILS:

- **Dec 2020 – Till Date** with Digital Reach Pvt Ltd.
- **Dec 2018 – Nov 2020** with Nostrum IT Services Pvt Ltd.

### SKILLSET:

- **Languages:** Strong knowledge of C, C++, Data Structure, Python (Basic), Embedded C
- **Domain Knowledge:** Linux Internal Programming, Socket Programming
- **Operating System:** Linux (Ubuntu), Windows
- **Processor/Controller:** 8051, NXP1050 & 1052DVL6A/DVL6B, STM32 based F411RC, F429I (Discovery), F429ZI(Nucleo)
- **Tools/Software:** Vim editor, IAR Workbench, MCUXpresso, STM32Cube IDE, STM32Cube Mx, Keil, GitHub, GDB, Spider, PyCharm
- **Protocol:** I2C, SPI, TCP/IP, UDP, MODBUS, UART

### KEY RESULT AREAS:

- Development of large and complex projects or multiple components of large projects involving more than one company's product/ services.
- Communicating with internal/external clients to determine specific requirements and expectations, managing client expectations as an indicator of quality.
- Following the project life cycle methodology like Agile and Waterfall; defined under the process framework; ensured that customer deadlines were met within project budgets.

### PROJECT DETAILS:

<b>Project Name</b>	<b>GSM based SMS alarm controller API / (6 Months)</b>	<b>[3 Members]</b>
<b>Technologies/ Tools</b>	STMCubeIDE, ST Link, Segger J-Link, GIT	
<b>Operating System</b>	Windows, Linux (Host OS)	
<b>Platform Used</b>	STM32F411RC, STM32F429I (Discovery)	
<b>Detailed Overview</b>	Create API for the Message system for remote monitoring and controlling the message notification. Sends an SMS to the Device to operate the various operations through the message system. Acknowledge I/O status on-demand from a registered mobile number and allows for configuration and restoration of a device to its original settings through manual reset as well as through SMS.	
<b>Roles &amp; Responsibility</b>	As a software developer, my responsibility is to implement Architecture components. Implementation of code and Functional test specification, Debugging and Testing.	
<b>Skill Set</b>	Embedded C, Data structure and Algorithms, I2C Protocol, C library, API integration, Windows Services, GIT	

<b>Project Name</b>	<b>Remote Energy Monitoring and Data Acquisition System/ (6 Months)</b> <span style="float: right;"><b>[4 Members]</b></span>
<b>Technologies/ Tools</b>	Eclipse IDE, SUNROM RS485 I430, GIT
<b>Operating System</b>	Embedded Linux, Windows (Host OS)
<b>Platform Used</b>	Secure Meter Elite 440
<b>Detailed Overview</b>	Read the Multiple Multi-function energy meters over RS485 Modbus and store data on IOT device and upload to server.
<b>Roles &amp; Responsibility</b>	As a software developer my responsibility is the Implementation of code, the Integration of modules for the Main Control Board, and Store Data in the device in case of lost connectivity, Unit testing, Debugging and Testing.
<b>Skill Set</b>	Linux Internal Programming, Embedded C, C Functions, SPI Protocol, MODBUS Frame Structure, Read Energy Meter, Windows Services, Git

<b>Product</b>	<b>Modbus to IEC-104 Converter/ (3 Months)</b> <span style="float: right;"><b>[4 Members]</b></span>
<b>Technologies/ Tools</b>	C, Eclipse Neon, GIT
<b>Operating System</b>	Embedded Linux
<b>Platform Used</b>	IEC-104
<b>Detailed Overview</b>	Convert MODBUS protocol data into IEC-104 Protocol Web-based configuration.
<b>Roles &amp; Responsibility</b>	Functional testing and Unit Testing.
<b>Skill Set</b>	C Language, Linux system Programming, Modbus Protocol, Modbus Frame, Meter configuration

<b>Project Name</b>	<b>Achieve Multiple Client Handling / (1 Year)</b> <span style="float: right;"><b>[6 Members]</b></span>
<b>Technologies/ Tools</b>	Router, Wireshark, GIT
<b>Operating System</b>	Linux
<b>Detailed Overview</b>	The product has 3 wireless cards, 2.4 GHz, 5 GHz, and 60 GHz. To make them handle the traffic and client concurrently, updated the packet flow path to the driver module, where packets are segregated based on destination mac address and pushed to respective queue for internal use.
<b>Roles &amp; Responsibility</b>	Read incoming packet and push it to the respective queue based on MAC address and created a proc entry for the Driver module.
<b>Skill Set</b>	C Language, Data structure and Algorithm, Linux System Programming, TCP/IP Protocol, UDP Protocol, Router Configuration, Driver Module

<b>Communication Library</b> <span style="float: right;"><b>[Owner]</b></span>	
<b>Detailed Overview</b>	Implemented a library for MODBUS Protocol, lwip HTTPS, RTC App, Input/Output Operation, and Read Meter App.
<b>Roles &amp; Responsibility</b>	Being the product owner implemented the whole code from scratch and did developer testing.
<b>Skill Set</b>	C Language, MODBUS Protocol, TCP/IP Protocol

<b>Communication Library</b>		<b>[Owner]</b>
<b>Detailed Overview</b>	Implemented a library for TCP/IP, UDP, RAW, UNIX, and NETLINK socket communication to overcome code repetition. Created the APIs like Open_Socket, Send_Data, Receive_Data, and Close_Socket.	
<b>Roles &amp; Responsibility</b>	Being the product owner implemented the whole code from scratch and did developer testing.	
<b>Skill Set</b>	C, DS Linux System Programming, TCP/IP Protocol, UDP Protocol	

#### ADDITIONAL COURSES & CERTIFICATES:

- **Naresh I Technologies:** - Python  
November 2020 –January 2021, Hyderabad
- **Naresh I Technologies:** - Advance Data structure and Algorithms Training  
November 2020 –January 2021, Hyderabad
- **Vector India Pvt. Ltd.:** - Advance Embedded systems & Linux Internal Program  
July 2018 –Jan 2019, Bangalore
- **SIGMA Institute:** - Embedded system Training  
June 2013 –May 2014, Ahmedabad

#### EDUCATION QUALIFICATION LAST:

- S. P. B. Patel Engineering College: - B.E in Electronics and Communication  
June 2010 –May 2014, Mehsana/ Secured 7.79 CGPA

#### PERSONAL DETAILS:

- **Full Name:** Prajapati Pratik Lilabhai.
- **DOB:** 03<sup>rd</sup> August 1992
- **Address:** D/439 Krishna Nagar Soc-2., Nr. Dipali, Adinathnagar, Odhav, Ahmedabad – 382415, Gujarat.
- **Languages:** English, Gujarati, Hindi
- **Nationality:** Indian
- **Hobby:** Travelling and Trekking, Outdoor Sports

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#### DECLARATION

I affirm that information provided above is genuine to the best of my knowledge.

Place: AHMEDABAD

Pratik Prajapati