

MAHADEV BHENDE

EMBEDDED SOFTWARE ENGINEER

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ABOUT ME

Firmware Engineer with 2.6 years' experience in firmware development, hardware-software integration, and real-time systems. Proficient in C/C++, STM32/ARM Cortex, PIC, and Linux-based systems. Skilled in UART, SPI, I2C, CAN, ADC, timers, and interrupts. Experienced in RTOS (FreeRTOS), firmware optimization, protocol integration, and debugging using logic analyzers & oscilloscopes. Strong background in STM32CubeIDE, MPLAB, Git, Makefiles, and Agile workflows.

SKILLS

Programming: C, C++, Firmware Development in C, Shell Scripting
Microcontrollers: STM32, ARM Cortex, PIC18F4580, Arduino, ESP32
Protocols: UART (RS-232), SPI, I2C, CAN
Peripherals: GPIO, Timers, Interrupts, ADC, PWM
Tools: STM32CubeIDE, MPLAB, Git, Makefiles, Arduino IDE, JIRA
OS: Linux-based systems (Ubuntu, Fedora)
Development Models: V-Model, Agile (SDLC)
Debugging: Logic Analyzer, Oscilloscope, JTAG/SWD

PROFESSIONAL EXPERIENCE

Mindage Solutions Pvt. Ltd., Pune - Firmware Engineer (Feb 2025 - Present)

- Engineering STM32/ARM Cortex firmware, peripheral initialization, and debugging.
- Integrating protocol stacks (UART, SPI, I2C, CAN) in real-time projects.
- Utilising STM32CubeIDE, Git, and Jira in CI/CD environments; supporting module validation.

Foxconn India Mega Development Pvt. Ltd., Bangalore - MLB Trainee (Sep 2024 - Feb 2025)

Stylus Systems Pvt. Ltd., Bangalore - Firmware Engineer (Jun 2023 - Sep 2024)

- Designed biomedical glove pinhole detection system improving test throughput by 20%.
- Developed STM32-based control for 64 simultaneous glove tests via rotor-stator mechanism.
- Integrated RS-232 with SCADA for real-time data exchange; reduced communication failures by 40%.
- Implemented ADC-based pressure sensing for accurate classification and fault recovery.

Stylus Systems Pvt. Ltd., Bangalore - Firmware Trainee Intern (Aug 2022 - Jun 2023)

- Contributed to real-time microcontroller projects using STM32 & PIC MCUs.
- Developed peripheral drivers for UART, SPI, I2C, timers, and GPIO.
- Assisted in Linux driver development and hardware debugging.

KEY PROJECTS

Biomedical Surgical Glove Pinhole Detection System (Jun 2023 - Sep 2024)

- Automated detection using high-precision pressure sensors & STM32 controllers.
- Managed 16 modules (4 actuators, 4 sensors each) via RS-232 protocol in scheduled time slots.
- Technologies: STM32, RS-232, ADC, LCD, Timers, Relays, Actuators.

EDUCATION

B.E. - Electronics & Communication Engineering
Angadi Institute of Technology & Management, Belagavi (2019 - 2023)

ADDITIONAL INFORMATION

- Languages:** English, French, Mandarin.
- Certifications:** Professional Design Engineer (PDE) License, Project Management Tech (PMT).
- Awards/Activities:** Most Innovative Employer of the Year (2021), Overall Best Employee Division Two (2024), Onboarding Project Lead (2023)