

# Vasanth Kumar Nallagatla

Aspiring Firmware Engineer with Hands-On Experience in Embedded Systems and IoT.

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## EDUCATION

### SREE VIDYANIKETHAN

ELECTRONICS AND COMMUNICATION

MAY 2024 | CGPA : 8.80

### NARAYANA JUNIOR COLLEGE

INTERMEDIATE - MPC

MAY 2020 | CGPA - 9.80

### MONTESSORI HIGH SCHOOL

MATRICULATION

MAY 2018 | GPA - 9.80

## PROFILES

Github: [nvasanthkumar](#)

LinkedIn: [vasanthkumarnallagatla](#)

Leetcode: [vasanthkumar7469](#)

Hackerank: [vasanthkumarnal1](#)

CodeChef: [vasanthkumarn](#)

## SKILLS

### PROGRAMMING LANGUAGES

- C - Programming • C++
- Embedded C
- Assembly Language
- Python
- MISRA C

### MICROCONTROLLERS

- ARM Cortex-M(LPC54606,LPC1769)
- STM32F407 • MSP430
- PIC18F • 8051

### OPERATING SYSTEMS

- RTOS (FreeRTOS)
- Linux OS

### COMMUNICATION PROTOCOLS

- UART • I2C • SPI • CAN

### FIRMWARE DEVELOPMENT

- Embedded Driver Development
- Keil uVision
- STM32CubeIDE
- ARDUINO IDE • KiCad
- Proteus • Eagle PCB

### DEBUGGING TOOLS

- JTAG • SWD • Logic Analyzer

### VERSION CONTROL

- Git • GitHub

### SOFT SKILLS

- Keen learner • Team Work
- Workload Management

### LANGUAGES

- English • Hindi • Telugu

## WORK EXPERIENCE

### EFFTRONICS SYSTEMS | FIRMWARE ENGINEER TRAINEE

JUNE 2024 - JANUARY 2025 | Mangalagiri

- Formulated RTC [Real time clock] time-sync algorithm to correct 284 ms/hour drift by adding 1 ms every 12.659 s, enhancing clock accuracy.
- Tested and validated Sensor Event Logger (SEL) functionalities in RDPM for railway signaling ensuring 95% precision in event logging.
- Managed nine peripheral interfaces (UART, I2C, SPI) for data acquisition and communication using LPC54606 MCU.
- Investigated and resolved site issues at railway stations, significantly improving system reliability and contributing to overall efficiency.

## INTERNSHIP

### AICTE | EMBEDDED DEVELOPER VIRTUAL INTERN | (CERT LINK)

MAY 2023 - JULY 2023 | Remote

- Mastered MSP430 & 8051 MCU architectures through hands-on embedded projects
- Validated embedded software, boosting system stability by 30%.
- Developed 15+ firmware modules on ARM Cortex-M3/M4.

## PERSONAL PROJECT

### DEVELOPMENT OF CAPACITIVE PRESSURE SENSOR FOR BALLON SATELLITE | COMSOL MULTIPHYSICS | (PROJECT LINK)

JANUARY 2024 - MAY 2024 | Tirupati, AP

- Designed and simulated a MEMS capacitive pressure sensor in COMSOL Multiphysics for a high-altitude balloon satellite project.
- Optimized sensor size to 6 mm radius and 1.5 mm height for compact integration.
- Achieved 0.1kPa pressure sensitivity within miniaturized dimensions for accurate altitude data acquisition.
- Demonstrated 93% accuracy in pressure calculations for the balloon satellite project

## CERTIFICATIONS

### MASTERING RTOS : HANDS ON FREERTOS AND STM32F4X WITH DEBUGGING | UDEMY |LINK

NOVEMBER 2022

### PROGRAMMING IN C | GREAT LEARNING ACADEMY |LINK

MAY 2023 - JUNE 2023

### LEARN C++ PROGRAMMING -BEGINNER TO ADVANCE UDEMY |Link

APRIL 2025

## ACHIEVEMENTS

### PROPOSED NEW TIME SYNC ALGORITHM

NOVEMBER 2024

- Proposed a novel time synchronization algorithm to reduce RTC clock drift, improve accuracy by 15% using Keil uVision IDE.