

Ganesh Bhatkar

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PROFESSIONAL SUMMARY

Embedded Systems Engineer with 5+ years experience in embedded firmware development, hardware-software integration, and real-time systems for industrial and medical applications. Currently transitioning to robotics through a self-driven UGV project focusing on modular design, ROS 2 navigation, and Edge-AI for smart cities. Seeking a Master's in Robotics in Japan to deepen expertise in autonomous systems and AI-driven urban mobility.

EDUCATION

Master of Technology in embedded systems

2023

Birla institute of technology Pilani, WILP (Work integrated learning program)

Bachelor of Engineering, electronics and telecommunication

2016

SSPM's College of Engineering – Kankavli

EXPERIENCE

Embedded software developer

August 2024 - Current

Prama Instruments PVT. LTD., Rabale, Navi Mumbai

- Designed and developed embedded firmware for laboratory and medical devices, improving system reliability and functionality.
- Implemented and tested communication protocols (UART, SPI, I2C) to ensure seamless data exchange between hardware components.
- Debugged and optimized embedded software modules, resulting in reduction in system response time and improved device performance.
- Collaborated with cross-functional teams to integrate capacitive touch sensors and contributed to product development cycle design, enhancing overall device capabilities and user experience.

Assistant R&D Engineer

April 2022 - August 2024

Deepak and Technic PVT. LTD., Bhandup, Mumbai

- Developed and implemented embedded software solutions for industrial control systems, improving system efficiency and reliability.
- Designed and programmed GUI interfaces for DWIN displays, enhancing user interaction and reducing operational errors.
- Conducted thorough code reviews and hardware integration testing, ensuring robust product performance and reducing post-deployment.
- Supported quality assurance and optimized I/O performance, leading to faster system response times and smoother production workflows.

Embedded Engineer
Nirvaa Solutions PVT. LTD. , Belapur, Navi Mumbai

August 2019 – March 2022

- Designed schematics and performed PCB routing for new hardware development, ensuring manufacturability and signal integrity.
- Developed Arduino-based embedded projects to meet specific client requirements, accelerating prototyping and testing phases.
- Conducted thorough hardware testing and debugging to identify faults and improve system stability and performance.
- Collected and processed Modbus device data to develop a Windows-based application, enhancing real-time monitoring and automation control capabilities.
- Developed Modbus and automation controllers, streamlining industrial process control and improving operational efficiency.

Freelance Educator & Robotics Mentor
Self-Employed

January 2017 – July 2019

- Delivered Arduino programming and robotics classes to students and hobbyists, enhancing their practical skills and project understanding.
- Provided guidance and mentorship to college students on project development, improving their technical knowledge and project outcomes.
- Assisted learners in troubleshooting and debugging hardware and software issues, fostering hands-on problem-solving abilities.

SKILLS

- Delivered Arduino programming and robotics classes to students and hobbyists, enhancing their practical skills and project understanding
- Programming Languages & Frameworks: Embedded C, Python, Arduino Programming, ROS (Robot Operating System), FreeRTOS
- Microcontrollers & Controllers: AVR (ATmega8, AVR128DA), PIC16F, STM32F103, STM8s003f3p6, ESP8266, Arduino, Raspberry Pi
- Communication Protocols: UART, SPI, I2C, RS232, RS485, Modbus
- Hardware & Electronics: Schematic Design & PCB Routing (Kicad), Hardware Testing, Signal Integrity, Repair & Fault Finding, Sensor & Motor Interfacing (Stepper Motors, Capacitive Touch Sensors)
- Software & Tools: Microchip Studio, ST Visual Studio, STM32CubeIDE, MPLAB X IDE, Keil uVision, Microsoft Visual Studio Code, DWIN GUI Development Windows-based Application Development for Automation.
- Soft Skills & Others: Project Mentorship & Training, Cross-functional Team Collaboration, Debugging & Troubleshooting

CERTIFICATIONS

- **Embedded System & Robotics** - i3indya Technologies – June 2016
- **Diploma in Advanced Embedded system** – Embedded Technosolutions – October 2016
- **Post Graduate Diploma in Industrial automation** – Prolific Systems & Technologies PVT.LTD – November 2018
- **PCB Design with Kicad** – Udemy | Completed
- **ROS2 for Beginners** – Udemy (In Progress) by Edouard Renard