

RAJAT SRIVASTAVA

Email: rajatsrivastavaaxon@gmail.com, Mobile: +91-8299415875,

LinkedIn: <https://www.linkedin.com/in/rajat-srivastava09/>,

GitHub: <https://github.com/E2-80788-RAJAT>

BRIEF INTRODUCTION:

Embedded Software Engineer with 1+ years of experience in firmware development, building upon a strong foundation from a Post Graduate Diploma in Embedded System Design. Proficient in developing and debugging firmware for ARM Cortex-M microcontrollers, leveraging **FreeRTOS** and implementing drivers for peripherals using **I2C, SPI, and UART**. Additional exposure to **Embedded C, Data Structure in C, Embedded Linux, Embedded Operating Systems** and IoT protocols like **MQTT**. I am a self-starter with a strong ability to work autonomously and collaborate effectively within cross-functional teams on complex systems. A proactive problem-solver dedicated to creating efficient and reliable embedded solutions.

PROJECTS:

IRD Unit, IIT Delhi, New Delhi(Aug, 2025 – Present)

- Automated Basti Making Machine.

Engineered an automated liquid dispensing system using a NUCLEO-H7A3ZI-Q microcontroller. The system was designed to precisely control a Kamoeer peristaltic pump via a TB6612FNG motor driver for accurate dispensing of four liquid ingredients. Real-time level monitoring was implemented using VL53L1X Time-of-Flight sensors integrated into the hoppers, while system operation was managed through a user interface comprising a 16x2 LCD and a 4x4 matrix keypad. Firmware was developed in Embedded C using STM32CubeIDE and HAL libraries to handle peripheral control and system integration.

GitHub : https://github.com/E2-80788-RAJAT/Automated_Basti_Machine_IITD

Sunbeam Infotech Private Limited, Pune (Aug, 2025 – Sep, 2025)

- Implementation of FTP Server using C on Linux

Designed and built a functional FTP server to deepen understanding of network programming and Linux systems. The project involved creating TCP/IP sockets to establish a client-server architecture, implementing a multi-client model for handling concurrent users using `fork()` to handle simultaneous user connections and file operations. Key features included a secure login system and support for essential commands like file upload (STOR), download (RETR), and directory listing (LIST). The server was rigorously tested to ensure robust performance, utilized tools like Wireshark for packet

analysis and FileZilla for functional testing, validating server reliability, demonstrating strong skills in C programming, Linux system calls and network protocol implementation.

GitHub : https://github.com/Internship-Team/Sunbeam_internship/tree/ishira

Certificate :

https://drive.google.com/file/d/1vhWIjNqV9pKpMIjwLiNs_2dpKVictiJ/view?usp=sharing

Morphedo Technologies Private Limited, Noida (Dec, 2024 – Aug, 2025)

☐ DIALA.

This is medical device used for reprocessing of the Dialyzer in the dialysis. My area was basically to manage the TCV (Total Cell Volume) cycle of the machine using valves connected to GPIOs of the micro-controller, water pressure sensor is used to measure the pressure via I2C communication protocol.

Integration of load cell in Diala to get the weight of Tank and draining process.

GitHub : <https://github.com/E2-80788-RAJAT/Ventro/tree/main/new/new>

☐ VENTRO.

This project is all about the ICU Anaesthesia ventilator, My contribution included oxygen sensor interfacing with the ventilator to show oxygen concentration using SPI protocol. Also, worked on BMS (Battery Management System) to indicate battery status through ADC pin on the DWIN display using UART, worked on various modes (VCV, PCV, SIMV, PSV etc.) and managed freeRTOS task to develop Notification and alarm-based system. Restored patient's data when the main MCU's power supply off using Flash memory of STM32F407VET6 and ATMEGA328P to get pressure readings and flow reading using AMS5812 and a flash memory W25Q16 which uses SPI protocol for communication.

GitHub : <https://github.com/E2-80788-RAJAT/Ventro>

Spot Transit Tech Private Limited, Mumbai (Aug, 2024 – October, 2024)

☐ Gate Control Unit (GCU) at Lucknow Metro Rail Corporation (LMRC).

I developed embedded solutions using the STM32F407 microcontroller. My primary responsibility was to control the Gate Control Unit (GCU) at LMRC, managing the sequence of passenger movement through a gate system using OMRON sensors. I also programmed the logic for top lamp indication lights, enabling proper visual notification and alarm system as per gate operation status.

CDAC, Pune (Sept, 2023 – March, 2024)

☐ CAN based Automotive Diagnostic System with IoT connectivity

This project implements an embedded system that can capture the internal parameters of a vehicle such as engine temperature in passenger module. Engine temperature is measured using DHT11. STM32F407VG Discovery Board is used for real time data

acquisition using the above sensor and it is then interfaced with another STM32F407VG using CAN protocol for sending data to an end user and then displaying the data using IOT connectivity.

EDUCATIONAL BACKGROUND:

S. No.	NAME OF QUALIFICATION	NAME OF INSTITUTION	UNIVERSITY	PERCENTAGE OF MARKS OBTAINEDS	SESSION
1.	Post Graduate Diploma in Embedded Systems Design	CDAC, Pune	CDAC, Pune	56%	2023-2024
2.	B. Tech in Electrical Engineering	Government Engineering College, Bikaner	Bikaner Technical University	73%	2019-2023
3.	Intermediate	Kendriya Vidyalaya, B.L.W, Varanasi	CBSE	79%	2018-2019
4.	Matriculation	Kendriya Vidyalaya, B.L.W, Varanasi	CBSE	95%	2016-2017

INTERNSHIPS:

- ☐ Technical Training Centre, BLW, Varanasi (Indian Railways)

I did my summer training at BLW Varanasi wherein I interned at the following centres involved in the development of railway electric engines.

- SCADA (Supervisory Control and Data Acquisition): Herein, I got introduced to a system of hardware and software components used to monitor and control process in real-time. The system relied on communication networks to transmit data between the supervisory computer and remote field devices.
- LAS (LOCO Assembly Shop: Herein, components like braking systems, wheels and axles, control system, fuel system, etc. were brought together for assembling into a complete unit.
- MRS (Main Receiving Station): This centre served as a primary receiving point for high-voltage electricity from the transmission network and for further distribution to various substations or networks.

SKILLS:

- ☐ C programming, C++, Python.
- ☐ Embedded C
- ☐ Embedded Linux

- ☐ RTOS (Real Time Operating Systems)
- ☐ CAN Protocol
- ☐ Communication protocol: SPI – UART – I2C – MQTT
- ☐ Embedded Linux Device Drivers.
- ☐ Operating Systems.
- ☐ Microcontroller's architecture.
- ☐ IoT.
- ☐ OOPS.
- ☐ GitHub.
- ☐ OpenCV.

INTERESTS:

- ☐ Sports
- ☐ Travelling
- ☐ Drama
- ☐ Cricket
- ☐ Cooking