


# Sriram Panduranga Baliga

Embedded/Firmware Engineer with expertise in embedded software development, HMI design, and hardware prototyping. Proficient in C/C++ with experience in fault analysis, code optimization, and firmware development across multiple platforms. Skilled in working with microcontrollers, debugging hardware and software issues, and integrating embedded systems. Passionate about R&D, product innovation, and technical problem-solving, with a strong background in system validation, low-level firmware optimization, and real-time embedded applications.

 [srirambaliga07@gmail.com](mailto:srirambaliga07@gmail.com)

 (+91) 8147336569

 [www.linkedin.com/in/srirambaliga](https://www.linkedin.com/in/srirambaliga)

## SKILLS

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**Languages:** C/C++, Embedded C.

**Embedded Systems & Microcontrollers:** ATmega, Renesas, Infineon, STM, Raspberry Pi, Texas Instruments.

**Firmware Development:** Bare-metal programming, Device Drivers, RTOS, Bootloader Development, Low-level firmware optimization.

**Protocols:** CAN, SPI, I2C, UART.

**Software Development Tools:** Linux, ROS, MobaXterm, clang-format (for code formatting).

**Hardware & PCB Design:** Schematic design, PCB layout, circuit debugging.

**Testing & Validation:** Robot software testing, System validation.

**Version Control:** SVN, GIT, Sourcetree, Docker.

**Debugging & Problem-Solving:** Hardware & software debugging, root cause analysis, issue tracking.

**Communication & Documentation:** Technical documentation, report writing, team collaboration.

**Time Management & Adaptability:** Handling multiple projects, learning new technologies quickly.

## WORK EXPERIENCE

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### Spacegraph Technologies Pvt Ltd

Associate Firmware Engineer

Aug 2023 - Present

- Worked on Embedded Software Development and Validation.
- Implemented building and prototyping HMI using Candera CGI Studio.
- Programming in C/C++.
- Developing and maintaining Platforms for CANDERA CGI Studio.
- R&D for the development of Software Products.
- Proficient in using lab equipment such as Protocol Analyzer, Oscilloscope, and Logical Analyzer.
- Worked on Embedded Development Boards (Atmega, Texas Instruments, Renesas, STM, infineon).
- Working on hardware fault debugging.
- Firmware Architecture.
- Automotive HMI Design and Development on CGI Studio.
- Client POC and Demos.
- Exhibited as and Exhibitor for various Expos.
- Trained Interns.

### Lycan Automotive

Power Electronics Intern

Jun 2023 - Jul 2023

- Design and Implementation of low voltage systems in EVs.
- Schematic Implementation.
- EV prototype Testing.
- Study of ECU working and prototyping.
- Implementation of ECU using STM32 Microcontroller.
- Prepared a detail oriented Bill of Materials.

### Defence Bio Engineering & Electro Medical Lab (DEBEL) DRDO

Electronics Engineering Intern

Aug 2022 - Oct 2022

- Assisted scientists in their research and studies.
- Worked on data acquisition.
- Worked on electromyography acquisition and filtering.
- Study in IMU sensors Study on biomedical instrumentation.
- Study of gait analysis using IMU sensor.
- Worked on Digital Oscilloscope.
- Schematic Design and Hardware Prototyping.
- Schematic Implementation.
- Preparing Bill of Materials.

## Servocontrols & Hydraulics (I) Pvt. Ltd

Electronics Engineer Intern

Jun 2022 - Jul 2022

- Hands-on Training on LabVIEW.
- Work in LabVIEW.
- Worked on PLC's using Codesys Software.
- Testing of Magnetostrictive Linear Position sensor (MTS).
- Study on working of mobile Hydraulics.

## PROJECTS

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### CAN-based Boot Loader

- **Objective** : Developed and tested a CAN boot loader for secure firmware updates.
- **Highlights** : Created test Firmware, unit tests, and tools for building/Flashing. Ensured cross-platform compatibility for automotive/industrial systems.

### Ather HMI POC

- **Objective** : Built an HMI solution for Ather using Candra CGI Studio.
- **Highlights** : Designed UI, state machine for smooth navigation, and real-time data integration. Delivered a user-friendly HMI concept for automotive applications.

### Human Detection AI Robot

- **Objective** : Developed a robot for human detection in search, rescue, and security.
- **Highlights** : Integrated Raspberry Pi, Pi Camera, and sensors for reliable detection. Funded by Karnataka State Council for Science and Technology.

### EMG Signal Acquisition System

- **Objective** : Created a low-noise EMG signal acquisition system.
- **Highlights** : Designed filters for amplified, clean signals, submitted to DEBEL (DRDO).

### Gait Analysis for Limb Prostheses

- **Objective** : Analyzed gait using sensors for prosthetic research.
- **Highlights** : Captured and plotted gait data with IMU, impact sensors, and Python. Submitted findings to DEBEL (DRDO) for biomedical applications.

### LEICA-CAN-Issue-Investigation

- **Objective** : Debugged and resolved CAN-based communication issues in a medical device for Leica Biosystems.
- **Highlights** : Conducted in-depth hardware and software analysis using diagnostic tools. Identified potential hardware faults through preliminary and detailed testing. Collaborated with hardware consultants to refine root cause analysis and proposed solutions for design fixes.

### CANDERA Platform

- **Objective** : Working on the CANDERA platform team to analyze faults and maintain software/hardware builds across multiple platforms.
- **Highlights** : Investigating system faults, updating code, and ensuring stable software releases. Performing hardware and software builds while validating functionality across supported platforms.

## EDUCATION

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### S.G. Balekundri Institute of Technology

Bachelor of Engineering in Electronics And Communications Engineering - 8.2

Aug 2019 - May 2023

- Completed multiple Internships during Engineering.
- Organized multiple workshops and events for both the department and the college.
- Submitted various projects and research papers related to the fields of Electronics and AI.
- Participated in various competitions both within and outside of the college.
- Graduation with FCD.

### Alva's Education Foundation

Pre - University College, Science With PCM & Electronics - 82%

2017 - 2019

- Attended various competitions for the college.
- Primary focused on studies and getting good grades in science and Math's.
- Studied Electronics as an elective subject.

### St. Pauls's High School

High School - 78%

2017

- Basic schooling up to 10th.
- Participated in the National Cadet Corps (NCC) and attended a national camp in Delhi.
- Received the Best Firer Silver Medal at the All India Thal Sainik Camp (AITSC).
- Received the Chief Minister's Commendation for outstanding achievements representing the state of Karnataka.
- Organized numerous inter-school national science and cultural events.
- Participated in and won prizes in numerous inter-school competitions conducted in the region and nearby areas.